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GEORGE F. SHRADY, A.M., M.D.

SURGEON TO ST. FRANCIS HOSPITAL, NEW YORK; CONSULTING SURGEON TO THE NEW YORK CANCER HOSPITAL, TO THE COLUMBUS HOSPITAL, NEW YORK, TO THE NEW YORK RED CROSS HOSPITAL, AND CONSULTING PHYSICIAN-IN-CHIEF TO THE HOSPITALS OF THE HEALTH DEPARTMENT OF THE CITY OF NEW YORK

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Original Articles.

THE PROBLEMS WHICH MOST PERPLEX THE SURGEON.[1]

BY ROSWELL PARK, A.M., M.D.,

PROFESSOR OF SURGERY, MEDICAL DEPARTMENT, UNIVERSITY [illegible]

THE more conversant one becomes with the literature and accumulated knowledge of others concerning the topics which especially interest him, and the more he pursues his studies within restricted lines, the more difficult it becomes to select a subject of which he may legitimately treat before such an audience as this. It is therefore with not a little hesitation, and yet with the highest appreciation of the honor done me in inviting me to address you on this occasion, that I have concluded to invite your attention to some of the problems which the medical profession as a class, and particularly those who practise surgery, are to-day most often called upon to confront, which still seem so obscure that when asked for explanations we have to confess absolute ignorance, and state that we sadly need light from any and every source.

We have a right to view with the greatest satisfaction and pride the progress which has been made both in the theory and practice of surgery, and particularly in that branch of general surgery spoken of as surgical pathology. And just here I may be permitted to remind you that, according to the best standards of the day, pathology is not distinct from but must be a part of surgery—else would the surgeon lose the explanation of both the lesion which he is treating and of the reason for his treatment. I think, then, that of all the factors that can be mentioned as having conspired to put surgery where it is to-day, the most conspicuous is the recognition which surgeons have given to surgical pathology. In consequence I may repeat here the statement which I often make, and which may well challenge contradiction—"that of all the branches of applied science, none has made more rapid progress during the last twenty-five years than surgery, save only electricity."

It being admittedly then so impossible to dissociate theory from practice, the active thinker finds himself sadly hampered in treating actual disease, when he fails to understand either its nature or the bodily conditions which have permitted its occurrence, or both. Among the so-called surgical diseases we are familiar with the active causative agents in nearly all instances, but we are far from familiar with those physical conditions of the body which seem at one time to invite and at another prevent infection. This might bring up before us the whole question of susceptibility and immunity, over which physicians and surgeons must undoubtedly vex themselves for yet many years before the intricate problems involved are regarded as settled—if, indeed, a happy solution be ever reached. Upon these subjects I have more than once addressed my colleagues in various other societies, and do not now purpose to take them up again. Nevertheless there is one aspect even of these questions which it might be well to present to you as one of universal interest, one which calls for much careful study, in which the young workers of this or any other society might profitably concern themselves.

I have long been convinced that the susceptibility and immunity of a patient about to undergo a given operation are influenced not alone by the state of his excretory organs and his freedom from toxæmia of any description, but also by the anæsthetic required for the successful and easy performance of the same, and its effects as manifested through his own blood. We have had many careful observations made with reference to the effect of chloroform and ether upon the action of the heart, the blood pressure, etc., and their effect upon the kidneys and the elimination of the drug, as well as upon the temperature of the individual.

Illustrative of careful studies of this kind is the research concerning the latter recently published by Dr. Dudley Allen,[2] of Cleveland, by all of which our clinical knowledge concerning the effect of anæsthetics has been materially augmented. I cannot conceive it possible, however, that the amount of chloroform, for example, required to keep a patient anæsthetized for an hour, and which is still being eliminated at the end of the second day, as evinced by the odor emanating from both his lungs and person, can be so long retained in solution in his blood without more or less perceptibly affecting its germicidal properties, as well as perhaps some of the other physical attributes pertaining to this vital fluid. It may be that absence of this interference with its powers may account for escape from serious infection after extensive accidental lesions, while fatal infection occurs sometimes, in spite of great caution observed, during the performance of operations under anæsthesia. To this conviction I confess I have been moved not so much by experimental evidence as by clinical observations and certain general knowledge. What is needed in this regard is exact laboratory investigation, by which, for instance, the blood of a healthy patient, about to undergo some protracted operation, should be first examined a day or two beforehand, by the spectroscope and by several other laboratory tests, to determine the exact proportion of hæmoglobin and of red and white corpuscles, while it should also be carefully tested regarding its bactericidal powers. This entire and elaborate series of examinations should then be repeated some six, twelve, and twenty-four hours after the operation, while in a general way the anæsthetic employed and the amount of blood lost should be noted. I am willing to venture a prophecy that after a sufficient number of such researches have been carefully collated important deductions can be made, and that it will be found that prolonged anæsthesia does increase susceptibility to infection or reduce immunity, as you may like to put it; which facts having been established, we may then be in better position to fortify our patients against this now known and recognized danger. All of this investigation, however, will require tremendous time and patience on the part of more than one observer, and can be carried on only in some institution well

[1] The address in surgery before the Michigan State Medical Society, Grand Rapids, May 13, 1897.

[2] American Journal of the Medical Sciences, March, 1897.

equipped for the purpose. There is here, I am sure, a chance for young men to distinguish themselves if they will devote themselves to the task.

One of the most important problems before us to-day seems to be with regard to the actual cause of death in numerous cases of acute and gangrenous appendicitis, in which almost from the outset the expressions of toxæmia and sepsis are overwhelming. I have seen too many cases of this kind not to be conversant with the gross findings. Nevertheless I am still unable, as I think is every one else, really to explain the intense toxicity that characterizes them. This is not merely a question of stercoræmia from intestinal paralysis, which undoubtedly makes up a considerable part of such a case, but to this there is added something more overpowering and not included in the ordinary expressions of intestinal auto-intoxication. I know of no chemical researches which have been made upon the pus removed from large peri-appendical abscesses, but for my own part suspect that some of the sulphur compounds generated under these circumstances, having more or less to do with the allyl group, may be blamed for a part of the poisoning of which I am speaking.

Much may be explained in one direction by the coprostatic acute obstruction so frequently met with in these cases, and to which I believe I was one of the first to call attention. Indeed, in the light of our present knowledge, this form of obstruction, due to causes proceeding from the appendix, needs to be mentioned as by all means the most common form of acute strangulation of the bowels, although it is one too often overlooked by the profession at large, and not figuring with its deserved prominence even in recent text-books and literature. This is due in some cases to intestinal paralysis, in others to adhesions and interference with motility. If personal experience may be in this matter any criterion, I should say in all cases of acute strangulation accompanied by septic symptoms, and in the absence of something definite pointing to lesion in another locality, the wisest and in the long run the safest course would be to make the preliminary incision in the right iliac fossa. In so doing the surgeon will be right four times for every error that he may make.

The extreme toxicity of all cases of putrid peritonitis is not to be explained alone by the capacity of the peritoneum for absorption. Neither is this toxicity made known by general symptoms alone. The poisons so rapidly generated seem noxious to all the cells with which they come into contact; hence gangrene or necrosis of involved surfaces appears very early. Numerous expressions of this fact may be seen in cases in which the appendix is not at fault. Nevertheless it is in the appendix that it has struck me as most conspicuous. Every surgeon of experience has, moreover, noted instances of fulminating appendicitis, in which when seen early the serous covering was not compromised to any such extent. It is probable that under these circumstances the same necrosis of the mucosa has extended over a more or less wide area inside of the cæcum, and that this is the reason why after the removal of the appendix and temporary improvement, the septic and gangrenous processes continue and cause the death of the patient two or three days later. Such cases as this must continue to be among the opprobria of surgery, unless we open the cæcum and, if this condition be found, resect a sufficient amount of it to eradicate the difficulty.

Since the publication of Dieulafoy's masterly chapter on this subject,[1] it has been established that the appendix becomes troublesome only when its lumen is occluded, and that when it once becomes a closed cavity it is simply a question of the virulence of its contained bacteria whether a small or fatal dose of toxins shall be produced.

Reflecting upon the similarity of acute cases of this character to those of diphtheria, in which beneath an area of membrane the deadly development of germs is going on, the toxins peculiar to this disease being rapidly produced, and not failing to note the beautiful and life-saving virtues of antitoxin as an antidote to the depressing poisons, I have been led to query whether an antitoxin could not be produced which should have a similar effect in cases of acute stercoræmia. While the colon bacillus is not necessarily the sole agent in producing intestinal toxæmia, it is nevertheless known to be that usually at fault. Acting upon this fact, I am now endeavoring to immunize animals to the properties of this organism, in order to see whether their serum may possess virtues by which we may overcome the depression and intestinal paralysis that bring some cases of acute appendicitis to the grave. Researches in this direction are now going on in my laboratory at home. It is quite likely that antistreptococcic serum may have also to be used in these cases.

Cancer.—But the most complex of all problems in surgical pathology to-day, and that upon which we most need light, is with regard to the nature and causes of cancer; and to this topic the remainder of this paper shall be devoted.

The indefinitely sustained power of certain cells to grow and multiply in excess of normal requirements, which is Williams' definition of the essential feature of cancer formation, is common alike to vegetables and animals of any save the simplest type. That cancer appears more prevalent among domestic rather than wild animals is a fact too commonly stated as an evidence of the effect of domestication. Were the same number of wild animals taken at random and carefully examined, I think cancer would be found to be equally prevalent in the wild state. Among animals sarcomata are much more widely diffused than carcinomata, while according to Rayer, carnivorous animals are more prone to cancer than the herbivorous, just the opposite being true in cases of tuberculosis. In the vegetable kingdom it is hard to draw distinctions between various grades of malignancy, yet that tumors kill a large proportion of trees and vegetables will not be disputed by those who have studied the subject. Furthermore, if the method of death be studied, it will be seen to resemble in all essential particulars that which produces ulceration, starvation, and finally death in animals and in man.

Those particularly interested in the general study of cancer—and who is not?—should be promptly referred at once to the various writings of Rodger Williams, who has shown himself a most painstaking and comprehensive student of the subject. To him I gladly acknowledge my indebtedness for much that has been of the greatest value to me, some of which appears in this paper.

Influence of Sex.—According to the statistics collected by him for the twenty-five years previous to 1872, for every 100 males dying of cancer, 229 females perished from the same disease. Of deaths from all causes the proportion among the males was about 1 to 100, among the females 1 to 41. In later years this disproportion has become less marked. Women are still more subject to non-malignant growths. Of cancer in women the breast is involved in 40 per cent., the uterus in 34 per cent., all other parts of the body making up the other 26 per cent. In males the parts about the mouth yield about 40 per cent. of the cases. He collected 1,878 consecutive cases of breast cancer in both sexes, in only 16 of which was the mammary gland in the male involved.

This great discrepancy holds good mainly with regard to carcinoma. When we come to sarcoma, there

[1] Manuel de Path. Int., vol. iii.

is but very little difference between the sexes, all of which Williams interprets as being due to biological peculiarities pertaining to the reproductive and nutritive organs. Thus mammary carcinoma is most prone to arise when post-embryonic developmental activity is greatest.

Influence of Age.—In the evolution of cancer, this can be accurately stated only by comparison of mortality rates with the number of healthy individuals living. After the ages studied are estimated in this way, it appears that the liability to carcinoma increases with each successive decade until the seventy-fifth year. Further study shows that the most characteristic feature in this increase is not mere advance in years, but disproportionate increase in the post-meridian years. By a most instructive diagram Williams shows that the most prolific cancer-producing age is that between the fifty-fifth and sixty-fifth years of life. In other words, during the years when the forces of growth are most active the tendency to carcinoma is small. With the period of tissue and organic maturity begins the liability to the disease, which increases until about the sixtieth year. That the uterus and breast are attacked at an earlier age than other organs is because they have become *passé* with the conclusion of child-bearing life. With the waning of developmental activities the danger of cancer increases, to pass away only when the organs have undergone complete physiological atrophy. The same statement can be made with regard to liability to known infections, whether cancer be an infection or not.

Race, Complexion, etc.—Williams has carefully studied the complexion of three hundred and eighty-four cancer patients, his investigations showing him that, especially among females, there is greater liability to this disease in brunettes than in blondes, and this in spite of the fact that the blonde type prevails among the population generally. He puts the frequency of the disease as being about twice as common in brunettes as in blondes. Beddoe furthermore states that red-haired individuals are even more exempt than others of light complexion. Our own census returns show that cancer is twice as frequent among whites as among blacks; and among whites, in this country at least, and taking it at large, Billings finds that the Irish and German are the most liable.

That the disease is said to be very rare in Iceland, Greenland, Turkey, and Greece, has of course but little interest for us in this country. It is exceedingly prevalent in China; three per cent. of the patients in the Hong-Kong Hospital suffer from the disease. It is said that cancer of the stomach is extremely rare among the Chinese. In India also the disease as a whole is somewhat rare. This may be misleading, however, because most of the people are averse to operations for anything except calculus and cataract. Certainly in the tropics, the world round, the disease is less common than in the temperate zone, though I have often said that we who live in western New York live really in the tropic of cancer, because the disease is so extremely prevalent with us.

Family History.—One of the vexed questions of to-day about cancer concerns its heredity. Williams carefully studied one hundred and thirty-six cases of breast cancer, and discovered a history of disease in the family in one-fourth of the number. So far as I have studied my own case histories, I think my proportion in which there is a family history of this disease to be a little larger even than Williams'. Any such statement as this means a strikingly high proportion of inherited lesion, no matter what this may be. Deformities, defects, and supernumerary organs are not transmitted from parent to offspring in anything like twenty-five per cent. of instances. Moreover, in some cases there is a history of multiple instances in the same family, which have not yet been sufficiently analyzed to yield positive deductions. It must be said that numerous cases occurring within one family, all of whose members live closely together, is fully as much of an argument for the parasitic nature of the disease as is its repeated occurrence in the so-called cancer houses. I know, for instance, of a house in a little town in western New York, in which during three successive generations of inhabitants, deaths from cancer have occurred, these being really among different people of the same family, but not so arranged as to be directly transmitted by inheritance.

If cancer is transmissible by heredity and is not an infection, it should tend to die out in the course of transmission, as do all abnormalites. Thus, out of three hundred marriages in which both husbands and wives were deaf and dumb, in only five per cent. of the cases were the offspring similarly affected; while of three hundred and ten deaf mutes married to those who could hear, the proportion of affected offspring amounted only to one in one hundred and thirty-five (Buxton).

Another element of uncertainty pertains to the fact that cancer is rather a disease of adult life, and it is not yet established whether offspring born before the appearance of the disease inherit any liability to it. Williams reports two instances in which both parents were cancerous, who produced seven children, of whom two died of cancer; also seven marriages in which only one parent was cancerous, from which resulted sixty-two children, of whom ten had the disease. Six marriages between those of whose parents none were cancerous, but in whose families there was a history of cancer, resulted in forty-one children, of whom eight became cancerous.

In this connection it is worth while to remind you of Broca's celebrated report, of the twenty-six descendants of a cancerous patient who attained or exceeded the age of fifty, of whom fifteen died of the disease. It is of interest also to remember that in families returning a cancer history, there will be a disproportionately large number of non-malignant tumors and cysts. Here, too, as in other instances, one generation may totally escape, while the disease appears in the second or even the third. When inherited it appears much oftener in females than in male relatives. Of interest, too, is Williams' conclusion that a large proportion of cancer patients are the surviving members of tuberculous families, and history affords the corollary that no condition which can be inherited better predisposes to cancer than that which also predisposes to tuberculosis. It appears, moreover, that in families in which cancer has prevailed there is a striking evidence of fecundity, the average number of children throughout being 4.6 to a family, while in one hundred and ten cancer families which Williams studied the children averaged 8.8.

The General Health of Cancer Patients.—Cancers appear to prevail largely in those who are subjects of hypernutrition, and this is true even of those who are survivors of tuberculous families, to which there is no exception. Beneke has described cancer patients as having large hearts and arteries with small lungs, which is just the reverse of the condition met with among those predisposed to tuberculous disease. Moreover, nutrition rarely suffers until late, at least among cancer patients, save in those whose alimentary organs are involved.

There is a general belief that a vegetable diet exempts from cancer, as compared with flesh eating; this may possibly be explained by the fact that the majority of a community among whom cancer is relatively rare cannot afford a meat diet, or it may be that a flesh diet actually predisposes to the disease. According to

Beneke, cancers are rare in prisons, where animal food is not freely furnished and where the work is hard. Nevertheless, vegetarians are not exempt from the disease. Indulgence in alcohol, if it has any effect, seems rather protective than otherwise.

Some writers attach great importance to brain exhaustion, wear and tear of the nervous system, due to the habits of society people of the day, as causes of cancer. In spite of Williams' disclaimer, I am induced to think that brain fag certainly does so interfere with nutrition as to have a causative relation to the disease. Moore's view can be pretty generally accepted "that cancer is eminently a disease of persons whose previous life has been healthy, and whose nutritive vigor gives them otherwise a prospect of long life."

Prevalence of Cancer and Its Increase.—In 1840, in England, the proportion of deaths from cancer to the total mortality rate was 1 in 129; in 1880 this had risen to 1 in 28, which shows that in England the death rate from cancer is now about four times greater than fifty years ago. Williams estimates that at least 40,000 persons are now suffering from cancer in England and Wales, whereas in 1840 the number was only about 5,500. Should the disease increase in the future at the same relative rate, it will become one of the commonest of all. This augmented mortality corresponds with increase of population in wealth and improvement in general sanitary conditions. In Ireland, where this happy condition of affairs does not obtain to a corresponding extent, the cancer death rate has been much smaller and has shown no such marked increase. In 1861, in England, there were 376 deaths from cancer to the million of population; twenty-five years later there were 610. During this quarter of a century the number of deaths from phthisis per million has diminished to three-fifths of the number at its commencement.

In the twenty years from 1870 to 1890 the increase in mortality from cancer in England is as follows: In 1870, 384 to the million; in 1880, 468; in 1890, 590. Accepting these published figures from the registrar-general's report, it would appear that the mortality has increased by 53 per cent. Nevertheless, it is not quite so bad as this, because the diagnosis of obscure cases is now more accurate than it was twenty-five years ago.

From a tabulation of the deaths within our own State of New York during ten years, from 1885 to 1895, I find that during this time there have been reported 30,692 deaths from cancer. Doubtless in a few of these cases there may have been a mistake in diagnosis, which will, however, be abundantly atoned for, and more, by the deaths which were really due to cancer and ascribed to some other cause. In 1885 there were 1,882 deaths from this cause; in 1890, 2,878; and in 1895, 3,454. In other words, in the last year of this decade the total number of deaths from cancer was twice that of its first year—which may be interpreted as meaning that the death rate has increased much more rapidly than has the population. During this same decade, also, the number of deaths from all causes has increased only from 80,000 to 121,000. During the last five years of this decade epidemic influenza alone caused 35,000 of the 121,000 deaths. It will therefore be seen how rapidly the cancer death rate is creeping up.

In 1892 Haviland published a monograph, in London, on the "Geographical Description of Heart Disease, Cancer, and Phthisis in England and Wales," in which he maintained that where cancer is most prevalent the country is low and traversed by rivers, which frequently flood the adjoining country; whereas cancer is relatively scarce in mountainous regions or where floods do not occur, and where the subsoil is either hard or absorbent. Thus he found that the Thames runs through a vast cancer field, excepting only where the chalk crops out. Williams, however, states that this cannot be true of all low-lying countries, and seeks to explain the prevalence of the disease in the valley of the Thames by conditions of life peculiar to its population. He calls attention to the fact that cancer mortality is lowest where the struggle for existence is hardest, the population densest, the general mortality highest, the average duration of life shortest, where sanitation is least perfect, and the death rate from tuberculosis highest—in other words, among the working classes—whereas the cancer mortality is greatest among the agricultural community, where people are well-to-do, and where the standard of health is highest and of life easiest. He believes the most potent factors in the causation of cancer to be high feeding and easy living, and that the farmer is in general better off than the city laborer, but more liable to cancer. So, too, in London, where the cancer rate is highest, it is significant that this is particularly true of those parts where the wealthy most abound.

Causes.—When we come to consider more in detail the causes of cancer, we shall have to discard without the slightest hesitation most of the theories which have figured in time past. We shall, in fact, find ourselves narrowed down practically to two. Cells arrange and disport themselves as they do when they form a cancer either in accordance with laws of heredity and atavism, showing ever a tendency to revert to earlier and simpler forms, or else because they are provoked to rebellion by the presence of intruding and extrinsic elements; in other words, we must explain cancer and tumor formation either on the embryonal and evolutionary basis or consider it a parasitic disease.

The traumatic origin of cancer must be based upon stronger evidence than exists to-day if it is to hold good for other than exceptional instances. Undoubtedly men are very much more subject to injury than are women, yet are not half so liable to the disease. Surely men are injured in the thoracic region oftener than are women, yet they suffer from cancer of this region only in proportion of 1 to 115 or 120. If mammary cancer were really caused by injury, the external parts would be certainly more frequently affected, whereas the reverse is true. Cancer for the most part begins as a solitary affection, which would not be the case were it of traumatic origin. If injury be made to figure at all as a cause of cancer, it must be mainly as a cause of sarcoma, since sarcoma can be once in a while traced to such accident. In this consideration I would put epithelioma in a distinct category, since I firmly believe that prolonged irritation of a surface covered by squamous epithelium and frequently infected may produce an epithelioma as an expression of this fact.

That there seems to be, in some cases at least, a particular association between cancer and previous disease of the parts cannot be denied after Volkman's record of two hundred and twenty-three cases, from various sources, of primary cutaneous cancer of the extremities, in eighty-eight per cent. of which he found that there had been pre-existing disease of the part involved; though it must be said that others have not found anything like the same percentage of relationship. At best, then, we can only say that chronic nutritive or infectious lesion cannot necessarily be regarded as antecedents of cancer.

Rindfleisch long ago called attention to what he called the infectiousness of epithelial cells. If it can be shown that he spoke with prophetic accuracy, then the parasitic theory of cancer is established. If, on the other hand, this was but a happy expression showing how epithelial cells react upon each other, then the phrase has no meaning and was simply an allusion to the metastatic spread of cancer.

Certainly the appearances in epithelial cells which have been irritated by coccidia are quite analogous to those presented by cancer cells. The effect of the intracellular growth of coccidia is to produce a hypertrophy, especially of the nuclei, which often assume a volume greater than that of the original cells, only to later completely atrophy. In other words, hypertrophy precedes degeneration. This is true of the majority of cancer cells as well. It is not alone that the parasitic nature of certain bodies found in cancer cells is insisted upon by some and denied by others. It is also true that abnormal cells develop side by side with normal, that nuclei are frequently fused together, that protoplasmic filaments are compressed by cells which have not become keratinized, and that from this series of changes result nests of epidermic pearly bodies whose constitution and appearance are abnormal. This is particularly true when the transformation of young epithelium into horny cells takes place centripetally instead of centrifugally. It is very difficult to explain the appearances brought out by Soudakewitch, who fixed his tissues in osmic acid and colored the coccidia with logwood, or, after fixing by Flemming's solution, found by means of the ordinary aniline stains that they took on a color different from that of the cellular elements.

Two Russian observers, Sawtschenko and Podwyssowski, have done a large amount of work in this direction, which has partly failed of recognition because of its inaccessibility in their language. The former has found that those bodies which he considers to be sporozoa of cancer have no proper membrane, their protoplasm being limited only by the vacuoles in which it is more or less free, it often happening that it is resolved into that of surrounding cancer cells. In its adult form their parasite is regular and rounded, granular in protoplasm, and more dense than that of the neoplastic cells; its nucleus plain, round, with chromatic meshes. This nucleus is decomposed into shreds, as sporulation proceeds, each of which particles becomes surrounded with protoplasm to form a new spore, which in time forsakes the cell in which it has thus been developed, to invade others and spread the lesion. These characteristic appearances should be looked for at the margins of tumors where the tissue is young and the process active, instead of in the central portions where nothing is going on but degeneration. Under the influence of these recent researches of Sawtschenko the parasitic theory, at first considered so seductive and a little later so disappointing, becomes again the subject of renewed interest. By some such theory alone can miliary carcinomatosis be explained.

The common solitariness of cancer invasion in man is frequently emphasized as an argument against the parasitic theory. As the disease has been more carefully studied, it is now universally conceded that cancers may originate by multiple foci, while such conditions as general carcinomatosis and sarcomatosis, corresponding so perfectly to miliary tuberculosis, seem to establish that the disease processes not only disseminate similarly, but both have living agents for their primary causes. Not much comfort for either party can be derived from the fact that multiple and widely different neoplasms may be met with coincidentally. Thus sarcoma and carcinoma may be progressing in the same patient at the same time, while either may be connected with or be independent of syphilitic or tuberculous disease. Nor can anything really reliable be yet learned from a source which, did it exist, would crown all others by its validity, for it must be acknowledged that attempts to inoculate cancer have been abortive in at least ninety-nine per cent. of instances. There is much reason for going over all this ground again, and so far improving upon previous experiments as to transplant tissue from the patient into the nearest possible like tissue of the animal. The old experiments made by Alibert and others were never successful, nor is it known that any surgeon has ever inoculated himself with cancer during an operation. There are but few authentic instances of transmission to the husband from cancer of the uterus. Still about the mouth and perineum, especially where mucous surfaces lie closely in contact with each other, there is much reason to think the disease has been spread from one part to another. Nevertheless, experimental auto-inoculations have almost all failed, in spite of the fact that eroded surfaces do become infected by constant contact with discharge from cancerous sores.

Morau reported, in 1885, the inoculation of fragments from an epithelial cancer of a white mouse into ten other mice of the same kind, with formation of cancerous nodules in eight, which themselves were used for the inoculation of yet other animals, and with success. But he did more than this; he placed healthy mice in cages over a pan containing turpentine and camphor, by which they were kept free from insects and remained in perfect health. In other cages he placed healthy mice along with bedbugs taken from the cages of cancerous mice, and observed that after a few months all the animals infected with these insects were suffering from cancer.

The germ theory of cancer has assumed among certain Italian observers the form of a yeast theory, *i.e.*, it has been ascribed to the presence of blastomycetæ, and organisms of this kind certainly have been cultivated as coming from malignant tumors. Nevertheless, inoculation experiments with them have not yet been completely successful.

In a paper presented before the eleventh congress of Italian surgeons in Rome, October of last year, Roncali summed up our present knowledge with regard to the etiology of cancer briefly as follows:

1. In the cell protoplasm and the connective tissues of cancer are found bodies, not of intrinsic but of extrinsic origin.

2. These are in appearance similar to the coccidia which have been found in the cells of epitheliomata and sarcomata.

3. They are morphologically identical with blastomycetes found in animals which have been inoculated with pure cultures of organized ferments, and resist acids and alkalies as do experimental blastomycetes. They occur only in malignant growths in mankind; in such growths they are found only at the periphery where growth is still active, and not in the centre where degeneration has taken place. They are situated either in the cell protoplasm or between the fibres, rarely in the nuclei. They stain in the ordinary fashion, and can often be obtained from tumors both in man and in animals, and can be grown in pure culture. When these cultivated products are inoculated, they force themselves into the cells and into the fibres, producing the same appearances as in those tumors in which they are naturally found. They moreover show the reaction of cellulose, which is a proof that they are not a degenerative product. Moreover, it is known that certain blastomycetes when inoculated produce hyperplastic rather than inflammatory changes.

Nevertheless, Roncali did not consider the parasitic nature of cancer to be definitely determined. It is of interest to know that Maffuci and Sirleo had found similar bodies and formed conclusions which were in no essential respect different from those of Roncali. They were somewhat inclined, nevertheless, to suspect that the blastomycetes might be present as the result of a secondary infection rather than as a primary causative agent.[1]

[1] Centralblatt für Chirurgie, No. 50, 1896; Centralblt. f. Bakteriol., No. 10, 1897.

Whatever there be to the germ theory of cancer, it meets with this additional difficulty, that it is even to-day almost impossible to state just what tumors should be considered malignant and what not. The adenomata which develop so frequently in the mammæ, the ovaries, the liver, and kidneys, seem to be peculiarly liable to subsequent malignant degeneration, while the frequent recurrence of adenoma of the breast is as well known as its conversion into carcinoma. Whether this conversion is due to infection or not is another thing to be established. The dissemination of adenomatous and papillomatous masses around the inner surface of the peritoneum or along ordinary paths, by way of the lymphatics or vessels, is another feature of malignancy which deserves further investigation. Is this dissemination by implantation, by infection, or by what? Certainly dissemination of normal epithelium is common and is not known to produce cancer. Klebs concludes that an embryonic condition of a part predisposes it to tumor formation, but that the real malignancy of tumors is due to a modification of their cells. The mere presence of cancer cells in a part seems to stimulate the surrounding tissue to growth in an altogether inexplicable way. According to Klebs, the principal change in an epithelial cell which is becoming cancerous is hypermitosis, which itself depends upon hypernutrition. It is characteristic of malignant growths that karyokinesis becomes both exaggerated and irregular, the epithelial cells being fed by the leucocytes, while the membrane of the nucleus becomes thinner, showing the process going on within to better advantage. Characteristic also is it that metamorphosis of the nuclei and formation of new nuclei follow one another in the same cell. Klebs views the cancerous process there as going through the following stages: first, chronic irritation or active inflammation induced by mechanical, chemical, or bacterial agencies; this is followed by the emigration of leucocytes and the progressive development of other cells, which have lost their faculty of normal cell reproduction because of hypermitotic activity. He suggests as a remedy to use inhibiting substances possessed of negative chemiotaxis, by which the leucocytes should be repelled and hypernutrition prevented. He thinks that possibly the toxins of erysipelas have some such power.

Williams makes what at first might seem a strong argument against the parasitic nature of cancer, by showing that in all other infectious lesions, say among the infectious granulomata, there is an identity of structure and arrangement always visible, whereas in cancer of different organs or tissues the widest differences of microscopic appearances are met with. This argument can be offset, however, by another still stronger, to the effect that in true carcinoma, at least, no new cells are introduced, nor new tissues formed, save in the sense of being a reduplication of those already existent. On the other hand, in sarcoma there is an abnormal type of cell met with, which has no business among the healthy cells of the body any more than has a giant cell containing tubercle bacilli. If, therefore, his argument is good in one way, it loses its force in the other direction.

The other side of this question is that which takes no note of parasites, considering the bodies or particles regarded as such by some to be new-cell degenerations or artefacts, or else, if germs, as present only by accident. The evolutionist's view of cancer is not necessarily that of the comparative pathologist, though the latter may hold to the former's notions in this regard. My friend, Dr. Woods Hutchinson, our professor of this department, would summarize it about as follows: The evolutionary view of cancer began unconsciously in the famous theory of Cohnheim's "rests" or "*Schlummer-zellen*"; *i.e.*, little islands or foci of cells, embedded in the adult tissues, which have retained a more primitive or unspecialized character, with its accompanying powers of independent growth. Gradually, however, as the individuality and independence of the component cells of the body became more adequately grasped, pathologists began to realize that it was not necessary to imagine the presence of any undeveloped or embryonic cells, but that any adult cell had the power of relapsing to the primitive condition and initiating the neoplastic process. In fact, cancer, like all other neoplasms and the processes of repair, came to be regarded as a reversion. That individual cells of all descriptions possess reproductive powers is clearly shown by the rapid multiplication of, for instance, the muscular fibres of the uterus during pregnancy, or the heart in hypertrophy, the lymphatics in anæmia, or the connective-tissue corpuscles in the healing of wounds. The reproductive processes from a biologic standpoint may be divided, according to their results, into, first, those in which the product is perfect, the daughter cells in every respect the equals of the parent cells; and, second, those in which this result falls short, the daughter cells being inferior in rank or vitality to the parent cells. Each of these is again divided into two—those whose products are useful to the body as a whole, and those which are not. So that we have four great processes of cell-breeding going on: (1) Those in which the new cells are perfect (true to type) and of utility to the organism, such as genuine hypertrophy, leucocytosis, etc. (2) Those in which the new cells "breed true," but are of no utility to the organism, as the benign tumors. (3) Those in which the new cells are imperfect, but of value to the body, as in scar tissue. (4) Those in which the resulting cells are of lower grade or vitality, and of no utility to the organism, as in sarcoma and carcinoma.

In fact, cancer is regarded as an abortive attempt of gland epithelium to reproduce itself, *i.e.*, a parody upon gland tissue. Its "sin," its essential pathologic character, lies in the fact that its cells breed with an utter disregard of the welfare of the body as a whole. Its danger obtains in that their offspring are so immature and degenerate as sooner or later surely to break down, decay, and poison the lymph current. Sarcoma is a similar process on the part of some mesoblastic tissue cells. Supposing this statement of the nature of cancer growth accepted, can evolutionary pathology offer any explanation for the setting up of this process in any particular group of cells? The evolutionist believes that it can. The one factor which is universally admitted as predisposing to cancer is senility. It is emphatically a disease of middle or old age.

Just as soon as the food supply begins to be cut off from the peripheral organs and tissues, the liability to this process is immensely increased. The same thing will be found to be true of the organs most commonly attacked. In a large majority of cases these will be found to be either functionally senile or ancestrally either in a condition of progressive atrophy or of marked instability. As instances of the first class are the mammary glands and uterus, which after the failure or disappearance of their function become the site of nearly eighty per cent. of all cases of cancer in the female. As an instance in which both predisposing factors coexist, we have the lips and tongue, in which both the atrophic changes consequent upon the loss of the teeth and the "border-line" character of the epithelium, poised between mucous and cutaneous possibilities, as it were, unite to render its cancer record next in darkness. For ancestral instability few localities can compare with the pylorus, the old gizzard region, and here again we have a most frequent site of carcinoma. All of these facts seem dependent upon one common biologic law, and that is that lowered nutri-

tion, whether individual or ancestral, means increased liability to cancerous change; that just as soon as any organ or tissue finds itself being slowly cut off from its nutritive supplies, it is apt to begin breeding on its own account, like plants running to seed in poor soil, in a desperate endeavor to hold their own—in short, that cancer is literally a "rebellion of the cells," as Jonathan Hutchinson has termed it, and, like many another rebellion, is chiefly provoked by starvation and want.

It will be seen, then, that the problem of the nature of cancer and of its cure is a most complex one, and must be studied from many sides. Permit me to indicate in some degree, and yet at present in a purely suggestive way, how we may profitably approach it.

First of all from the statistical side; this must include a careful history of each case, including that of the family. One of the difficulties met right here is that of getting an accurate or reliable family history. The influence of alleged injuries or previous inflammation of the part involved must be carefully weighed. We need to make out especially whether only a cancerous diathesis can be inherited, or only the active disease, or both; for instance, a woman aged forty-five develops a cancer—is her daughter of twenty years of age any more liable than any other girl or not?

We need next to study it by localities, especially those of reasonably fixed proportions, as in the rural districts, in order to know whether it is really or only apparently on the increase. Moreover, it should be established, if possible, whether the numerical increase is due solely to more accurate diagnosis or has an actual basis of reality. The question of so-called cancer houses must be carefully studied, and positive evidence secured. In such instances there must be a careful scrutiny of evidence to show whether this is due to anything more than mere coincidence.

Next we should determine in what race and under what social conditions the disease is most prevalent. This will also necessarily bring up the question of dietetic habits. Is it more prevalent, for instance, among brain workers or other wage earners, among vegetarians or meat eaters?

A study of localities must comprise also an estimation of the physical environment—what the climatic conditions, what the geological formation, what especially the drinking-water supply. Not that this is so important for a single small locality; but if it be shown that where the disease is prevalent similar physical conditions exist, it means a great deal accomplished toward the final explanation for which we seek.

Besides the statistical study of the disease and the external conditions surrounding cancer patients, the problem must also be attacked by a careful laboratory study of fluids and tissues. First, to establish whether the disease is primarily local or systemic. Such a study is, of course, inseparable from the other examinations to be immediately spoken of. Excretions, especially the renal, must be carefully investigated; among other reasons, to ascertain whether the diminution of urea usually noted in these cases is to be regarded as among their causative or consequential features. The blood must be studied with the spectroscope as well as by all the other modern means of examining this fluid. Its hæmoglobin and other physical constituents must be carefully estimated, and its corpuscles frequently examined. The presence of sugar or of peptone in the blood must also be as frequently determined. Then the tissues of the tumor itself must be carefully investigated, chemically, histologically, and bacteriologically. The whole question of inoculability of cancer fragments must be again gone over most carefully, with particular effort to imitate natural and original conditions as nearly as possible. If cancer really be a parasitic disease, it is only a question of time when the parasite may be cultivated in pure culture and inoculated with success. It does not follow necessarily that any of the culture media now in use will suffice for this purpose; to settle this question we must learn how to cultivate sporozoa and all the other reputed parasitic growths outside of the body, and at first without any reference to those whose agency in this direction we suspect.

Finally, the problem must be attacked also from the side of comparative pathology, *i.e.*, from the evolutionist's and embryologist's standpoint. To this effect we must begin with the lower forms of life, and determine the causes which operate to produce neoplasms in them. We must begin even lower down in the vegetable kingdom than those trees which produce tumors (xylomata) as the result of climatic conditions or parasitic vegetables or insects. We must then look upward along the scale, in order to determine whether tumors, including cancers, are entitled to be regarded as reversions to earlier and simpler cell forms, or simpler types of cell arrangement, or whether it can be shown that they never assume malignant characteristics save when provoked thereto by the irritation of parasites.

All of this means not merely a painstaking and almost discouraging task from the outset, but it means more than can be accomplished by any individual working alone. It requires the collective efforts of numerous men versed in all the branches of biological study, and possessed of such training in logic as shall permit of no false deductions; it is, in other words, an enormous task, but not necessarily a hopeless one. If any inquiry into that which affects man's health and welfare deserves to be undertaken by the State or the government at large, it certainly is this. I am far from making light of the studies into which the general government has entered regarding diseases of plants and animals, the establishment of bureaus of animal industry, the detection of trichinosis, etc., by all of which great benefit has accrued to our people generally and the spread of disease been notably limited. Nor would I discourage in any sense the publication of a State's reports concerning the mineralogy, geology, and natural history of its territory, by which knowledge of greatest importance is collected only to be suitably distributed. But I claim that we have in this matter of cancer to deal with a disease of horrible nature, of almost inevitable fatality, of common occurrence, which is certainly on the increase, and that at present we are helpless to combat it as we ought. The people naturally look to us both for explanation and for relief; we do the best we can, but this is often very little. If the lives of our cattle are of value, how much more so the lives of our citizens. In what more humane or, from the merely financial aspect, in what more satisfactory work could a government engage than by the employment of experts competent for this work, endeavoring, no matter how long it may take, to settle this problem? When the real cause or causes of cancer are known and understood, then and not until then can a rational, early, non-operative, and successful treatment be applied.

It would hardly be fair to dismiss this most gloomy and unpromising of all the problems which present themselves to us, without asking, in conclusion, whether any measure, drugs or otherwise, can be regarded as either certain or having any efficacy as against this dread disease? To this, first of all, I would say that in a great majority of cases cancer appears to us as a local affection, which, could it be reached early enough and attacked radically enough, might be extirpated. There is no question but what early and extensive operations in select cases give permanent relief. To bring about this happy result, however, requires the lucky coincidence by which an in-

telligent patient goes early to an intelligent physician, and has his or her trouble recognized at a time when sweeping operation can be made with prospect of success. It requires also that the disease shall be located in some accessible part of the body, in order both that diagnosis may be more exact and operation justifiable —except those trifling growths upon the surface which may be removed by caustic pastes, if one prefer such a course. The treatment by cancer pastes, especially the removal of large masses by this means, is alike unscientific, barbarous, and damnable. It bespeaks the meeting of two cowards—the patient who is afraid of the knife, and the pseudo-surgeon who is afraid to use it. Could the real truth be known about institutions where this method is practised as a specialty, it would be far more discreditable both to intelligence and to the honesty of those who manage them than is generally appreciated.

But what should be said of operations in hopeless cases? I maintain that one has a right, and a duty to the patient as well, to operate in absolutely hopeless cases for either one or more of the four following reasons, providing the patient willingly consent. These are: (1) The relief of pain; (2) the avoidance of constant hemorrhage; (3) the affording of a temporary respite; and (4) the removal of foul sloughing growths, which are an offence alike to patient and family. In cases coming under either one of these heads, the propriety of an operation may be submitted to the judgment of intelligent people, and to the unintelligent the choice of that which one may think well to advise.

A study of the causes of cancer being so inseparable from a discussion of the cell doctrine, one cannot but feel that if there be drugs which influence cell nutrition and cell activity, it is among them that we must look for internal remedies which may have a palliative or curative effect. First among these I place the time-honored remedy arsenic, which, so far as I know, can vie only with one of the latest aspirants to honor, namely, nuclein, for which we shall be ever deeply indebted to Vaughan and his colleagues in the University of Michigan—these being the two remedies which more than any others possess these properties. We certainly lack exact studies demonstrating their power in this direction, but this is another of the investigations to be taken up when this ideal research laboratory, at which I have hinted, is formally organized. It is difficult to say positively whether any true cancer has ever disappeared completely under the influence of either of these remedies. Nevertheless, I have personally seen remarkable retrocession of large and bulky tumors after the use of arsenic internally, and most encouraging reports have of late come from those who have been using nuclein for this purpose. Still it is well known that spontaneous resolution of tumors is believed in by not a few men of greatest eminence, while for myself personally its possibility seems to have been clearly demonstrated in more than one case under my observation. Certain it is, however, that in some instances one must either allow this spontaneous retrocession to have occurred, or ascribe the wonderful change to the influence of certain drugs. For my own part, also, I have such faith in the virtues of arsenic that I prefer to keep all my patients more or less steadily under the influence of the drug in some form for months after operation, while it has seemed to me that I have obtained the best results by using a combination of arsenic, gold, and mercury, in connection with the three haloid elements, chlorine, iodine, and bromine. Whether the benefit which in my observations of this compound has really occurred is due to the influence of one or more of its components upon cell activity, or to the fact that the combination certainly serves as an ideal internal antiseptic, I will not attempt to say. At all events there is more rapid restoration of hæmoglobin, disappearance of the anæmia due to poikilocytosis, as well as of the leucocytosis which is a feature of the cancerous cachexia, than I have known of after using any other drug.

Lastly, without stopping to mention any of the other drugs recently or in time past lauded for this purpose, all of which have so far proved disappointing, I would only mention the modern treatment of cancer by the use of toxins of erysipelas. Having experimented diligently with the toxins and without other effect save to prove their general inefficacy, I am compelled to say that in most respects the treatment has proved a disappointment, the results in most of the cases under my observation having been negative; while for every instance in which more or less benefit has resulted, I could bring two or three to bear in which positive injury has resulted. It may be, however, that we are on the right track in this matter or near it, and need mainly to enlarge our observation and still further use our reason.

CLINICAL REMARKS ON SOME SUPPURATIONS OF THE URINARY APPARATUS.

By REGINALD HARRISON, F.R.C.S.,

PRESIDENT OF THE MEDICAL SOCIETY OF LONDON.

I HAVE selected for consideration some points which seem to arise out of the pathology of certain suppurative processes as observed in the urinary organs in relation to the more modern treatment of surgical lesions and infections as generally practised.

I shall first illustrate my observations by taking the most common as well as the farthest-reaching cause of suppurations of the urinary organs, as occurring in the form of primary gonorrhœal infections in the male and the female, and as secondary developments in other parts of the genito-urinary system, as more frequently observed in the latter sex.

The advances that have been made in connection with the bacteriology of the urinary organs, in reference more particularly to the kind and extent of these infections, has already led to some useful applications in the way of treatment, which I will briefly notice. The investigations of Guyon, Janet, Hallé, and others of the French school, more particularly as regards the life history and cultivation of these micro-organisms, are of much interest and importance. It is, however, to the practical aspect of the subject that I shall confine my remarks.

The first point that strikes one is that many of the cases spoken of as instances of chronic suppurative urethritis or gleet represent a far more extensive invasion than is generally supposed to be the case. In this lies, I have no doubt, an explanation of the difficulty that is not unfrequently experienced in bringing cases of this kind to a successful and speedy termination. Many gleets are merely reinfections of the urethra from a bladder which serves the purpose of a medium for bacterial cultivation. So long as a gonorrhœa is confined to the area of the urethra, as defined by that portion of the canal which lies in front of the compressor urethræ or "cut-off" muscle, the task of successfully combating the infecting suppuration is not usually a difficult one. The disease is within limits which can be readily acted upon by various agencies, administered either locally or by internal medication, and its course is generally limited both in severity and duration. When, however, these boundaries are exceeded and the bladder is invaded, it is not easy to prevent reinfection taking place as if from an extraneous source. Hence the disease may be almost indefinitely protracted.

Nor is invasion of the bladder in this way uncommon or necessarily indicated by acute symptoms, such as would unmistakably draw attention to the occurrence. In most instances of this the prostate is the only part of the urinary apparatus that shows any active indication of contact with the septic products, the mucous membrane of the bladder, though harboring them, being singularly insensitive to bacterial influences. That infection occurs in this way, may be readily demonstrated. When the bladder has been thus infected, the conditions of the urinary organs, particularly during the night, are extremely favorable for bacterial cultivations, a circumstance which I believe may explain the constancy and degree of matutinal suppuration exuded by the urethra, which is a prominent symptom in this class of cases.

It is rare, I believe, for gonorrhœal organisms to make their way up the ureters and to invade the kidneys, a fact which is no doubt due to the guarded manner in which these ducts enter the bladder and the constancy of the downward flow of the urine. That renal infection and urethral inflammation, sufficient to cause a pyelitis of the former and a contraction or stricture of the latter, can occur has been demonstrated as possible. Some years ago I examined the body of a middle-aged man who died from acute single pyelitis rapidly following upon a first attack of gonorrhœa. The ureter of the kidney involved was extremely dilated, a circumstance which was believed to be due to the patient having been in the habit for some years previously of passing renal calculi. The opposite kidney was much congested. Mr. W G. Nash[1] has recorded a case of strictured ureter which was probably caused in this way. In the female the widespread effects of the gonorrhœal infection are very generally recognized.

The suspicion, however, that the bladder may be infected with micro-organisms should be made a matter of proof, and this can generally be done. For this purpose care should be taken to obtain a specimen of the urine as it exists in the bladder, minus any contaminations it may pick up in its transit along the urethra. The first portion of the urine passed should be rejected as probably containing the flushings of the canal, the balance being separately collected as representing the constituents of what may be called vesical urine. When it is possible a catheter specimen should be obtained in accordance with the directions of the Clinical Research Association, if there are reasons for believing that the bladder is infected. In this way gonococci may be detected in vesical urine in cases of gonorrhœa.

The mere fact that the urine is shown to contain bacteria does not necessarily imply that the individual is capable of inoculating another with gonorrhœa. When, however, the gonococcus is discovered in the urine or the discharges of the patient, as is not unfrequently the case, I do not think there can be any doubt as to the possibility of its transference to some one else. The bacteriological examination of these secretions may furnish important evidence in determining whether a person who has been comparatively recently infected should be allowed to marry. So long as these conveyors of infection can be detected in the urine or the discharges, so long may we expect that transference of the disease is apt to follow.

In these cases of secondary infection of the bladder caused by extension from the urethra, I have for some time placed much reliance upon the irrigation of the bladder and urethra with antiseptics as described by Dr. Janet,[2] with some modifications. The object is attained in the following manner: My apparatus consists of an ordinary hydrostatic bladder tank, holding about one pint of water and fitted with a nozzle to which a No. 8 Jacques rubber catheter is attached. The tank is elevated about six feet from the ground, and is filled with warm water containing thirty minims of Condy's fluid to a pint of the latter. For lubricating the catheter I use carbolized vaseline.

The patient, having emptied his bladder spontaneously, is placed in the recumbent position and the catheter is then passed. Before the nozzle of the irrigator is connected with the catheter as it lies in the bladder, the fluid is allowed to run off for a few seconds so as to insure that there is no free air in the tube of the apparatus. Then the connection is made and the fluid is allowed to flow into the bladder by degrees, until the patient is conscious of feeling distention. I generally use from twelve to sixteen ounces for this purpose, allowing it to enter the bladder in jets of about three or four ounces at a time. In this way the feeling of any sudden or extreme fulness is avoided and the entire area of the mucous membrane of the bladder is unfolded and opened out and thus comes in contact with the permanganate solution. When a sufficient degree of bladder distention is obtained the catheter is slowly removed, care being taken not to allow the fluid to escape. I then usually lightly palpate the bladder above the pubes with the hand before the patient stands up. This he should then do and proceed to empty his bladder of its contents by his natural efforts. Thus not only is the bladder washed out but the whole urethra is flushed in a manner that is impossible with any other artificial method. As the patient is voiding the contents of his bladder it is well to direct him suddenly to interrupt the outflow once or twice by pressure with the finger on the penile urethra. In this way the lacunæ of the canal are also distended and flushed by the irrigating fluid. This completes the process, which may be repeated once or twice in the twenty-four hours, until the urine and the urethral mucus are found free from organisms. Most patients after proper instruction will be able to carry out all these details. On the conclusion of each irrigation the patient should rest for a time in the recumbent position.

I have referred only to the permanganate of potassium in great dilution as the flushing agent for use in these cases. Half a drachm of Condy's solution, as I have already mentioned, gradually increased to a drachm in a pint of water, has given me good results. Neutral sulphate of quinine (one grain to the ounce) may also be used. More rarely I have employed nitrate of silver (one-sixteenth of a grain to the ounce), and perchloride of mercury. The last sometimes produces a good deal of pain even when it is used only in the proportion of one in ten thousand. I have no doubt that for aborting infections the perchloride is the most effective. When used for the latter purpose in the proportion of one in ten thousand, and after the solution has been spontaneously voided from the bladder, as in the act of micturition, the bladder may be refilled with a strained solution of albumin, say, that yielded by one fresh egg, in a pint of tepid or nearly cold water. If this is done and the albuminoid solution voided from the bladder, any pain, smarting, or spasm that the perchloride solution produced at once ceases. Similarly a weak solution of chloride of sodium injected into the bladder after a solution of nitrate of silver has been used for this purpose, not only removes any irritation the latter may provoke but coats over the inflamed mucous membranes with a thin layer of chloride of silver which often affords much relief when cystitis is present. Probably there is no better bactericide than nitrate of silver in these cases, but it requires to be used with the precautions I have mentioned, when good results may be obtained.

[1] Brit. Med. Jour., April 8, 1893.
[2] Jour. des Malad. Gén.-Urin., Paris, 1896.

In this class of cases, in which suppuration proceeds directly from infection, the internal administration of bactericides may be advantageously combined with the local treatment I have just referred to. In rendering the urine not only sterile and destructive to the life of the gonococcus there are no more effectual agencies than some of those which are derived from the vegetable kingdom. I refer more particularly to those volatile oils which are so largely eliminated by the kidneys, among which I may instance sandalwood, copaiba, cubebs, and other similar drugs. By these it is possible so to saturate the urine as to render the existence of certain forms of infecting bacteria impossible. I shall, however, later on refer to other methods employed for sterilizing the urine, which may also be utilized in connection with the treatment of infecting forms of urethritis and cystitis.

I will now proceed to notice other forms of urinary suppurations, which may be best illustrated by certain cases of prostatic obstruction. Though the urine is in these instances usually purulent and charged with bacteria, the latter are not infective in the same sense as those I have previously referred to in connection with a specific form of urinary suppuration. On the other hand it must be remembered that these microorganisms are readily capable of transference from one individual to another through the medium of catheters and instruments of this kind, and thus they may be regarded as the factors in the causation of very extensive and far reaching suppurations in these parts.

The principles of treatment in this class of suppurations are the same as those I have already referred to, subject to certain modifications which I will proceed to notice. Putting aside the consideration of the precise means which these cases often require for mechanically emptying the bladder and thus preventing decomposition of the urine taking place, the restoration of the secretion to its normal state will be mainly brought about by the employment of antiseptics in the manner indicated. The more or less atonic condition of the bladder in these obstructive cases seldom permits us to employ the process of auto-irrigation as previously described, and we must therefore for this purpose avail ourselves of one or other of the methods usually practised.

In offering a few remarks on the toilette of the bladder I will do so in reference (1) to the disposition of the parts requiring ablution, (2) to the mechanism employed, and (3) to the composition of the cleansing fluid. Most of us, I think, will admit that we are disposed to draw our ideas relative to the process of washing out the bladder from the natural state of the parts, such as we see in anatomical plates. If, however, we take for our guidance the majority of pathological specimens illustrating the obstructive diseases of these parts, we shall at once recognize the difficulties that beset us in our endeavor to wash out these examples, as we should do in the case of a pint pitcher. Take, for instance, the hypertrophied bladders with their various saccules, pouches, and dependencies which are met with in connection with advanced urethral stricture in younger adults and in persons of more advanced age who are the subjects of obstructive prostatic disease. In many of these the bladder is no more like the natural organ than the interior of a glass bowl resembles the section of a coarse bath sponge. The contents of the latter one could hardly ever hope to wash out effectually, though one might succeed in soaking them out. For washing out the bladder I almost invariably employ the hydrostatic tank which is now so generally used. It has, I believe, many advantages over syringes, which I need not here stop to enumerate. When the bladder is much fasciculated washing out should be done in the recumbent position, with the object of opening out the mucous membrane as completely as possible without causing pain, the object being to reach irregularities on the surface which otherwise would escape contact with the lotion. When the bladder is much pouched it is a good plan after filling it and before removing the fluid to cause the patient to agitate his body from side to side so as to bring any dependencies there may be within reach of the antiseptic. In various ways such as I have indicated the process of washing out the bladder may be rendered more searching.

For washing out in ordinary cases of bacterial urine I usually prefer boric acid or the boroglyceride. Condy's fluid or iodoform may also be similarly employed. As I have already said, a solution of nitrate of silver, in the proportion of one-twelfth of a grain to the ounce, is often efficacious in rendering turbid urine clear after other things have failed.

The sterilization of the urine by internal medicines is an important adjunct in the treatment of the class of cases I am now referring to. It is quite unnecessary to draw your attention to the many obvious ways in which the urine may thus be influenced. The specific gravity, the reaction, and the composition of this secretion may to a large extent be artificially influenced, and in these directions the course of suppurative diseases of the urine passages may be most importantly and favorably acted upon.

And this brings me to speak of some of the means at our disposal for rendering the urine sterile, so far as the most important factors in suppurative diseases are concerned. I have already referred to the sterilizing influence that certain oils and essences, such as sandalwood and copaiba, are capable of exercising in this way. No less marked is the effect that boric acid taken internally is capable of effecting in controlling bacterial life in the urine. Probably no better proof of this exists than in the results observed in connection with operations on the urethra, such as the passing of catheters and in internal urethrotomy. The late Dr. Palmer, of Louisville, showed many years ago that by the use of boric acid beforehand the development of urethral rigors and fever under these circumstances was rendered highly improbable, and this has since been most amply proved to be the case. Similarly the use of quinine as a prophylactic against urine fever has been shown to be most efficacious: salol and other like drugs are also well recognized as urine sterilizers.

Though boric acid, in doses of ten or fifteen grains three or four times in the day, is probably one of the most reliable sterilizers, it so often disagrees and causes dyspepsia as to interfere greatly with its use for this purpose. Some years ago my attention was called to a preparation called boro-citrate of magnesium, which was described by Dr. Kockler, of Kosten[1] in Germany, as a solvent for uric-acid calculi and gravel. In the communication referred to it is stated that it is prepared by dissolving boracite in citric acid, boracite being a natural borate of magnesium which is found in Strassfurt. Whether it is actually a solvent for uric acid I am not prepared to say. While testing it for this purpose I found that it frequently had a remarkable effect in sterilizing and clearing up purulent urine and in favoring the expulsion of calculi and gravel, by its flushing effects on the urine passages. For the latter purpose I have used it for the last ten years with considerable effect in conjunction with other means for preventing urine decomposition. This is a specimen as prepared by Messrs. Bell & Co., which I am in the habit of prescribing in teaspoonful doses in half a tumbler or so of either warm or cold water two or three times in the day. It is extremely palatable to take and readily dissolves.

There are other means for sterilizing the urine by

[1] Berlin. klin. Wochen., November 3, 1870.

the mouth which I will mention, as one method or one drug is not universally applicable. There is a combination of the salicylate of sodium with the benzoate of sodium which often possesses this power in a marked degree. "I have frequently found urine which has been rendered opaque by the presence of pus and was swarming with bacteria to be rendered clear in the course of a few days by this preparation. I usually prescribe fifteen grains of both of these salts to be taken together three times a day in an ounce of chloroform water. The hyposulphite of sodium in half-drachm doses has also in some instances effected the same object.

The principle of urine sterilization may, however, be extended to other purulent or bacterial conditions of the urinary apparatus. I refer more particularly to some of those chronic suppurations resulting from the formation of abscesses in connection with the prostate and prostatic urethra, in which the pus was originally discharged, sometimes against gravity, into the latter canal. These are often most difficult to heal by reason of the absence of a free and dependent opening. Yet, on the other hand, the opening of the perineum and the incising of the prostate to secure free drainage of the discharge is a proceeding that cannot always be undertaken without some degree of risk in elderly subjects. The thorough cleansing of these deep parts by the use of antiseptics in the form of auto-irrigation, as described in the earlier part of this paper, will be found efficacious in many of these cases of chronic suppuration. In some instances of prostatic suppuration it is almost impossible to flush a sinus connected with this part so long as a catheter of any kind is retained in the bladder; on the other hand this object may be often readily effected by the spontaneous contraction of a more or less distended bladder. In the sinuses arising out of tuberculous prostatitis this method often proves very effectual.

Again I have resorted to this method of flushing urinary fistulæ with some antiseptic fluid when the primary cause of them has been removed, as by gradual dilatation or after internal urethrotomy. Tortuous routes through the perineum may, by flushing through the medium of the bladder two or three times if necessary in the twenty-four hours, be thus healed.

A few months ago I saw a middle-aged man with a tight stricture in the deep urethra which admitted only a No. 4 bougie. In addition there were two chronic perineal fistulæ, one opening in the left buttock and the other by the side of the scrotum, through which almost the whole of the urine was passed at the time of micturition. The patient's condition was an extremely distressing one, as it was impossible for him to pass his urine with any degree of comfort except upon a watercloset. I divided the stricture from within by Maissoneuve's urethrotome. A catheter was then tied in the bladder for forty-eight hours, and on its removal a No. 12 silk catheter *à boule* was introduced morning and evening. After being washed out by means of this in the ordinary way, the bladder was filled with over half a pint of warm boric lotion, which the patient was required to void naturally in the standing position on the catheter being withdrawn. The fluid escaped as in the ordinary act of micturition with this patient, namely, partly by the urethra, and partly through the false routes. The proportion of the fluid coming through the urethra gradually increased, while that passing through the two fistulæ grew less daily, and in the course of ten days entirely ceased. This method of procedure I have found from repeated trials to contribute importantly in promoting the sound healing of these fistulæ, and the comfort and cleanliness of the patient.

THE TREATMENT OF FOLLICULAR ABSCESS OF THE FOSSA NAVICULARIS WITH ATTENDANT FISTULA.[1]

By CHARLES H. CHETWOOD, M.D.,

LECTURER IN OPERATIVE SURGERY AND IN GENITO-URINARY DISEASES AND SYPHILIS AT THE NEW YORK POLYCLINIC MEDICAL SCHOOL.

The condition described in the title of this paper is not an infrequent one, and, unless my own experience is peculiar, is generally obstinate to treatment, especially when the accompanying fistula is complete with both internal and external openings.

I have for the past year or so depended upon a method of procedure in the treatment of these cases which has of late developed into a routine so successful in its results as to warrant a detailed description for the benefit of those whose experience has not taught them a better method.

In order to cover all the cases I have treated which came under the above heading, I divide them into three classes, of which I report a successful case representing each class:

I. Follicular abscess with blind internal opening.
II. Follicular abscess with blind external opening.
III. Follicular abscess with complete fistula.

The etiology of all of these varieties is the same, there being an extension of inflammation during an

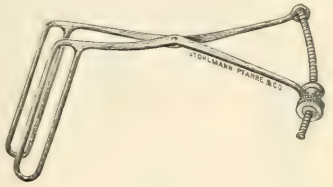

Fig. 1.

attack of acute or chronic urethritis resulting in periurethral abscess, which leaves a permanent fistulous tract of one of the above-named varieties connecting with a distended follicular sac of varying dimensions. The first is probably the most frequently met with, and consists simply of a small pouch behind the meatus, connected with the urethra by a dilated follicle mouth. The second is when the natural follicular opening becomes closed and the abscess finds vent externally. The third is when a complete urethral fistula exists with both external and internal opening, often the result of an unwise external incision. Internally the mouth of more than one follicle may connect with the sac and externally the abscess may open on both sides of the frenum.

The symptoms accompanying these conditions are those resulting from a contracted meatus. There is more or less induration at the site of the fossa navicularis and a certain amount of purulent urethral discharge from the meatus when there is an internal opening, or alongside of the frenum when an external opening exists, notably when pressure is made over the swelling.

As regards diagnosis, the existence of periurethral abscess is self-evident. The nature of the fistula is determined by the injection of a small quantity of peroxide of hydrogen into the vent of the abscess, which will find its way to the end of the tract, and demonstrate whether it be a blind or complete fistula. For examination I employ a simple wire urethral speculum, as shown in the accompanying illustration (Fig. 1). The position of the speculum introduced, demonstrated in the next illustration, is particularly useful, the object being to make the floor of the urethra pass over the end of the speculum beneath the index

[1] Read before the New York County Medical Association.

finger, which gives a much better field of vision than when held in the ordinary manner, and is utilized in the later part of the treatment hereinafter described (Fig. 2). I have found sunlight entirely efficient, although reflected and artificial light may be employed if preferred.

In regard to what is generally held to be the prognosis in these cases, I quote from Morrow's "System of Genito-Urinary Diseases," which states "they are frequently obstinate. Some of the smallest resist all those means of treatment so long as only the trivial operations of stimulation and catheterization are resorted to"—implying that more definite surgical interference is recommended.

Such rational treatment of these cases generally referred to in the books is incision of the swelling (externally or internally), keeping the cavity packed until healed, and, when a complete fistula exists, denudation of the whole tract by dissection or scraping, followed by careful suturing. I have found, however, and others have found the same, that such treatment is not always practicable, and certainly not invariably

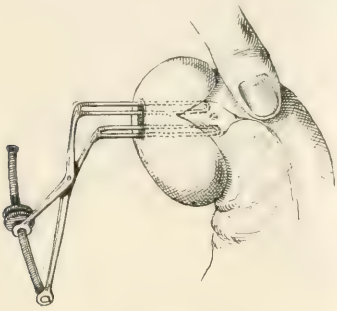

Fig. 2.

the means of effecting a cure. If the incision is made internally, it is difficult subsequently to keep the cavity properly packed in the interior, and thus a failure may result; and if an external incision is made the danger of making a complete fistula is presented. Fissures which are demonstrated to have an internal opening only are the most favorable for this mode of treatment; but even then the follicular mouth within the urethra may be only temporarily occluded, and if it reopens during the treatment after external incision the danger of complete permanent urethral fistula is again threatened. I do not doubt that many successful cases under various other means of treatment might be reported, but the obstinacy of the generality of cases remains; hence I do not hesitate to recommend the course of treatment I have adopted in all cases of the varieties already named, and at my hands it has never yet failed of a cure.

The method of applying this treatment is as follows: The patient is placed in the recumbent position, in a good light, and a wire speculum is introduced into the urethra, as the treatment is always applied from the interior whether or not there be an external opening. Prior to the introduction of the speculum, a small quantity of four-per-cent. solution of cocaine (or eucaine) may be injected into the urethra and retained three minutes, after which a few drops of the same solution are injected through a hypodermic needle into the several parts underlying the fossa navicularis and thus absolute local anæsthesia is obtained. Such complete anæsthesia is only resorted to at the first sitting, when an incision is generally required and more thorough inspection of the interior is desired. Proper inspection is facilitated by conforming to the position above illustrated (Fig. 2). A fistulous orifice is readily recognized when brought beneath the end of the speculum.

The subsequent treatment is practically the same whether the fistula be complete or incomplete and whether the opening be internal or external. An incision is first made interiorly over the site of the

Fig. 3.

periurethral swelling, unless there is an accumulation within the sac and there already exists a large enough opening to admit the introduction of the nozzle of a pipette. The urethra is now packed with absorbent cotton from the lower end of the speculum up to the point of the incision, and now with a specially constructed pipette (Figs. 3 and 4) a few drops of the twenty-five-per-cent. solution of peroxide of hydrogen are injected into the interior of the sac, which requires the adoption of the second position. Effervesence now takes place freely, and the overflow is caught in the absorbent cotton, after which the speculum is closed and withdrawn with the cotton in its grasp. This completes the first treatment and the patient is told to return in two or three days, being apprised of a probable free purulent discharge as a result of this first application, for which a mild injection may be given.

The next application is more trivial and may be performed with or without cocaine, according to the sensitiveness of the urethra. A small quantity of the same solution is introduced in the manner already described and subsequently continued applications are repeated at about the same intervals.

The effect of these applications is to cause rapid contraction of the sac and destruction of its pyogenic properties. When the stage is reached where the discharge has practically ceased and a small blind internal fistula is all that remains, position No. 1 is resorted to, and the solution is applied to the fistulous opening by means of a fine glass rod, which procedure should in a short time effect a complete cure. I find it advisable toward the end of the treatment to substitute the five-per-cent. for the twenty-five-per-cent. solution when a less destructive action is necessary than in the early stage and there is adventitious tissue to be removed by the caustic action of the stronger solution.

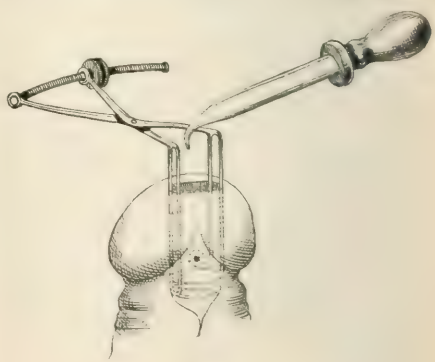

Fig. 4.

The length of time necessary to keep up this treatment varies from two to six or eight weeks, according to the severity of the case. The intervals between the treatments are from two to four days, according to the irritation produced. The most obstinate cases are those in which complete fistula exists and those in which there

is underlying tuberculous diathesis. All cases should result in a cure when the treatment is properly performed.

The preparation employed in the treatment is manufactured under the proprietary name of pyrozone, and the so-called caustic and antiseptic preparations of this substance are nothing more nor less than twenty-five-per-cent. and five-per-cent. ethereal solutions of peroxide of hydrogen, and are referred to as such in this article. This compound was formerly known and manufactured under the name of ozonic ether some twenty-five years ago. It is unnecessary to mention here the facility with which peroxide of hydrogen covers the whole surface of pus-forming cavities, exerting an active penetrating antiseptic influence. The peroxide of hydrogen preparations generally sold are aqueous solutions of this substance. The ethereal are more active and the above percentages of peroxide of hydrogen are greater than those contained in any of the aqueous preparations manufactured. The ether also is a desirable ingredient, being a solvent of fatty matter, which may readily obstruct the proper action of any antiseptic application on diseased surfaces.

The pipette I make myself out of an ordinary medicine dropper with a long nozzle, which is shaped in the flame of a Bunson burner so as to turn at a right angle and then drawn to an extremely fine point; otherwise the solution, being ethereal, cannot be retained.

The following classified cases demonstrate the effectiveness of this mode of treatment:

Case I. represents Class I., viz., follicular abscess with blind internal fistula. June 9, 1894, Mr. C. L—— had had four attacks of acute urethritis. The latter one, of over two weeks' duration, was complicated by a phlegmon commencing behind the frenum, which had been opened by the physician who was then treating him. When he was first seen by me, there was an internal fistula connecting with a small abscess, which was discharging itself into the urethra, and at this time and for several days later the danger of a complete fistula forming was threatened by spontaneous external opening. A probe introduced from within could be felt just beneath the mucous lining of the prepuce, on both sides of the frenum, which was so thin that the probe could almost be seen. After one week of the above treatment the danger of external opening no longer presented, and at the end of two weeks the abscess had stopped discharging and the fistula closed soon afterward.

Case II., an example of Class II., follicular abscess with blind external fistula. Mr. J. P—— had an acute urethritis of two or three weeks' duration, some time during which a follicular abscess had formed at the fossa navicularis, unnoticed by the patient, but had opened spontaneously externally. July 18, 1894, an internal incision was made and the usual treatment carried out, with the result of complete recovery in three weeks.

Case III., Mr. H. F. G——, was one in which a complete fistula was formed. The patient had large swollen glands on both sides of the neck, was anæmic and had an extremely irritable bladder, very obstinate to treatment, suggesting the possibility of a tuberculous element. There was an indurated sac behind the meatus, an external opening on the right side of the frenum, and an internal one on the floor of the meatus, so that peroxide of hydrogen injected through the external opening would effervesce through the meatus. On account of the patient's general condition and the urgency of his bladder symptoms, the trouble near the meatus was not immediately treated, except to wash it out occasionally with different antiseptic solutions, which produced no curative effect. After the patient had been under treatment for four or five months, his bladder trouble had almost entirely subsided and his general health was much improved, but the fistulous openings near the meatus persisted, and after remaining away two or three months longer he returned to be treated for this condition. January 21, 1896, I enlarged the internal opening and followed up the regular course of treatment as if no external opening existed. The patient was under treatment for about seven or eight weeks, when the indurated area had contracted down to almost nothing and both fistulous openings had entirely closed, it being impossible to press out any discharge internally or externally.

In conclusion, I would state I have seen all of the above cases at periods of from three months to a year after the cessation of treatment, and in none was there any sign to indicate that the recovery was not permanent.

COW'S MILK IN INFANT FEEDING.

BY WALTER G. MURPHY, M.D.

EAST HARTFORD, CONN.

The first year of childhood, often for purposes of study arbitrarily named the first nutrient period, presents to the student of medicine many complex, interesting, and important problems. To us as physicians is intrusted the important office of guiding the growth of the child as it passes through its developmental stages, that in its growth it may retain or acquire the priceless boon given mankind, namely, good health. As a factor in the growth and general well-being of the child, food occupies a most important position, and it seems appropriate at this time to present for your consideration the subject of cow's milk in infant feeding. The writer cannot hope to present an exhaustive treatise on such an extensive and varied topic, but rather to touch upon a few of the many difficulties with which we have to contend.

All authors agree that cow's milk, which is now universally accepted as the best substitute for maternal milk, must be modified to resemble more closely nature's product. A comparison of the analyses of cow's milk and woman's milk will demonstrate the difficulties to be overcome in arranging a diet of cow's milk for a young child. Leed's analyses give 4.01 fat and 2.06 albuminoids in woman's milk, and 3.75 fat and 3.42 albuminoids in cow's milk. Other observers give even a higher percentage of albuminoids in cow's milk.

The difficulty, outside of the laboratory, is to dilute the proteids and still retain the fats at a proper standard compared with woman's milk. The acid reaction of cow's milk also presents difficulties. Woman's milk is almost uniformly alkaline. If not, it should not be used (Rotch). Cow's milk, as usually received twenty-four hours after milking, is quite acid, and I believe just as much is due to this fact as to the proportion of proteids present. Milk, as drawn from the breast by the child, is sterile. The nicety of mechanism of the breast in performing its function allows no possibility of fermentation before the milk enters the infant's mouth, and as the gland collapses as it is gradually emptied a vacuum is avoided. If, however, milk is exposed to the air, bacteria multiply very rapidly by the hundreds and thousands, and in time, shorter in summer than in winter, increase to such proportions that fermentation occurs, lactic and butyric acids are formed, and the milk sours. Milk twenty-four hours old is an entirely different substance than when perfectly fresh. Originally not harmful, as at-

[1] Read at the semi-annual meeting of the Hartford County Medical Association, Hartford, Conn., April 21, 1897.

tested in some countries where children are nursed directly from the cow, milk becomes by natural changes, if allowed to occur, a rank poison.

It has been found by experiment that if milk, immediately after being drawn from the cow, is cooled to 40° F., all bacteria growth is at once arrested and remains so if the milk be kept at a low temperature. With our present manner of handling milk in the dairy, unless absolute cleanliness is observed about the barn, cow, and hands and clothing of the milker, it is impossible to get a thoroughly sterile milk. Some microbes develop very rapidly, doubling in twenty minutes, while others require a longer time. But that cooling rapidly is effective is fully proven by an experiment at the Yale Agricultural Experiment Station. Two cultures were made on gelatin plates—one of milk cooled to 40° F., and the other perfectly natural milk, with all its gases and animal heat retained. The first plate, after sufficient exposure, gave only twelve colonies, while the second contained thousands.

In experiments to determine the size of the curd of cow's milk as compared with the curd of woman's milk, it is noticed that the precipitate obtained by the addition of acid to cow's milk is tough and hard, while the curd of woman's milk is soft and flocculent and of smaller size than cow's milk. I believe this great difference is due principally to the fact that there is an acid fermentation in cow's milk, due to the presence of bacteria which we do not find in woman's milk. The curd is by comparison larger in cow's milk than in woman's milk, but it does not seem possible that in its normal state, as received by the young animal, it would precipitate in the tough, hard mass seen when acid is added in a test tube.

To determine this fact, I undertook a series of experiments, and in every case it was noticed that the curd was smallest when the milk had not undergone an acid fermentation. Hydrochloric acid was added to the milk, first in a weak solution gradually, and then to a similar specimen of milk pure acid was added quickly:

No. 1.—Milk, 4 drams; water, 8 drams—representing the quantity for a child two or three weeks old. Slightly acid. Heated to 100° F. On adding acid the curd was precipitated in fine flakes.

No. 2.—Whole milk, acid. Treated in the same manner, precipitated in tough, hard masses, as when milk has soured in summer.

No. 3.—Same quantity of milk and water. Treated with a weak solution of hydrochloric acid, 0.02 per cent., as represented in normal gastric juice (Schmidt). Acid added slowly and curd fine, as in No. 1.

No. 4.—Whole milk with weak solution of acid added slowly; precipitated in small particles suspended in the milk. On separating the fluid from the curd and comparing the precipitates, it was noticed that while No. 4 gave more in quantity, the curd was composed of soft, easily broken bodies, about the size of those obtained in No. 1.

No. 5.—Pasteurized milk, diluted one-quarter and heated to 100° F. Slightly acid. Diluted and tested with strong acid; curd finer than in experiments 1, 2, 3, and 4.

No. 6.—Whole milk, with strong acid, required twice the quantity of acid used in No. 2, and the curd was finer than in experiments 1 and 2.

No. 7.—Milk diluted one-quarter. With dilute acid added slowly, the curd finest of all specimens so far examined.

No. 8.—Whole milk tested with dilute acid. Curd finer than in experiments 1 and 2. Pasteurized milk, tested with strong acid, does not give the tough curd noticed in whole raw milk. The curd resembles more that obtained in diluting ordinary milk. Aerated milk, tested eight hours after being received from delivery wagon, is very slightly acid.

No. 9.—Milk diluted one-quarter. Temperature, 100° F. Tested only with full-strength acid. Required more acid to cause precipitate than any diluted specimen examined. Curd very fine, resembling human-milk curd.

No. 10.—Whole milk, with strong acid, precipitated a curd as fine as any diluted specimen except No. 9. Required four times the quantity of acid to precipitate as did ordinary morning's milk received at the home about the same time.

Lehman has noticed that when woman's milk is tested after standing some time the curd is heavier and more solid than when precipitated immediately after being drawn from the breast. Cow's milk twenty-four hours old will react to less acid and more quickly than new milk. Milk curdles more quickly and the curd is heavier when acid is added quickly than when the same quantity of acid is added gradually.

Applying these facts to the action of the gastric juice in a child's stomach, I think we are justified in believing a similar precipitate would occur. A milk which has undergone a partial acid fermentation, and is of a decidedly acid reaction, coming in contact with the acid of the stomach, we should expect a tough precipitate, as noticed in the test tube; whereas a perfectly fresh milk, not containing an excess of acid, or a diluted milk when the acid is also diluted, would precipitate a finer and softer curd than would experiment 2.

While we cannot compare absolutely a chemical action in a test tube with the action of the normal secretions in the stomach, I believe it is evident that an excess of acid—that is, the acid of the milk plus the acid secretions—would produce a different chemical action than if the gradually secreted gastric juice alone caused the precipitate (Dalton).

From these experiments, then, it would seem that when measures have been employed to lessen the fermentation of milk the curd is entirely different from that of ordinary milk as obtained from the cart, and, further, it will be noticed that when the milk has been aerated immediately after milking, the curd is finer than that of Pasteurized milk, with which the effort is made to check fermentation after it has already begun.

Babies, as a rule, are able to digest a stronger milk in winter, when there are fewer germs, than in summer, and a case seen during the past season illustrates that fact. A baby, six months old, was taking cow's milk diluted one-half. It was the custom of the mother to Pasteurize a fresh supply in the evening for the baby's use during the night. The baby did not nurse more than twice. The milk was heated in separate bottles, submerged in hot water and then cooled, and the bottles were wrapped in a light woollen blanket and kept at the foot of the bed—a most convenient, if not entirely scientific, method of preserving milk. This did very well during the cold months, but as the weather became warmer the practice had to be discontinued and the milk kept on ice and heated as required. Almost the first warm night, the baby, after drinking his milk as usual, was taken sick and vomited thick, hard masses of sour curd. Exactly the same milk was used, and on investigation I could find no reason, either in the cow or its food, and so was satisfied to ascribe the trouble to a fermentation which had occurred on account of the heat in the room. The dilution of milk with lime water or attenuants, which has for years been generally practised with good results, undoubtedly acts by neutralizing the acid of fermentation, so that an excess of acids is prevented.

I have alluded to the contamination of the milk in the barn, and have demonstrated that milk may be made practically sterile. There yet remains the trans-

porting of the milk to the consumer and, a phase of the subject not often alluded to, the preservation of the milk in its purity in the home where it is to be used. Many dairymen now employ glass bottles, with a metallic or ligneous cap, and if the bottles are properly washed before the milk is put into them the plan is an excellent one and should be made compulsory. Milk properly strained, cooled, and bottled, kept at a low temperature in the house, and exposed no more than absolutely necessary, will keep sweet twenty-four hours.

Instead of this, consider for a moment our present methods. The milk is put into large cans, carted about the city here, there, and everywhere, in the dust and dirt of the business quarters, and the hot, close, unhealthy atmosphere of the tenement districts, uncovered and exposed at each stopping-place. The milk is poured into a can or pitcher, possibly not over clean, and then perhaps left on the doorstep until the cook has time to get it, or kept in the pantry or on the windowsill in the sun.

Given a milk declared by competent authority to be germ free as it leaves the barn, how long think you will it remain so? If we could have at hand a pure milk, cooled, bottled, and kept cool, I believe our results in infant feeding would be better than they now are. The fact that there is a chemical and physical difference between human and cow's milk is not the only difficulty. A child may to a certain extent adapt itself to a slight chemical difference, and we have repeatedly seen a child do well on its mother's milk when that milk analyzed would fall far below the average of human milk. Adriance[1] gives analyses of several specimens of milk which, compared with the normal standard, would be considered abnormal, and yet babies fed with it were gaining in weight and appeared healthy.

The personal idiosyncrasy of the child is an important factor, and when a child thrives on a milk of unusual percentages of fats and proteids it does so because the milk is good for that particular infant. I would not discourage the chemical examination of milk in arranging a diet for a child, but I would emphasize the importance of having a good milk. Of what use is the fact that we have the proper percentage of the several constituents of breast milk, if that milk is also loaded with germs of fermentation? We cannot always be sure of our exact chemical relations; we can be and should be absolutely certain that the milk is good and pure.

The particular aerated milk employed in the experiment was delivered in bottles early in the morning, and its production was a matter of thought and care in every detail. Even with milk produced and preserved under the most favorable conditions, dilution could not be entirely avoided; the natural size of the particles would prevent that; but the milk could be given stronger, and so much of the trouble from too little fat would be overcome. Budin, by means of sterilization with Soxhlet's apparatus, is enabled to give whole milk to even very young children, by giving only such quantity as the stomach will easily tolerate. This, although sterilized milk is now no longer used as a continued diet, emphasizes the fact that many of the difficulties in infant feeding are due to conditions favoring an acid fermentation of the milk employed.

That milk should ferment on exposure is entirely consistent with our present knowledge of the germ theory of suppuration and fermentation in wounds. Exactly the same principles apply to milk as to any tissue of the body. To-day a surgeon who should undertake an operation of almost any grade and neglects the principles of asepsis or antisepsis, would be considered behind the age, if not criminally liable. The influence of bacteria on healthy tissue is now understood and appreciated, and it is only necessary to witness the technique of a modern scientific operation to realize that no detail is too trivial which will the more effectually prevent infection of the wound. Surely we cannot plead ignorance, in neglecting this important question, of the proper care and management of milk, especially that intended for infants and invalids.

As one carefully considers this subject of cow's milk in infant feeding, and realizes the close intimacy of the mortuary statistics with the milk question, the desire for good milk becomes intensified, particularly when we contemplate the misery and sickness directly traceable to poisoned milk and are confronted with the fact that artificial feeding is on the increase. That a large part of the mortality in cities is traceable to cow's milk is proven by statistics. Dr. Coit, in a paper on the "Causation of Disease by Milk," says:

"It is claimed that twenty per cent. of all who are born to man in large centres of population die during the so-called nursing period; that nearly thirty per cent. of all deaths in many large cities from all causes and in all periods of life are infants of the first year, due to a lack of physical resistance in city children, resulting from a want of suitable food; that it has been claimed that sixty per cent. of children, hand fed during infancy, perish before they are five years of age; that the mortality from nutritional disorders, directly or indirectly, during the first year, comprises nearly ninety per cent. of the whole; that so-called cholera infantum and the summer diarrhœas among children are now regarded by authorities to be largely due to milk infection."

It is an encouraging sign of progress, however, that the efforts of such men as Coit, Rotch, Snow, Vaughan, Leeds, and others are bearing fruit, as evidenced by the number of certified milk farms now in active and successful operation in various cities of this country, under the direct supervision of a commission of physicians, chemist, bacteriologist, and veterinary surgeon. And that their efforts are entirely successful is proven by a case reported in a recent article received from Dr. Coit in answer to a question asked by the writer:

"A Newark physician desired to have a baby supplied with fresh milk during an ocean voyage. Accordingly, on May 11th, he ordered twelve bottles delivered on board a steamer. With these he sent twelve other bottles, asking the steward to keep them on ice till the steamer should return to New York. This was done, and on May 31st they were handed over to a member of the commission. One bottle was opened and the milk found to be sweet. Other bottles were sent to the chemist and bacteriologist, and found to be in a remarkable state of preservation. Three days later, when the milk was twenty-four days old, it was tasted by a number of physicians and found to be perfectly sweet."

Such results cannot be passed over lightly. They emphasize the importance of the cleanliness in detail, exercised at a certified milk farm, in the production of milk for infant feeding. I would that such farms were more general.

[1] Archives of Pædiatrics.

Epsom Salts.—The stomach will not reject it if prepared in this way: Put a tablespoonful in a teacup and add two or three tablespoonfuls of boiling water, stir well, decant, and reject the residuum. Add a little lemon juice, let the mixture cool, and give to the patient. If in the country, beyond the reach of lemons, vinegar will make a fourth-rate substitute. Repeat the dose every four hours until the bowels respond. The quantity of water may be varied to suit the caprice of the patient.—PARCELLS.

Clinical Department.

TRIPLETS.

By ABRAHAM GOLTMAN, M.D., C.M., L.R.C.P.S. Ed.,

NEW YORK.

Mrs. Mary M——, aged twenty-two, pregnant for the third time, came to me on March 1st, stating that she was in her last month and "carrying the child high." Her history showed that her previous labors were precipitate.

On examination the abdomen was a great deal larger than could be accounted for at the ninth month, reaching up to near the xiphoid cartilage. There was a considerable amount of suprapubic œdema. The abdomen was very prominent and more developed in its transverse diameter. There was present slight œdema of the lower limbs. Fœtal movements could be made out at different parts of the abdomen.

On palpation the abdomen was hard and resisting, and I could make out the breech of one fœtus at the fundus on the right side, and the head of another on the left side. On further palpation I made out on the lower and right portion of the uterus the head corresponding to the breech.

On auscultation fœtal heart sounds could be made out on the right side of the uterus on a line with the navel, synchronous with the mother's pulse. After some difficulty I made out fœtal heart sounds on the left side on a line running from the middle of Poupart's ligament to the navel. The heart sounds, at these two places, were not synchronous with each other, but were so with the mother's pulse.

From the above results I suspected twins. On March 15th I was hurriedly called to see her, at 10:30 A.M. She stated that her bag of waters had come away that morning at 4:30, and that she was now in pain. I made a vaginal examination and found the os fully dilated and diagnosed a first position. Pains were irregular and weak. After stimulating the uterus to contract with hot-water douches, the head was delivered in the first position, and very rapidly the whole child was expelled at one or two sharp pains. The child was very cyanotic and phlethoric, and the pulsations of the cord were feeble. After trying artificial respiration, with the aid of cold and hot water douches, I succeeded in resuscitating the child. On returning to deliver the placenta, I found the uterus as large as before labor set in. I examined per vaginam and felt a foot presenting at the os through the membranes. The patient was now exhausted; pains had entirely ceased. I gave her a drachm dose of fluid extract of ergot with hot vaginal douches and waited half an hour; pains did not set in. I repeated the dose and she then had a return of pains. The membranes were ruptured, and with the flow the breech of a second infant was delivered rapidly, the head remaining grasped by the vaginal opening. After strong flexion of the head was practised, it was delivered without any difficulty. After the cord was tied the woman complained of severe pains and something "between her legs," which I found was a bag of membranes protruding at the vulva and containing a fœtus head first, which also was delivered rapidly, the placenta following at the same time. Injections of strychnine were now given, the uterus became well contracted, and a drachm of ergot was repeated.

The last fœtus was a male, and appeared to be prematurely born. The first cried but little and was very cyanotic. The other two were of natural color. Each fœtus had hardly any caput succedaneum, and none was fully matured. The placenta weighed twenty-five ounces and contained three amniotic sacks, each having separate cords. The cord corresponding to the first fœtus was shorter than the other cords, more congested, tortuous and thicker. Where it entered the placental tissue, that portion was congested, dripped blood, and tore easily, and could be readily distinguished from the remaining placental tissue.

The following day the first child had several hemorrhages (epistaxis), and died twenty-four hours after. So far the two others are doing well and nursing. The mother is progressing favorably. The children were all males.

1612 Lexington Avenue.

HICCOUGHS AND THEIR TREATMENT.

By LUKE FLEMING, M.D.,

TARRYTOWN, N. Y.

In view of the serious cases of hiccoughs reported from time to time, I am led to give the history of the following case and also the treatment employed, in the hope that it may be of benefit to others.

A. M——, female, fourteen years of age, fairly healthy and of good family history, was attacked on the night of May 3d with hiccoughs, the attack consisting of three or four paroxysms of half an hour's duration each, which ceased on the following morning. Toward the afternoon of the same day the paroxysms reappeared, increasing in severity until in the evening the exhaustion of the patient frightened the parents and I was called. At this time she had been hiccoughing continuously for two hours and had just recovered from an attack of syncope. During the faint the hiccoughs ceased, but returned upon her regaining consciousness. Her temperature was normal; pulse rapid, feeble, and irregular; and her general appearance that of extreme prostration.

While watching her I remembered her as a patient whom at one time I had treated for malaria, and in whom quinine had caused a most unbearable urticaria. It occurred to me now that if I should again prescribe quinine and induce this urticaria I might so disturb her nervous system as to cure the hiccoughs. Acting upon this thought, I gave ten grains of the drug. During the ensuing two hours her hiccoughs grew worse and her condition became so alarming that the parents feared death. At the end of that time, however, a scarlet rash spread over her body, her fingers and face puffed, and an intense itching came on. At the onset of this rash the hiccoughs promptly ceased, and although but one dose of quinine had been given and the rash lasted only three hours, the hiccoughs did not return.

In thinking of this case it strikes me that the treatment of hiccoughs by nerve sedatives is unwise, and that a more rational treatment would be by nerve irritants. If I may use a figure of speech, we might compare the nervous system of a patient suffering from hiccoughs to an indolent garrison in an enemy's country allowing a crazy gunner to exhaust all its ammunition by firing salutes to the sun. By throwing a shell into its midst we awaken it from its lethargy and stop this foolish pastime. So, in a case of hiccoughs, the nervous system is not attending properly to its duties and is exhausting its vitality in a harmful direction. By employing some means that will give it a thorough shaking up, we awaken it to its danger and restore its normal action.

In the above case this result was obtained by the idiosyncrasy of the patient to quinine. In other cases we might seek some like condition and utilize it.

Hospitals for Hagerstown. — The authorities of Salisbury and Hagerstown, Md., contemplate the building of hospitals in these towns.

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DISINTERESTED TESTIMONY ON THE DISPENSARY QUESTION.

THE *Evening Post* of June 19th contained an interesting account of a visit to the Vanderbilt Clinic. The reporter seems to have been a fair-minded person, with no particular theory to prove but with only a desire for facts. He introduced himself to the superintendent of the dispensary, told him that he "simply desired to observe the patients as they entered and left, and that this was to be for the purpose of a description which might form the basis of some judgment as to whether the assertion concerning the character of many persons treated at the clinic were true." The superintendent gave him a note to the clerk of the clinic allowing him to look on, but restricting him to simple observation and not allowing him to be "obtrusive," which, however, he did not think the reporter desired to be. The latter spent two hours in the clinic, and his observations may be presumed to be a fair statement of what happens in this particular institution from day to day.

He estimates the number of applicants during his visit to have been about four hundred.

"Nobody was seen to arrive in a carriage, nor was any finely dressed man or sumptuously attired and adorned woman discerned in the crowd. But, on the other hand, those whose dress and appearance denoted an extreme degree of poverty were certainly in a very large minority. It is difficult to resist the conclusion that not more than one in twenty-five—the pen is tempted to write one in fifty—of the applicants treated at the Vanderbilt Clinicon the afterno on of observation was a legitimate patient. Not more than one in fifty was at all shabbily dressed. A large majority were fairly well dressed. A third of them, it will be safe to say, were quite presentably dressed. A few—perhaps as many as a fifth—were dressed positively well. Much the greater number of the patients were women. Brightly flowered and feathered hats abounded. A silk waist or a silk skirt was no uncommon sight. Many of the women carried pocketbooks in their hands, quite as women do when they go shopping. A good many of them also carried satchels, not a few of which were decent enough looking. Umbrellas—most of them apparently good, sound specimens, and some of them of silk—were seen repeatedly. Jewelry was by no means absent. Breastpins, earrings, chains, bracelets—seemingly of gold—were easily to be seen. One woman, particularly observed, was handsomely and stylishly dressed in black. At her throat was a breastpin that looked like a gold one; around her neck was a black chain ornamented with gold or the semblance of it; about her wrist was a heavy coiled bracelet, apparently of the same precious metal. Her hands were encased in black kid gloves, her hair was carefully and modishly arranged, her bonnet harmonized with her dress, and her whole appearance was that of a person in thoroughly comfortable circumstances. She was not rejected. She received advice and a prescription, and waited patiently until her turn came to have the latter filled, when, like the rest, she laid down her ten cents and received her medicine.

"A considerable number of children was present, either as patients or merely accompanying parents. The most of these—or, to be conservative, at least half of them—were, to all appearance, well and tastefully dressed. At any rate, lace and ribbons were frequent adornments of their caps and dresses, and there was not the slightest hint about them of dire poverty. The men, on the whole, seemed less well off than the women, yet some of them were presentably clothed. One very decently attired man asked the superintendent of the building to expedite his turn at the pharmacy, as he was compelled to get back to his work on a street car. The superintendent obliged him. A colored man wearing a neat bicycle suit with golf stockings, and riding an almost new-looking 1896 bicycle ($100 make) (which, at the suggestion of the superintendent, he brought in with him, and put in a room reserved for bicycles), was one of the patients treated. He hung around for a long time after getting his medicine, and, when questioned by the superintendent as to why he lingered, replied that he was 'waiting for a lady who had accompanied him.' Another thing noticed was that the change returned at the window of the pharmacy not seldom included bills as well as coin. In short, it is believed that few impartial spectators could have resisted a feeling of scepticism concerning the absolute inability of most of these people to employ physicians privately, especially as it is the almost invariable rule of practitioners to take into consideration the circumstances of their patients (as the rich ones know)."

The writer of this article, being of a temperate mind, does not claim to have solved the problem of dispensary abuse, and shows his fairness by giving the views of those in charge of two of the dispensary services of the city, the clinic above alluded to and the Demilt Dispensary. The great inquiry which always comes up in discussions on this subject is, why not employ the resources of the Charity Organization Society in an effort to separate the worthy from the unworthy? To this question, in the present case, no conclusive answer was given. It is said that it is "more feasible to get along without the society's aid than with it." Under the word "feasible" come up the questions of delay in reporting upon a given case and the expense to the medical institutions of carrying on such inquiries. In reply to this it may be said

that no advocate of reform in this matter has ever advised waiting for inquiry to be made in cases manifestly needing immediate attention. Such attention should be given at once. The case could be investigated later. In regard to expense, of course it would cost something, but such a sifting process would greatly lessen the number of cases requiring charitable aid. The managers of dispensaries need to be constantly reminded that the true object of dispensaries is to treat those who are sick and unable otherwise to obtain proper care, not to see how many cases can possibly be gathered in.

The most discouraging thing of all is the absolute indifference of managerial boards to this burning question of the hour. They do not seem to think that it is of sufficient importance to call for consideration. They do not care about it. If they did, they would do something. In these days when social questions are receiving such careful consideration at the hands of our best thinkers, the institution manager, with power to do so much in the right direction, does absolutely nothing and seems unwilling that any one else should further the progress of reform along this line.

SUSCEPTIBILITY OF INFANTS TO HOSPITALISM.

In a pamphlet on "The Babies' Ward, New York Post-Graduate Hospital," Dr. H. D. Chapin points out the dangers to which infants are subjected by a lengthened stay in a hospital. In reference to admitting babies to these institutions under any circumstances, he says: "Entrance to a hospital should be limited to acute cases of illness, and discharge should take place immediately upon recovery, even if the latter is only partial. A speedy or satisfactory convalescence is impossible for an infant in a hospital. The earlier the age, the greater is the susceptibility to hospitalism and the quicker it ensues." This warning is well timed and one to be seriously regarded. There is a too great tendency on the part of parents and relatives to place infants when unwell in hospitals. This is often done to evade responsibility and trouble, although of course in many instances the only motive is the good of the child. On account of the great sensitiveness of a child's organism, it is absolutely essential that the young should live in the most healthful conditions. Pure air is of more importance for the maintenance of health in children than in grown-up persons. To quote again from Dr. Chapin: "Outbreaks of contagious diseases are constant dangers in hospitals for infants and children, and can be guarded against only by the greatest care. Diphtheria, measles, and pertussis are, from the nature of these diseases, most liable to creep in. Visitors, however, are often responsible for the bringing of contagion, and all possible safeguards should be thrown around this source of danger, and children should be refused admittance absolutely. The hygienic surroundings must be of the best, the nursing of a very high grade, and a most scrupulous and painstaking oversight exercised. One good nurse should be supplied to not more than four or five sick infants, and in some cases one nurse may be required for only two patients. Finally the infants should be particularly watched for the first sign of hospitalism and promptly discharged before the malady has time to gain any hold on them." The extreme susceptibility of children to contagion when congregated in large numbers has been conclusively proved time after time. An example in point is that of l'Hôpital Trousseau in Paris. This hospital for children contains upward of five hundred beds, and is located in the heart of a dense working-class population, so that its wards are constantly filled. A high municipal official some time ago, referring to the conditions prevailing in l'Hôpital Trousseau, said: "As to the hospital Trousseau, I shall use my strongest endeavors to have it abolished. I see continually how badly the system works. It is a veritable hotbed of infection, and children are there hospitalized in the most, it might almost be said, homicidal manner." These words might be applied with equal truth to many institutions for children much smaller than the hospital Trousseau. For many reasons into which there is no space to enter here, it is always undesirable to have young children living together in large numbers. To keep the rooms which they inhabit in a sanitary state is almost an impossibility. Hospitals for children on a large scale are a great mistake. The larger the hospital the greater the mistake.

MEDICAL EDUCATION IN AMERICA AND GREAT BRITAIN.

But a few years ago, and it would have been absurd to attempt to compare medical education in any part of America with that in England. There were then no points of comparison; the English standard was far higher; in fact, with very few exceptions, the standard of medical education here was so low as to be scarcely worth speaking about. The strides made in late years in many of the States have been phenomenal. So much so has this been the case that it may be said without exaggeration that a revolution in the training of medical men has taken place in these States. New York is well to the front in this matter, and a comparison instituted now between some of the British schools and those of New York would not result altogether in favor of the former. In Great Britain the course of medical education is controlled by an act of Parliament, which is strictly applied to the whole country. In America there is no central law governing the practice of medicine. Each State does what it pleases. Medical schools have been multiplied without reason, the profession is overcrowded, and as a natural result many of those with licenses to practise are incompetent. In Great Britain there is a medical school to about 2,300,000 of the population, while in this country there is one to 440,000. The medical course in the United Kingdom has been lengthened to five years—four years' attendance at a recognized medical school, and attendance at the clinics of a hospital or private practice for the fifth year, so that the English medical training is longer by a

year than that required in New York State, although the custom of serving as interne in some hospital for a year or eighteen months after graduation makes the course here practically longer than in Great Britain. There are eleven universities in Great Britain which have the privilege to grant degrees in medicine, and, in addition to the universities, licenses to practise are granted by the Royal Colleges of Surgeons and Physicians in each county, and by the Society of Apothecaries of London; all these must conform to the Medical Council's standard, which is now a high one. Each degree, however, carries with it a value of its own; this fact, although not appreciated by the general public, is recognized by the profession itself. The degree of doctor of medicine of London University takes the highest rank. Of the qualifications, the fellowship of the Royal College of Surgeons, England, and the membership of the Royal College of Physicians, London, stand first. The joint qualifications of the membership of the Royal College of Surgeons and the licentiate of the Royal College of Physicians take about the same rank as an ordinary university medical degree, that of the University of London excepted. Of the various schools London is the best for practical work, and Edinburgh for theoretical. It has been suggested that the plan pursued in most of the States of the Union, of compelling a man before he is allowed to practise to pass a State examination, should be adopted in England; but for many reasons the project has fallen through. In America more attention is paid to a thorough study of bacteriology than in England. That subject has been greatly neglected there, although now the great practical use of a knowledge of it is recognized by the medical schools throughout the country, and in London there are several well-equipped bacteriological laboratories where it is possible for a student to undergo a regular course of instruction. Post-graduate courses have also been instituted.

To compare the teaching in the medical schools of the United States and the value of the State license with those of Great Britain would be a very difficult task. In the United Kingdom, although a certain standard fixed by the Medical Council has to be reached, there is not the uniformity guaranteed by the State examination, and much diversity of opinion exists as to which degree after that of London University is the best. The course here, only that it is a year shorter, is much the same as in England; the other difference is that in most of the United States the final examination is conducted under the auspices of the State itself, whereas in Great Britain it is in the hands of private corporations. There cannot be much room for doubt as to which is the better plan.

The German Gynæcological Society.—The seventh congress of the German Gynæcological Society was held this year at Leipzig, on June 9th and two following days, under the presidency of Professor Zweifel. Among the subjects discussed were retroflexion of the uterus and placenta prævia.

News of the Week.

The International Medical Congress.—Dr. A. Jacobi writes: "A letter received from the secretary-general of the Twelfth International Medical Congress conveys the following information, which is additional to that which has been published in the medical journals. As it is too late to send tickets to the American congressists, they are requested to send to the secretary-general at Moscow their addresses in London, or Berlin, or Vienna, or Paris, or to avail themselves of the national committees in those cities in order to receive their tickets and free passes over Russian railroads. The free passes are valid from July 13th to September 13th, over the following routes: Eydtkunen to Moscow and back; Moscow to St. Petersburgh, or Moscow to Graviza, or Moscow to Odessa, or *vice versa;* Graviza to Warsaw to Moscow and return by Moscow to St. Petersburgh (or Odessa, or Eydtkunen, or Ungheri, or Alexandrowo), or *vice versa.* Different lines, going and returning, may be chosen, and stop over is permitted. The trip from Eydtkunen to St. Petersburgh is excluded from the free list.

A New Annex to St. Vincent's Hospital.—The sisters of charity have opened at Jarvis Lane, Far Rockaway, their new annex to St. Vincent's Hospital, New York. The old Jarvis Homestead has been transformed into a convenient retreat, more particularly for convalescents. The sanitary arrangements of this country branch are perfect. The rooms are large and cool, and afford a fine view of the ocean. The grounds are spacious and well shaded. Although only three minutes' walk from the railroad station, this new home is situated in a secluded spot. The sisters are aided by a staff of trained nurses in the care of those placed under their charge.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C. Changes in the medical corps of the United States navy for the week ending June 26, 1897. June 24th.—Passed Assistant Surgeon G. B. Wilson detached from the *Yantic*, ordered home, and granted two months' leave.

Medical Society of New Jersey.—At the one hundred and thirty-first annual meeting of the Medical Society of New Jersey, held at Atlantic City, on June 22d and 23d, the following officers were elected for the ensuing year: *President*, D. C. English, of New Brunswick; *First Vice-President*, C. R. P. Fisher, of Bound Brook; *Second Vice-President*, Luther M. Halsey, of Williamstown; *Third Vice-President*, J. H. H. Love, of Montclair; *Corresponding Secretary*, E. L. B. Godfrey, of Camden; *Recording Secretary*, William Pierson, of Orange; *Treasurer*, Archibald Mercer, of Newark.

Colorado's Contribution to the Rush Monument Fund.—Colorado has already fulfilled the pledge for a $2,000 contribution to the Rush monument fund, made by Dr. Graham, at the meeting of the American Medical Association at Philadelphia. At the meeting of the State Medical Society, June 15th, the full sum

pledged by Dr. Graham was immediately raised by individual subscriptions offered most generously and with great enthusiasm.

The American Institute of Homœopathy met in annual convention in Buffalo, on June 24th and following days.

Dr. Charteris, professor of materia medica in Glasgow University, died on June 7th, at Comrie, in Perthshire, where he had gone to recuperate after an attack of influenza.

Dr. Chancellor, of Baltimore, lately United States consul at Havre, has returned to this country.

Dr. T. Mitchell Prudden, of this city, received the degree of LL.D. from Yale University on June 30th.

Hospitals for Contagious Diseases in London.—The hospitals of the metropolitan asylums board, in London, have 3,800 beds set apart for scarlet fever, and only 700 for diphtheria.

Dr. Paul L. Post has been appointed fourth assistant physician to the New Jersey State Hospital.

The Connecticut State Medical Law, which went into effect on the first of this month, provides that no person shall receive a certificate of registration until he has passed a satisfactory examination before one of the three examining committees appointed for that purpose. These committees consist of five members each. The examinations, which must be in writing, will be required in anatomy, physiology, chemistry, materia medica, hygiene, obstetrics, and medical and surgical pathology, diagnosis, and treatment. The penalty for violation of this law is a fine of not less than $100 nor more than $300 for the first offence, and for each subsequent offence not less than $200 nor more than $500, or from thirty to ninety days in the county jail. One-half of the fine collected goes to the person or persons making the complaint and the other half to the State board of health. New York doctors have been diligent in securing the right to practise in Connecticut under the registration law of 1893, according to which no examination was necessary. This explains the enormous increase in medical practitioners with which Greenwich, the nearest town to New York City, would appear to have been afflicted. There were thirty-one registrations in the entire State in April, of which twenty were in Greenwich.

A Humane Execution.—An Italian was put to death at Auburn on June 22d, for the murder of a fellow-countryman eighteen months ago. He was placed in the chair, and five shocks with a current of eighteen hundred and forty volts, each of about one minute duration, were made at intervals. The poor creature was not pronounced dead until eight minutes had elapsed after the first contact was made. The five shocks were necessary because of the imperfect contact of the electrode on the man's leg. The smell of burning flesh was quite distinct in the chamber after the first shock had been given.

The Philadelphia County Medical Society.—At the final stated meeting for the season of the Philadelphia County Medical Society, Dr. A. G. Thomson presented the report of a case of complete blindness due to acute poisoning from overuse of Jamaica ginger, followed by toxic amblyopia of the ordinary chronic form. Dr. A. A. Eshner read a paper on "Hysteria in Early Life," in which he detailed the histories of a small group of cases occurring in girls at and before the age of puberty, and displaying more or less characteristic features of the grand neurosis. Dr. Henry Beates, Jr., made remarks on some of the common causes defeating the proper progress of therapeutics.

The Health Board at Dead Man's Curve. — The grand jury and the district attorney having been unable to stop the needless sacrifice of life at the various curves of the cable roads in this city, the health board has taken the matter in hand. At a meeting held June 29th, the following amendment to the sanitary code was proposed for adoption: "No conductor, driver, or gripman of any railroad car or other vehicles running on tracks in the city of New York shall allow or cause the same to be pulled, drawn, or propelled on or around any curves on any public street or avenue at a greater rate of speed than two miles an hour. And no director, president, superintendent, or other person who is interested in or who owns or controls any such car or vehicle shall permit it to be pulled, drawn, or propelled. This section of the sanitary code is adopted for the purpose of preventing accidents by which life or health may be endangered." According to the rules, this resolution must lie over a week before it can be acted upon.

The Late Dr. William T. Lusk.—The faculty of the Bellevue Hospital Medical College have the painful duty of directing a formal record in their minutes of the untimely and sudden death of their beloved colleague and president, the late Prof. William Thomson Lusk, on June 12, 1897. Dr. Lusk was an alumnus of the college, class of 1864, and class valedictorian. He became one of the instructors in the summer session in 1870. He was appointed professor of obstetrics in 1871, and president of the faculty in 1889. His great ability as a teacher and voluminous writer commanded the respect and admiration of the profession at home and abroad. His public services in the institutions under the charge of the commissioners of public charities were rewarded by the appreciation and gratitude of all interested in medical charities. His devoted work in behalf of medical education connected his name most prominently with the teaching of medicine, and especially with the Bellevue Hospital Medical College. But, above all, his fearless honesty of purpose and his exquisite gentleness of character and manner so endeared him to his associates in the college that we, his loving colleagues and friends, feel in his death a personal bereavement which words fail adequately to express. In common with his family, the profession, and his many devoted friends, we mourn his loss and deplore the premature end of a most useful and valuable life.

AUSTIN FLINT, *Secretary.*

Society Reports.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

FOURTH TRIENNIAL SESSION.

Held in Washington, D. C., May 4, 5, and 6, 1897.

WILLIAM H. WELCH, M.D., OF BALTIMORE, PRESIDENT.

(Concluded from Vol. LI., page 916.)

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Second Day—Wednesday, May 5th.

Priapism.—DR. R. W. TAYLOR, of New York, read a paper with this title. In normal conditions erections last a short time only; in certain morbid conditions this erection is much prolonged and to this prolonged erection the term priapism is applied. It may be divided into: 1. Priapism in infants and children from reflex causes. 2. In adults symptomatic of stone in the bladder or urethra, of stricture of the urethra, or retention. 3. Symptomatic of gonorrhœa. 4. Due to cantharides. 5. Essential priapism.

The first four are not the subject of the present paper, but the fifth form, essential priapism, may be divided into four varieties as follows:

1. From injury to spinal cord or to perineum.
2. Symptomatic of cerebral or descending cord disease.
3. Occurring after alcoholic and sexual excesses.
4. Cases occurring in persons of general good health, with no apparent adequate cause, but now by some attributed to leukæmia.

In the cases resulting from spinal injury the course depends upon the extent and severity of the injury. In some cases recovery occurs and the priapism ceases; in others death occurs without relief from the priapism. The cases of priapism from cerebral and descending spinal disease are rare and few in number, and in most of the cases reported the priapism was of very long duration. In the cases from alcoholic and sexual excess the mode of onset is variable, in some cases sudden, in others more gradual; but in all the condition is persistent and temporarily obstinate, and in many of them very painful, with swelling and often a nodular condition of the penis. Often there are marked tenderness over the perineum and at the bulb, and spasm of the cremaster muscle. The pain also, as distinct from the tenderness, is often very severe, and there will be difficulty in passing the urine, and more or less general systemic depression and prostration. Generally not the whole organ is involved. The invasion is usually sudden and the involution usually slow and gradual, with many relapses. While the etiology is not yet clearly established, it would seem that in most if not in all cases there has been some injury to some part of the penis itself, or marked irritation of the sexual centre, or of the nervi erigentes, or of the sympathetic.

In regard to the class of cases stated as possibly due to leukæmia, Dr. Taylor was not yet fully convinced of the certainty of the relation between the two conditions, and thought that possibly they might be merely coincident, the priapism being due to some other cause or causes, and urged more careful investigation of the previous history of these cases.

The prognosis was always somewhat uncertain and depended upon the cause. In cases due to injury the treatment by incisions would usually greatly hasten recovery. In the spinal cases the prognosis must be very guarded. In the neurasthenic and so-called leukæmic cases the priapism was likely to be very persistent, and liable to relapse.

Treatment: There could be no regular routine treatment. Chloroform, ice, electricity, and leeches, as a rule, were unsuccessful. Dr. Taylor's preference was for early moderate incisions into the most turgid part, or parts of continuous pain, or into nodular masses that might be present probably as a result of traumatism. Bromides and other sedatives during the paroxysms were of advantage. Locally hot baths, hot and cold spinal douches, sponging with hot water or anodyne poultices might be of service.

DR. LEWIS, of St. Louis, reported a case of priapism cured by ligation of the dorsal arteries of the penis, and Dr. White, of Philadelphia, suggested the use of thyroid extract, disclaiming, however, any experience with it in this condition.

Chronic Contraction of the Prostatic Fibres Encircling the Vesical Neck.—DR. EUGENE FULLER, of New York, read the paper. In defining the condition, Dr. Fuller noted the distinction between spasm of the vesical neck and the true contraction (from the standpoint of his paper), viz., that spasm is but a momentary condition, while contraction indicates a somewhat more lasting (sometimes continuous) tonicity, and both are distinct from the "pain" in the neck of the bladder, which is known as neuralgia of the vesical neck. Spasm is purely functional and is not permanent, and is associated with no pathological change. The contraction mentioned in the title of the paper represents a definite pathological condition, but bears a relation to the spasm, in that long-continued or very frequently repeated spasm may be a causative factor in the production of the contraction. The lesion is comparable to that in the sterno-cleido-mastoid muscle in chronic torticollis. If perineal section is made under full anæsthesia, a hard inelastic ring-like contraction is felt by the finger, very different from the feel of the normal vesical neck. The calibre is large enough readily to admit a good-sized sound, and therefore cannot be determined by examination with that instrument. One cannot force the finger into the bladder without tearing the ring, or first cutting it, preferably through the floor. There is no evidence of prostatic enlargement, either in examination by rectum or through such a perineal wound.

Dr. Fuller has had no opportunity to make a histological examination of the lesion, as there have been no deaths among the observed cases this far. The principal clinical symptom is the partial or complete inability to pass urine, which inability is of gradual and intermittent development, beginning with hesitancy and dribbling and finally resulting in attacks of complete retention, requiring the catheter to empty the bladder; and later the constant use of the catheter becomes necessary. This development may take three or four years. Diagnosis must be made from the clinical history and by exclusion of other (usually acute inflammatory) causes of obstruction to urination. The only positive evidence, however, is the digital examination of the neck of the bladder through a perineal section, at which time also the disease may be corrected by thorough incision of the contracted ring of fibres. In many cases there are also a clinical history and evidence of trouble with the seminal vesicles, or with the ureter or the kidney (*e.g.*, chronic pyelitis), or possibly of the rectum. Most cases occur in patients between twenty-five and fifty years of age. The only treatment found available by Dr. Fuller is thorough divulsion or cutting of the fibrous ring at the neck of the bladder, putting in a perineal tube for drainage of the bladder and to give it complete rest for a period varying according to the case.

Dr. Fuller said he had found no literature on ex-

actly this subject, and, comparing his cases with those reported by Belfield and Post, pointed out the differences between them and his cases as reported.

Dr. Chismore detailed one or two cases of similar character, in which operation had not effected a cure, and felt that the condition was to a large extent a neurotic one.

Dr. Alexander gave it as his judgment that the condition was due not to contraction of the fibres about the neck alone, but to a hardening or contraction or fibrous condition of the whole substance of the prostate; that the sudden attacks of retention were the result of congestion, and that the operation relieved the condition by reducing the congestion. He had noticed clinically three forms or conditions of the ring: 1st. When it was still soft and elastic, but slightly harder than normal. 2d. When it presented some resistance at first to the entrance of the finger, and then suddenly gave way, splitting in a stellate manner. 3d. When it was very dense and hard, and would not admit the finger at all. In the first and second conditions relief was obtained by dilatation; in the third only by incision. But he felt that the complete division of the ring was not entirely harmless, as he had seen a condition of incontinence following it, although in these latter cases the patients were in a poor and low condition of general health.

Dr. Bryson spoke of the unfortunate lack of opportunity to get at the exact pathology by post-mortem examination. He reported several cases similar to those of Dr. Fuller, and spoke of one of them particularly, in which with almost the same train of symptoms he had found a very much hypertrophied veru montanum. He suspected tuberculosis in this case and later found a descending tuberculous ureteritis. In connection with this case Dr. Bryson spoke of the relation between diseased conditions of the kidney and ureters, and bladder manifestations resulting from them, and gave it as his experience and opinion that there occurred no pain, frequency, or tenesmus (as a result of disease in kidney or ureter) unless the lower third of the ureter was involved.

Dr. Bangs said that he found cases, such as Dr. Fuller had described, not at all uncommon. He thought that the etiology was traceable to some antecedent trouble of an inflammatory character in the prostatic urethra, or to some sexual disturbance. In the case of retention and residual urine, the bladder must have drainage and rest for a sufficient time to restore the harmony of action between the detrusor and the sphincter.

Tuberculous Necrosis of the Prostate.—Dr. Fuller read a second paper on this condition, which he said was not common, most of the cases usually classed as such being a tuberculous condition of the adjacent structures, the prostate itself not being involved. The prostate is very rarely primarily tuberculous. Dr. Fuller had seen two cases recently, in one of which there was a small focus of necrosis in the body of the prostate, and in the other the entire prostate was in a condition of necrosis. Resolution of tuberculous necrosis is not improbable, either by the area affected becoming encysted, or by its breaking down and discharging freely into the urethra or rectum.

A New Method of Removing Vesical Polypi.—Dr. George Chismore, of San Francisco, read a paper with this title. The principle involved is suction, by means of an aspirator attached to an ordinary litholapaxy catheter, the aspirator being a strong, thick, rubber hand bulb. The bladder is injected with three or four ounces of boric-acid solution, with cocaine, four per cent.; and then the catheter is passed, and the polyp is caught by suction in the eye of the catheter; when it is caught, the catheter is held quiet for a moment to get a firm hold, and then by a slight swaying or sawing movement, combined with slight traction, the growth is loosened from its attachment to the bladder wall and passes through the catheter into the receptacle attached to it between the hand bulb and the proximal end of the catheter. When a polyp is caught, the "feel" is different from that noted when the eye of the catheter is in contact with the bladder wall; in the latter case one can feel the slight thud and then the catheter seems firmly fixed, and at the same time there is a cry of pain from the patient; when a polyp is caught there is no pain, the "thud" is absent, and the catheter is not firmly fixed, but usually freely movable, especially if the growth is pedunculated. The polypus usually is detached from the bladder wall very easily, with very little traction force. After the removal of the growths by this method, the hemorrhage ceased at once in the two cases reported, and up to date (three years after operation) there has been no recurrence of symptoms indicating the presence of any subsequent development of the polypi.

Dr. Bryson remarked that he had never yet seen a papilloma of the bladder that did not sooner or later degenerate into a malignant condition.

Rapid Formation of a Vesical Calculus. — Dr. William Judkins, of Cincinnati, Ohio, reported a case of vesical calculus in a child about five years old. A stone was found with a searcher and removed by suprapubic cystotomy. While the bladder was open, very careful examination was made, of course, for evidence of any other calculi, and none was found. The one removed was about one and one-fourth inches long, three-fourths inch wide, and one-half inch thick; rounded and smooth, and absolutely without facets. During the convalescence the child contracted pneumonia; the abdominal and bladder wound sloughed and opened up, and there was a small omental prolapse through it. The child finally recovered, and the abdominal wound closed and was sound and firm. A short time afterward symptoms of stone again appeared, and upon searching another one was found. This time, only seven months after the first operation, a median perineal lithotomy was performed and a stone extracted, which was larger than the one formerly removed. It was about one and three-fourths inches long; somewhat cylindrical in shape, with one end rounded, the other cut off square and blunt; and there was a moderate hourglass-like constriction at about the middle. It was rough but showed no facets, and had all the appearance of having been encysted. The interesting question in the case was whether a stone of the size of the second found could have formed in the short time between the first and second operation: or whether it was present at the time of the first operation, and if so where, for it certainly was not in the bladder at that time, that viscus being clear, smooth, and empty, as evidenced by the careful examination of Dr. Judkins and two competent assistants.

Nephrectomy for Cystic Adenoma in a Pregnant Woman.—Dr. Charles L. Scudder, of Boston, reported a case of this nature. At the time of the first examination the patient was nineteen years of age, and gave evidence of an enlarged and movable left kidney with the usual symptoms. About six months later she was married, and soon after became pregnant, during which time the kidney tumor had grown perceptibly larger, and on palpation showed fluctuation. A portion of the fluid was withdrawn with an aspirator, and showed the usual constituents of cystic fluid, with, in addition, however, the rare condition of the presence of bile in it. The kidney was removed without difficulty; it showed no connection by adhesion or otherwise with the liver or gall bladder. The recovery was uneventful; the pregnancy went on to full term, with delivery of a healthy child. The

patient had been well and strong ever since then (it was now three years since operation), and had had a second normal pregnancy and delivery since. Seven days after the removal of the kidney the remaining kidney was secreting a normal amount of urine in the twenty-four hours. The urine was at present about eighteen hundred to two thousand cubic centimetres in quantity in twenty-four hours, of normal specific gravity; the amount of urea was normal; there were at times a very slight trace of albumin and an occasional cast. The interesting points of the case were the presence of bile in a cyst of the kidney, the fact that the operation did not interfere with the pregnancy, and the time that it took the remaining kidney to adjust itself to its double duty.

Hernia Testis.—Dr. G. W. Allen, of Boston, reported a case of this kind. The patient had a long-continued gleet, but had never had syphilis nor any sign of tuberculosis. He had epididymitis for three weeks at time of examination. A little later there was a swelling over the testis, resembling a tuberculous abscess of the epididymis. This was incised, and the incision went directly into the testis. There was sloughing of the skin and adjacent tissues, which persisted for some time. A healing process finally set in, and the tunica albuginea was filled up with granulation tissue. Several attempts were made, unsuccessfully, to cover the raw area with skin. The patient had at present a small area of open granulation, which was slowly closing in. Bacteriological examination of the secretion from the nodule showed staphylococci, but no streptococci, or gonococci, or tubercle bacilli. There was very little suppuration. Dr. Allen thought it unusual to have such a process caused by the staphylococcus.

Third Day—Thursday, May 6th.

An Aid to the Discovery of Tubercle Bacilli in the Urine.—Dr. John P. Bryson, of St. Louis, read the paper. In the past two years Dr. Bryson has noted the possibility of the bladder acting as a reservoir of tubercle bacilli and also the possibility of the bacilli multiplying there, if the conditions present furnish them a good culture medium, *i.e.*, plenty of mucus. The bacilli are not killed by the urine, but for a long time remain in a healthy and active state in the mucus usually found in these bladders. The speaker's method of demonstrating these microbes in the urine consists in having the patient pass voluntarily all the urine that he can. Then he passes a sterile catheter and draws off the residual urine. This may be very small in quantity, perhaps only the catheter full, perhaps only a few drops, but by some pressure on the hypogastrium one can almost invariably get enough to work with. This is caught in a sterile test tube, the catheter being squeezed out if necessary or flushed with sterile water, and then centrifugalized and examined by the usual staining methods. Care must of course be taken to exclude all possibility of contamination from outside sources.

Dr. Bryson detailed a number of instances in which the method had proved of great value, and presented a number of photo-micrographs showing slides from both tidal and catheter urine from the same patient, in which the tidal urine gave few or no bacilli and the catheter urine was full of them.

Oxaluria and Lithæmia.—Dr. Bransford Lewis, of St. Louis, read a paper on "Urinary Inflammations and Disorders, in Connection with Oxaluria and Lithæmia." He remarked that although in most books and monograms on genito-urinary subjects, the general influence of the presence of oxalic acid and uric acid and urates in abnormal quantities was mentioned in a more or less vague way, it being taken for granted that the condition was present, he knew of no systematic literature on the subject. He reported in detail fifteen cases showing the apparent influence of the uric or oxalic acid respectively. In some of the cases almost if not quite all of the symptoms were caused by those acids; in some the inflammatory condition, caused primarily by some other agent, was made much worse by them. He had seen marked frequency of urination, mucous or slightly purulent discharge, even hæmaturia and pain caused by the presence of oxalate-of-calcium crystals in the urine, all of which symptoms disappeared upon proper treatment of the "oxalic condition." He gave as a summary the following conclusions:

1st. Both oxalic and uric acids may appear in the urine either in a physiological or a pathological manner.

2d. When pathological, they may exert certain injurious effects upon the genito-urinary organs.

3d. These effects may be either the inciting of disease where there has been previous health, or they may act by rendering more serious and resistant to ordinary methods of treatment other inflammations and disorders of those organs which are already present (*e.g.*, gonorrhœa, etc.).

4th. The uric-acid element is not always frankly evident as a causal or complicating factor in such cases, and

5th. When recognized is neither more nor less easily controlled than when its disease manifestations occur in other organs of the body.

6th. When either the oxalic or uric acid element is acting injuriously in the way mentioned, systemic treatment (dietary, hygienic, and medicinal) is demanded, and may even take precedence over the local measures that are usually considered sufficient in such inflammations and disorders.

For medication he had used mostly citrate of lithium and the salicylates in some form. The diet was carefully regulated, and if the oxalates were present in abundance he gave plenty of meat and no vegetables; if the urates or uric acid, he gave vegetable diet and little or no meat. The local treatment was that usually adopted for the inflammatory condition which was present, according to its cause and stage, etc.

Dr. White said that he had been in the habit of regarding these disorders as always associated with neurotic conditions. He related one case in which sexual failure had been connected with oxaluria, and stated that with relief of the oxaluria by appropriate treatment the sexual difficulty had disappeared. He had almost altogether given up the use of the salicylates directly, but was in the habit of using combinations of caffeine, phenacetin, and salol.

Dr. Bangs spoke of the important relation existing between the processes of animal chemistry within the body and the urinary tract. Systemic and hygienic treatment he did not believe was enough; he thought that in many if not all cases one would have to give considerable local treatment, just as when these diathetic conditions were not present.

Dr. Watson referred to the undoubted existence of cases of gouty urethritis, in which there were large quantities of uric acid and urates, with bladder irritation and sometimes a purulent discharge, and mentioned the relation between these conditions and hæmaturia occurring before the formation of stone. In the cases that he had seen, the persistency and obstinacy of the condition had been very marked, often resisting for long periods every known method of treatment, local and systemic.

Dr. Bryson had observed often that the uric and oxalic diatheses had increased inflammatory conditions already existing, but thought there would be

no actual purulent discharge without some other infection being present. He had never made out any satisfactory relation between these diatheses and sexual irregularities.

Photographing the Interior of the Bladder.—Dr. William K. Otis, of New York, showed an instrument for this purpose. It was a Nitze cystoscopic tube with a small circular camera, or rather plateholder, attached to the proximal end. There was a small "finder" attached above the plateholder, into which the image was thrown by right-angled reflecting prisms. The best exposure time with ordinary plates he had found to be about fifteen or twenty seconds. By rotation of the circular sensitive plate ten pictures could be taken without changing the plate. Dr. Otis objected to and criticised the circular plate, as it was difficult to cut the round glass plates well, and inconvenient to cut out the individual photographs from the printed picture. He was now having an instrument made that would take a square plate, which he thought would be much easier to manage in many ways. He spoke of an earlier instrument of Fenwick's, in which the effort was made to take a larger picture than was practicable. This instrument, which he presented, takes the picture just the actual size of the calibre of the tube, which can then be enlarged from the original negative. He showed no pictures.

The association then adjourned to meet next at West Point.

AMERICAN MEDICAL ASSOCIATION.

SECTION ON PRACTICE OF MEDICINE.

J. H. Musser, M.D., Philadelphia, Chairman.

Tuesday, June 1.

Address of Welcome.—Dr. J. H. Musser, chairman, made a brief address of welcome, and also read a paper on "The Treatment of Dilatation of the Heart" by title. Dr. Musser said: "If you recall the foundation of the city which has the honor of entertaining the American Medical Association this week, the city of justice and love; if you remember that you are in the city of the minimum of tenements, the maximum of homes, exhaling an air of hospitality, you need not be reminded that its citizens vie with one another in extending you a hearty welcome. Recall the fact that in this community labored Rush, Morton, and other distinguished physicians; that here the first hospital of the country, the first medical school, the first public library were founded; that here the first academy of natural science, the first medical society (the College of Physicians), the first scientific body (the American Physiological Society), were organized, and you cannot but feel that in this city of brotherly love you are thrice welcome."

The Schott Treatment of Cardiac Disease.—Dr. W. B. Carnac, of Baltimore, read the paper. The first part described the bath and exercise systems employed by Schott at Bad Nauheim, and Schott's theory of the action of the saline baths. The author's principal object was to state results obtained from the same system, but with the use of artificial baths, at the Johns Hopkins Hospital, Baltimore. The number of cases was yet limited, ten—all of chronic cardiac disease. The principal effects noted were: (1) Marked influence upon the position of the apex beat, bringing it from the left toward the median line and its normal position; (2) increase in the amount of urine; (3) very marked improvement in the pulse, even in cardiac dilatation associated with arterio-sclerosis; (4) the inefficiency of the treatment in extreme nephritis. Of the ten patients, four died, two showed no improvement, one showed improvement only during the treatment, three had continued to improve. It was remarked that no one claimed to cure chronic cardiac disease. In one fatal case (fatal quite independently of the treatment) there was aortic insufficiency, in two there were dilatation and arterio-sclerosis, in one there was chronic nephritis, in one mitral stenosis. The author concluded from this limited experience that extensive nephritis was a serious obstacle to success with the baths and exercise, though if it was not too grave the patients might be benefited. Extensive changes in the position of the apex beat and cardiac outline did not necessarily indicate permanent good results. Arterial sclerosis did not necessarily contraindicate the treatment. Among drugs, digitalis was freely employed in many of the cases. While they had not been able to effect permanent reduction of the size of the heart, they had found in every case slowing and strengthening of the pulse and diminished tension.

Dr. William Osler had seen some patients with whom this treatment had been carried out at Bad Nauheim with rather extraordinary results. To carry it out in either hospital or private practice was somewhat irksome, but it was perfectly feasible.

Dr. Stockton, of Buffalo, referred to the necessity for conducting the exercises with care lest through overexercise more harm than good be done.

Dr. Foster, of Pennsylvania, asked the author whether control experiments had been made with simple water baths.

Dr. Herrick, of Cleveland, thought one ought to inquire into the cause of the heart trouble and the habits of the patient, before deciding upon any course of treatment.

Dr. Morrisy, of New York, spoke of the value which he had derived from massage treatment of chronic heart disease. There was no question in his mind of the benefit of the Schott treatment.

Dr. Jones, of Buffalo, understood that the Schott brothers also directed mountain climbing in suitable cases.

The Prognosis and Therapeutic Indications in Heart Disease.—Dr. D. L. Rochester, of Buffalo, treated this subject in a general way, then gave a few illustrative cases, and stated these general conclusions: In a given case of cardiac disease the prognosis depends chiefly on the condition of the heart muscle and the walls of the arteries, especially the arterioles. The chief therapeutic indications were rest, removal of obstruction to the circulation, massage, baths, regulated exercise, stimulation to rhythmical contraction of the muscular fibres of heart and vessels. Besides carrying out these indications in his illustrative case, he induced mild catharsis by calomel and salines, gave milk and kumyss, and induced diuresis by diuretin. Ordinary measures failed to induce diaphoresis until he combined the administration of pilocarpine and hot baths.

Dr. Herrick, of Chicago, mentioned three cases of cardiac dilatation, apparently due to fibrous myocarditis, the patients entering the hospital with extreme cyanosis, œdema, etc., in which prompt relief followed venesection.

Dr. H. O. West, of Galveston, called attention to two factors acting in the production of cardiac dilatation, viz., continued hydrostatic pressure, the column of blood acting through the incompetent aortic valve upon the cavity of the left ventricle; the second was disturbance of the circulation through the coronary artery in consequence of valvular incompetency. This interfered with the nutrition of the heart muscle. The abstraction of blood was strongly indicated in some cases.

Dr. Marvin, of Louisville, spoke of the great value of strychnine as a cardiac tonic. He preferred to

give it by hypodermic injection, and employed increasing doses, going much higher than one-twentieth grain when necessary.

Dr. J. N. Upshur, of Richmond, had found much benefit from alternate use of strychnine and nitroglycerin.

Dr. Cohn, of Philadelphia, approved of venesection in some conditions of heart disease.

The discussion was also participated in by Drs. Wainwright, J. F. Jenkins, McConnel, Rochester.

Reduplication of the Heart Sounds.—Dr. C. F. Hoover, of Cleveland, read the paper.

The Use of Digitalin with Reference to Dose.—Dr. Henry Beates, of Philadelphia, pointed out in the first part of this paper the reasons which had led him to abandon the use of the crude drug digitalis. The same reasons, complexity of composition and variation in effect, had led him to give up the alkaloid in favor of digitalin (German, pure). This preparation was a derivative from digitalis, uncontaminated by other principles, possessed unvarying strength, was free from that property which produced gastric irritation, was a powerful stimulant of the whole cardiac apparatus, was a reliable and pronounced stimulant of the vasomotor system, did not develop cumulative effects. Dr. Beates gave much larger doses than some had recommended. The minimum dose with him was one-tenth grain; maximum dose, one-third to one-half grain. In all lesions of the heart, with the single exception of mitral regurgitation complicated by dilatation of the auricle, this drug was of great value.

Dr. Fowler expressed appreciation of the practical value of Dr. Beates' paper.

Dr. Herrick, of Cleveland, wished to know whether the author would use digitalin in acute inflammation of the heart. If so, he must differ from him.

Dr. Beates replied that he would not give digitalin in simple inflammation of the heart, but it was valuable in the treatment of the results of such inflammation.

Tracheal Tugging.—Dr. Harry Toulmin, of Philadelphia, read a paper on this subject. His attention had been called to tracheal tugging clinically under Dr. Osler, several years ago, and on looking up the literature he had found it discussed by two authors and mentioned by Dr. Packard. The word tugging meant, as stated by Dr. Ross, more than mere movement; or, if the latter condition were included, the cases might be divided into four groups: (*a*) very slight up-and-down movement; (*b*) slight movement; (*c*) distinct tugging; (*d*) marked tugging. Examination of seventy-five patients with various conditions disclosed distinct tracheal tugging in only seven. The heart was normal in two of the seven, hypertrophied in four, insufficient in one, possibly aortic stenosis was present in another, in one there was aneurism of the ascending aorta. He said he should expect tugging in cases of dilatation of the aorta. If it were safe to draw conclusions from so limited a number of cases examined, he would say: (1) up-and-down movement of the trachea occurs in many healthy individuals, and accompanies other diseases as well as aneurism; (2) in such cases the movement is much affected by respiration, in the majority of cases being present during inspiration only; (3) in a very small percentage of cases distinct tugging of the trachea may be present without involvement of the aorta either by aneurism or simple dilatation.

Thrombosis of the Vessels of the Neck.—Dr. Helen Baldwin, of New York, read the history of a case of thrombosis of the veins of the neck, and gave a *résumé* of thirty-four cases found in literature. Her case was that of a girl who entered the infirmary with a history of having had three attacks of rheumatism, the last one seven years ago. Five days before entering she had swelling of the feet, and afterward swelling in the neck and arm, with pain and such symptoms as attend venous thrombosis. The swelling in the neck was on the left side, along the course of the jugular vein, which was hard, tortuous, and tender, with redness of the overlying skin. There were double aortic and mitral murmurs. The liver was enlarged; there was ascites; albumin and casts were found in the urine. The temperature was persistently low the first five days, from 94° to 96° F., but on taking it by rectum as well as by mouth it was found higher in the rectum, 102° F., and the difference of six or eight degrees persisted. After three weeks double pneumonia developed, the patient died, and autopsy showed cardiac disease, with great dilatation of the right ventricle. The veins of the neck were filled with firm thrombi, and there was evidence of an endophlebitis of long duration in the subclavian vein, which evidently had been the seat of primary formation of the clot. The extension of the clot formation from this point had probably been favored by failing cardiac compensation. Lesions were present in the liver, spleen, stomach, and kidneys.

As to causes, in eight of the thirty-four cases found in literature there was pressure on the veins, causing stasis; in sixteen there was grave blood dyscrasia; in five there was endophlebitis, as in her own case. While the prognosis of venous thrombosis in general was not so grave, in cases involving the jugular veins it had seldom been seen except in the last stages of a fatal disease. Only four of the thirty-four subjects recovered.

Wednesday, June 2d—Morning Session.

Discussion on Orrhodiagnosis of Typhoid Fever.—Dr. William H. Welch, of Baltimore, opened the discussion with verbal remarks on the principles underlying orrhodiagnosis. There could be no question of the great value of any method for positive diagnosis of typhoid fever. While a clinical study of the case was sufficient in many instances, yet there were many cases in which typhoid presented anomalous symptoms, and mistakes in diagnosis were not uncommon. In children typhoid often ran a very irregular course, and in the South it would be desirable to determine how many of the fevers were malarial and how many typhoid, or whether there was a slow climatic fever in the Southern States. A method of positive diagnosis of typhoid fever would aid us greatly. It was a striking fact that before the introduction of sero-diagnosis of typhoid fever the discovery of the typhoid bacillus had led to few practical results, being in contrast with the discovery of the diphtheria and tubercle bacilli. The working out of the method now known as Widal's grew out of investigations regarding immunity, which were undertaken for scientific interest and not for practical application.

Having passed in review the investigations of Pfeiffer, Gruber, Widal, etc., Dr. Welch briefly described the Widal method. The serum of blood of a typhoid patient added to a culture of typhoid bacilli caused the latter to conglomerate and lose their motility. This reaction probably had nothing to do with immunity, or with the bactericidal effects of the blood. Whether the phenomenon was a histological one or a physical one was not known. It (the agglutination) occurred also with dead bacilli. Blood dried for six months, possibly longer, retained almost its full agglutinating power over the bacillus cultures. It was not affected by light, but was destroyed by high temperature—70° to 75° C. The agglutinating property was possessed also by the various juices of the body and serous exudates. Whether it was the same substance which caused both the immobilization and

the clumping had not been determined. The two results were not always present to the same degree.

Regarding methods, Dr. Welch thought the blood should be obtained by pricking the lobule of the ear or finger, a method less likely to beget prejudice than raising a blister or sticking a vein. He also suggested as a point for discussion whether it was best to use serum or dried blood. It had been claimed as an advantage for serum that it permitted greater accuracy in dilution. Perhaps Dr. Johnston, who had brought forward the method of using dried blood, could tell how to make a correct quantitative estimate. The microscopic test was preferred by Dr. Welch to the macroscopic test.

Should one lay most stress upon the immobilization or upon the clumping? All were agreed that young cultures, those which had not grown more than twenty-four hours, should be used. He suggested fifteen hours. Some preferred agar, some bouillon culture. As to the time limit, he would suggest two hours at the temperature of the thermostat. As to dilution, Widal held that one in ten or one in fifteen was best. But in doubtful cases a larger dilution, say one in forty or fifty, would be less likely to show the reaction if the case were not typhoid than if it were. Indeed, no case not typhoid had been positively known to give the reaction with a dilution of one in fifty, while a good many had in dilutions of one in ten up to twenty or twenty-five. Another point of possible error was the presence of the reaction at variable periods in the disease; also for weeks or years after recovery, even seven or ten years.

After mentioning practical results briefly, the speaker said he thought the test was extremely valuable in diagnosis, and local and State health boards ought to establish laboratories to which general practitioners could send specimens for examination.

Dr. Wyatt Johnston, of Montreal, spoke of personal observations and investigations in orrhodiagnosis. He had examined somewhat over six hundred samples of blood, more than half of which were from typhoid cases. He could speak strongly of the diagnostic value of the method. He had experimented by using the clumping of the typhoid bacilli as a means of separating them from others in a liquid culture, filtering this through sand. The colon bacillus ran through, while the typhoid remained clumped. But nothing practical had yet come of the method as it had so far been developed. It had been for the purpose of making the test useful to the general practitioners that he had suggested transmission of dried blood for examination, for Widal had already shown that drying did not interfere with the reaction. In this manner samples to be tested were sent him by post from long distances. The hæmometer enabled him to make a pretty accurate dilution or quantitative test, but he did not advise the method in hospital practice. The clumping took place in a slightly alkaline rather than in an acid culture medium. Dr. Johnston had found the reaction absent in only one case of typhoid, and in that instance the patient was not seen until late in the disease.

Dr. R. C. Cabot, of Boston, read a clinical report on the same subject. Of cases collected in which the Widal test had been applied, in 1,826 supposed to be typhoid the test confirmed the diagnosis in 1,740, or 95.2 per cent. Out of 1,649 cases known to be other than typhoid, the serum reaction was negative in 1,592, or 96.5 per cent. Thus in a total of 3,475 cases the results of the serum test had been borne out by the clinician. Dr. Cabot's own experience related to a little over 400 samples, all tested by himself, from patients seen by him. One hundred and one of these were supposed to be typhoid, and he got the reaction in 96; failed in 5. In 301 known to be other than typhoid, the reaction was absent in 300. In 1 it was positive—a case of pernicious anæmia in a negro. In 17 cases of cerebro-spinal meningitis the reaction was not present. His method was to prick the ear, take a single drop of blood with the medicine dropper, put it directly into a small tube containing ten drops of bouillon culture, and wait fifteen to thirty minutes for the reaction. Unless there were both clumping and cessation of motion, the reaction must be regarded as doubtful.

Dr. W. B. Bloch, of Baltimore, also gave a clinical report on orrhodiagnosis, based on work in the Johns Hopkins Hospital. The serum and dried blood tests had given about the same results. The whole number of tests was 107. Out of 46 typhoid cases the percentage of failures had been 6.5. The method was of value in distinguishing typhoid from some cases of tuberculosis and malaria. In these diseases without complicating typhoid the reaction had been present only in some cases with coma; why it was present then, he was unable to say. He had used a dilution of sixteen; time limit, thirty minutes.

Dr. H. M. Biggs, of New York, sent a paper based on the work of the board of health of New York City. The board at first provided for dried-blood specimens to be sent it by physicians; later it expressed a preference for serum obtained by fly blister, but sometimes used dried blood. Aside from this, the board had seen no reason to change the method originally employed—one to ten bouillon, fifteen minutes. Between three hundred and four hundred samples had been tested. While the serum reaction was by no means specific, yet it was usually reliable. If not applied in a practical way it was liable to lead to false conclusions. The board preferred the lower dilution to the higher, because more errors were likely to arise from the high dilutions failing to reveal typhoid when present than from low dilutions showing the reaction when typhoid was absent. But both could be employed in doubtful cases.

Dr. S. S. Kneass, of Philadelphia, had in the last six months made 103 blood examinations; 45 were submitted with diagnosis of typhoid fever, and 43 of the 45 gave the complete Widal reaction in fifteen or twenty minutes. Cases not typhoid gave uniformly negative results.

Drs. J. H. Musser and John M. Swan, of Philadelphia, presented a paper, which was read by Dr. Swan. One hundred samples of blood had been examined; 35 were supposed to be typhoid, and the reaction was present in 34. Twenty-four were from patients convalescent from typhoid. In 18 of these the reaction was complete, in 4 imperfect, in 3 absent. In part of 7 cases of prior typhoid the reaction was present. In other diseases than typhoid the reaction was absent.

Dr. Mark W. Richardson, of Boston, gave in this paper the results of examinations of 109 stools from 49 individuals, by the Elsner method for detecting typhoid bacilli. Thirteen of the 49 patients were known to have typhoid. In 9 of the 13 the method gave positive result—in 2 of them by the eleventh day, in 7 not later than the twenty-sixth day. In some the bacilli could be isolated only after several examinations. The result was negative in 3 cases. In all 13 the serum reaction was present at least two days before the bacilli could be found, thus showing the superiority of this method. Yet in cases in which the serum reaction was negative or late, it would seem that examination of the stools for the typhoid bacillus would be of value. In 17 stools of non-typhoidal cases all were negative. Twenty-three stools of 13 patients convalescing from typhoid were examined, with 1 positive result.

Dr. N. S. Davis, Jr., said the results of the Widal test in Chicago corresponded closely with those given by Dr. Cabot—over ninety per cent. successful.

Dr. H. O. West, of Galveston, hoped the Widal test would soon be employed more generally by physicians in the South in cases of fever diagnosticated by some as malarial, by some as a climatic continued fever, by others as typhoid.

Dr. Herrick, of Chicago, mentioned two cases of negative Widal test, in which post-mortem showed typhoid and also tuberculosis. These cases raised the question of the influence of the mixed infection on the serum test.

Wednesday, June 2d—Afternoon Session.

Officers.—The nominating committee of the section reported for *Chairman* for the ensuing year, Dr. S. A. Fisk, of Denver; and for *Secretary*, Dr. Albert Jones, of Buffalo. These gentlemen were duly elected.

Observations on Two Examples of Typhoid Meningeal Infection.—Dr. A. P. Ohlmacher, of Cleveland, pointed out the fact in this paper that in very few cases had the typhoid bacillus been discovered as the cause of meningeal inflammation, and it had fallen to him to meet with three cases of typhoid fever in which meningitis was demonstrated. In two of the three, examination revealed the typhoid bacillus as the infecting organism of the meninges. The third case revealed other bacilli as well as the typhoidal in the meninges, and was therefore reported separately as one of mixed infection.

Relapses in Typhoid Fever.—Dr. William Osler spoke upon this subject. The doctor was often erroneously considered responsible for these relapses by relatives of the patient; nor was the diet definitely responsible, unless in a limited number of cases. The term relapse should, he thought, be restricted exclusively to reinfection after a distinct and definite period of apyrexia. Intercurrent relapses, with fall of temperature to nearly normal, did not belong to the same class as true relapse. The sources of reinfection were still unknown. The typhoid bacilli might be present in different organs as well as in the intestine. Out of five hundred cases of typhoid treated in his wards there had been relapse in forty, which was about the percentage given by Liebermeister, and very much larger than that given by Murchison. There might be double, rarely triple, very rarely four or five relapses. In one of his cases the disease with two relapses covered a period of nearly six months. The Brand treatment had nothing to do with relapses.

Perichondritis of the Larynx in Typhoid Fever.—Dr. M. H. Fussell, of Philadelphia, read the paper and showed photographs of a case of perichondritis of the larynx in typhoid fever. The patient had stenosis of the larynx caused by the perichondritis, which Dr. Fussell diagnosticated, but refused tracheotomy. Autopsy showed, among other changes, large perichondriac abscess, necrosis of cartilage. Diagnosis before stenosis was difficult in these cases.

The Rational Antiseptic Treatment of Typhoid Fever.—Dr. H. O. West, of Galveston, Tex., read the paper. There was no drug, or combination of drugs, which had received general acceptance as capable of cutting off typhoid fever. The author gave his reasons for scepticism as to the power of any drug to cut short this disease. It was of infectious nature, and drugs could not reach all of the micro-organisms or kill the germs without killing the patient. The claims for so-called specifics in this disease had not been substantiated by the statistics of others than the promoters of the methods. A rational antiseptic treatment would include liquid diet for several reasons, among them being weakened functional activity of the salivary glands, of muscles of mastication and deglutition, and of the gastro-intestinal tract, more particularly of the stomach. He would reiterate and emphasize the fact that the proper adaptation of the diet to the conditions produced by the disease was far more important than the use of any drug or combination of drugs. Intestinal antisepsis could be promoted by free use of water in the stomach, which tended to wash the organ and to aid digestion. It also stimulated activity of the skin, lungs, and kidneys. For similar reasons the large intestine might occasionally be washed out. Abnormal or decomposing intestinal contents should occasionally be swept out by the cautious administration of a mercurial or saline cathartic. In his opinion the persistent, continuous use of purgatives was bad practice. Before prescribing any of the long list of antiseptic drugs, one would do well to consider the effect upon the stomach. If they favored the development of gases or fermentation, they did harm. His own experience would not add much to the reputation of intestinal antisepsis in typhoid fever. Still, he could recall a few cases in which a good effect seemed to have been produced. There were thymol, bismuth, turpentine, carbolic acid—indeed, the very fact that the list was so long was pretty conclusive proof that none had been found a specific in typhoid. The hygiene of the room required especial attention.

The Treatment of Typhoid Fever.—Dr. J. N. Upshur, of Richmond, Va., was the author. He thought there was a vagueness of conception regarding the treatment of typhoid fever. After mentioning prophylaxis by disinfection of stools, attention to milk and water supply, etc., the author came to the treatment of a case, and placed special emphasis upon perfect rest and quiet in a well-ventilated room with all precautions against spreading infection. The patient must not be left alone, lest in a state of melancholia he commit suicide. Cool water should be given to relieve thirst; the diet should be liquid, easy to digest, nutritious, milk being in general the best food. Implicit directions should be given as to time and quantity in the matter of feeding. No alcohol for young, vigorous subjects; a moderate amount for those accustomed to it. Mild cases required practically no treatment further than rest in bed and observance of the points already mentioned, and the use of enemata if necessary to keep the bowel open. For headache mention was made of cold compress, shutting out the light from the eyes, sodium bromide; for nervous symptoms, musk, valerian, ice cap for a short period. Salol might be indicated for intestinal fermentation; in threatened heart failure, strychnine. For intestinal hemorrhage, turpentine stupe over the abdomen, enemata of ice water, hypodermic of strychnine or ergot, reduced diet; for peritonitis, opium by the mouth. Attention must be paid to the bladder. Regarding abortive treatment, many claims had been made for this, even of a startling nature in the case of the Woodbridge method. Dr. Upshur had never tried it, not because he was prejudiced against it, but because on investigation he had concluded that it had not been supported by the results. He thought the originator of the method must have drawn erroneous conclusions from cases of mistaken diagnosis, having had no death in twelve years, yet having imposed no restriction upon diet or exercise, given no directions as to bathing. In fact, a cure must have taken place frequently before there was time for a diagnosis. The medicine was administered so often as to leave no time for sleep. Was it strange, therefore, that physicians in the great hospitals had not indorsed or commended this treatment? The parasite was more resistant to antiseptic treatment than was the host.

One Hundred Cases of Typhoid Fever.—Dr. H. G. McCormick, of Williamsport, Pa., reported on 124 cases of typhoid fever which he had treated since 1893, the last 100 cases during a period of thirteen months. The first 24 he treated as the professors and

the text-books generally recommended, and 3 of the patients died. Of the last 100 cases he had lost only 1. The one patient died of perforation of the bowel. Of the 100 cases 19 had hemorrhage, some very severe hemorrhage. Principal points in the treatment of the hundred cases were: Milk and animal-broth diet, abandoning anything which disagreed; ventilation; cleanliness; tepid bath twice a day for cleanliness; bowels kept thoroughly open, usually by calomel given every two hours until from four to eight passages had been secured in the twenty-four hours; an occasional enema; water freely by the mouth. He had thus rendered the alimentary canal as nearly aseptic as possible without medicines. He gave every two hours two drops of guaiacol in emulsion. Guaiacol remained as such within the intestine, and thus reached the point at which it was intended to act as an antiseptic. Another point emphasized was that opium ought not to be given in case of hemorrhage. This was against almost universal teaching, but his objection to opium was that it paralyzed the intestine, tympanites developed, the danger of perforation was greatly enhanced. The coal-tar series was dangerous, and was no more effective in reducing temperature than the guaiacol. Strychnine might be given in case a heart stimulant were required.

Dr. William Osler made some remarks in the general discussion of the several papers. Dr. Ohlmacher's case of meningitis with discovery of the typhoid bacillus as the cause in typhoid fever was very interesting and very rare. He had known meningitis to be diagnosticated as a complication of typhoid in many cases, whereas autopsy showed no evidence of meningitis. Regarding Dr. McCormick's remarkable success with one hundred cases of typhoid fever, it was very interesting, but Dr. McCormick was still a young man. It did not mean a great deal to report a number of cases of typhoid without a death. Dr. Osler had had as many as fifty-three consecutive cases without a single death, and Dr. Stewart, in Montreal, had had as many as one hundred and thirty without a death. If by any method of treatment the speaker should have intestinal hemorrhage in nineteen out of one hundred cases, he would want to change his treatment to learn if there was not some method which was less risky. As to diarrhœa, he had observed that the cases which had given the least mortality were the ones in which there was diarrhœa. Opium was indicated in hemorrhage.

Dr. John Cronyn, of Buffalo, had had relapses in four out of sixty-five cases of typhoid the past winter. He asked whether the germ which caused the relapse was in the spleen, or elsewhere, and redeveloped.

Several others spoke, and Dr. Andrews upheld Dr. McCormick, expressing the opinion that if a mode of treatment saved such severe cases of typhoid that in one hundred there were nineteen with intestinal hemorrhage, that treatment was worthy of adoption.

Dr. J. E. Woodbridge, of Cleveland, regretted that he had not been present when his paper on typhoid fever was called for. He had been accused of saying many things which he had not said. He had never said a harsh thing about any member of the medical profession. He was receiving letters constantly from many physicians, giving most flattering results from the treatment with which his name had become associated. Regarding constipation, this was frequently present, and sometimes required saline laxatives aside from the tablets.

The Clinical Symptoms, Bacteriologic Findings, and Post-Mortem Appearances in Cases of Infection of Human Beings with the Bacillus Pyocyaneus.—Dr. L. Bakker, of Baltimore, gave the results of study in this line at the Johns Hopkins Hospital, where it was the custom to make bacteriologic examination in all cases which came to autopsy. They had found the bacillus pyocyaneus at autopsy in various organs of the body, and in some instances also during life in serous collections, etc. The symptoms seemed to be due less to the local action of the bacillus than to systemic poisoning by absorption of the toxins. The bacillus had been found in inflammations of the various serous membranes, also of the mucous membranes, in gangrenous conditions of the skin, etc. One or more organs might be infected at a time. During life the diagnosis of the presence of the bacillus was made by finding it in the urine, by tapping the exudate, by the odor. Less was known about it in chronic than in acute infections. The prognosis was apparently grave, for only fatal cases had been studied, but the writer thought infection by this bacillus was common and the vast majority of the patients recovered. Speaking of treatment, there was already a serum awaiting the clinician's use.

Trichinosis and Trichina Spiralis.—Dr. F. A. Packard, of Philadelphia, read the history of a case of trichinosis in a man, with finding of the trichina spiralis in pieces of muscle taken from each leg. It was the fourth case in which he had made the diagnosis of trichinosis, but the only one in which he had had opportunity to confirm it by seeking for the trichina in the muscles. His patient was still living, the symptoms having largely disappeared. They had in the first place come on rather suddenly while he was at work in the field, not having been ill previously. There were one chill, some vomiting, no diarrhœa, swollen face, œdema of eyelids and surrounding skin, pain in thighs and calves, especially on pressure. The œdema of the face disappeared in four or five days. Profuse sweating for four days; great thirst. Temperature occasionally was 104.4° F., and on several occasions it fell below normal. Excessive leucocytosis was not found. The respiration was rapid. The man had eaten a piece of bologna sausage, but it was doubted whether this was the source of the trouble. The author was inclined to think trichinosis was not infrequent, was mistaken for rheumatic pains in the muscles, and should be looked for also in cases of quick respiration for which there was no other explanation.

Dr. Stockton, of Buffalo, could on looking back over his clinical experience recall cases in which it was likely trichinosis had existed and he had not recognized it. It was probably more common than had been supposed. He would add to suspicious symptoms those of œdema and sweating.

Myxœdema, with Report of Two Cases.—Dr. J. M. Anders, of Philadelphia, reported the cases. The interest in one case was the fact that a diagnosis of chronic nephritis had been made, and urinary phenomena of that disease had been present several years, but after thyroid extract had been taken for six weeks those symptoms disappeared and had not recurred. Photographs were shown of the other case, which was still under treatment. One patient was unable to take the glycerin extract of thyroid without suffering from toxic symptoms, whereas the powdered extract caused no symptoms.

Treatment of Exophthalmic Goitre and Other Vasomotor Ataxias with Preparations of the Thymus Gland and of the Adrenals.—Dr. Solomon Solis-Cohen, of Philadelphia, presented about a dozen patients, and in his remarks referred to former papers setting forth his views of ataxias of the vasomotor system and the etiological bearing of heredity in such instabilities of the nervous system. This hereditary instability could not be wiped out, but contributing causes to such phenomena as sensations of heat, cold, sweating, polyuria, gastric and intestinal disturbances, etc., could be largely controlled by cer-

tain modes of living and by drugs. The cases presented were mostly such as had symptoms pertaining to goitre, with more or less enlargement of the thyroid body and more or less exophthalmia. In these cases he had administered preparations of thymus gland or of the adrenals, and the results had been, in many instances at least, decided reduction in size of the thyroid body and of the protrusion of the eyes. The adrenal preparations had more influence on the circulatory symptoms, not so much on the eye or thyroid as the thymus preparations, but the best results had come from their combined administration.

Plasmodium of Malaria, Illustrated by Lantern Slides.—Dr. J. Daland, of Philadelphia, caused to be thrown on the screen photographic and some diagrammatic pictures of the plasmodium malaria, tertian type, which he had made in some cases under his observation. They showed the red blood cells containing the plasmodium at the various periods of its development and division, and the changes in form undergone by the cell; also a few of the bodies in the plasma outside the cells.

Thursday, June 3d—Morning Session.

Some of the Clinical Uses of the X-Ray in Medicine.—Dr. F. H. Williams, of Boston, read the paper. While he had used the *x*-ray also in surgery, he limited this paper to its uses in medicine, more particularly in diseases within the thorax. During the past year he had examined the chest in five hundred cases, and could say that the method was decidedly useful to the doctor who would take the trouble to examine many chests in both health and disease. In no instance had he seen harm result. Having become familiar with what was the normal brightness of the chest under the fluoroscope, one would find the shadow darker in spots where there were tuberculosis, infarctions, pneumonic consolidation, aneurism, new growths, fluid in the pericardial sac or pleural cavity, etc. The outlines of the heart could be determined, showing presence or absence of hypertrophy, etc. A variation from the normal excursion of the diaphragm was present in pneumonia, pericarditis, and various conditions, and was an important element in diagnosis and prognosis. A gradual return to the normal excursions of the diaphragm took place in pneumonia and some other conditions. In emphysema the shadow was lighter than in the normal chest. Dr. Williams had been able to recognize pneumonia before physical signs could be elicited.

(*To be Continued.*)

The Use of Gauze in the Treatment of Post-Partum Hemorrhage.—Dr. Schaeffer (*Revue Obstét. Internat.*, December 1, 1896) objects to gauze as a material for uterine tampons in case of flooding. There is no danger of sepsis, if impregnated with iodoform or some other antiseptic. If, as often happens, the tampon fails to stimulate uterine contractions, and if, when the bleeding is from a lacerated cervix, the plug does not cause the torn artery to close by thrombosis, the gauze increases the danger, for it acts as a capillary drain and takes up much blood. As the tolerance of hemorrhage is very irregular in different subjects, and an apparently trifling loss will kill certain women, the best rule in flooding is not to allow one drop to be shed that can be saved. Gauze, above all if absorbent, takes up many drops of blood at least. Dr. Schaeffer uses non-absorbent gauze, prepared by impregnating it with gutta percha. It may be mixed with iodoform or airol. By rolling it up into a small ball, it can be passed into the uterus, which it distends without absorbing any more blood. The gutta-percha gauze retains its elasticity, and hence Schaeffer finds it useful in inducing abortion.

Surgical Suggestions.

Tuberculosis of the Superficial Lymphatic Glands.—Dr. Willard (*Annals of Surgery*, vol. xxiv., No. 6) concludes with the following suggestions: 1. Tuberculous infection of superficial glands usually occurs from insignificant wounds, and is most common in the lymphatics of the neck. 2. Infected glands are a constant menace to the system and should be removed. 3. Great caution is necessary in operating on the deeper structures, to prevent injury of vessels or nerves. 4. Excision should be thorough, and repeated operations, if required, are advisable. 5. Improved hygiene, air, and food are essential, in both operative and non-operative cases.

Ununited Fractures: Their Cause and Treatment.—Dr. Patton (*The Hospital*, January 2, 1897) says the causes of non-union are to be classified as general and local. Of the former any acute or wasting diseases, such as syphilis, scurvy, etc., have been held responsible; but it is doubtful to what extent they act and they are certainly of much less moment than the local causes, which are as follows: 1. Wide separation of the fragments, and consequently want of proper apposition; a common example of this occurs in the ordinary transverse fracture of the patella, or fracture of the olecranon, which always unite by fibrous tissue only; (2) interposition of some foreign body between the fragments, such as a piece of muscle or tendon, part of the capsule of a joint, or, in fracture of the lower jaw, a loosened tooth, etc.; (3) imperfect treatment, when sufficient rest is not obtained. This is well seen in cases in which fractures have occurred far from skilled advice and treatment—for example, in sailors at sea. It may, however, occur when splints have been used without properly fixing the fragments, by including the joints above and below the injury, or possibly the circulation may have been interfered with by improper bandaging, but this seems very unlikely, without producing serious damage to soft parts as well. Imperfect fixation is especially likely to occur in oblique fractures of the tibia, the obliquity not only permitting but also aiding in a sliding movement of one fragment on the other, often not easy to prevent; (4) lastly may be grouped together such troubles as possible injury to the blood or nerve supply of the bone at the site of the original accident, disease of the broken ends, such as necrosis, either from constitutional causes or the severity of the injury, or in a compound fracture from extensive suppuration, etc.

Post-Partum Hemorrhage.—Dr. Griffeth, in discussing an article which appeared in *The Hospital Nursing Mirror*, November 28, 1896, concerning the advantages of compressing the aorta, writes as follows: "I used always to be extremely anxious when such cases occurred, or when I was called to them occurring in the hands of others. But having for years practised only this method of treatment in even the very worst cases, and having never, even in one instance, had it fail, I now never think of adopting any other plan. It may be practised at once on the very first appearance of loss at the same time that the uterus is compressed. I have never known it to fail, even in the very worst instances, and, as a rule, the hemorrhage is immediately checked, and quite stopped in fifteen or twenty minutes; nor have I ever after the lapse of half an hour known it to return, though continuous compression had not been kept up that length of time."

Treatment of Retrodeviations of the Uterus.—In simple, uncomplicated retrodeviations, producing symptoms, pessaries should first be employed, to be fol-

lowed, in the event of failure, by Alexander's operation. In movable retrodeviations with healthy appendages but complicated by mild subinvolution endometritis and metritis, Alexander's operation, preceded by curettage, is indicated (curettage and pessaries may cure a limited number of this class). In cases complicated by marked subinvolution endometritis and metritis, or by tubal or ovarian disease, or by adhesions, hysterorrhaphy preceded by curettage is the only method permissible.—Smith, *The Journal of the American Medical Association.*

To Fenestrate a Plaster Splint.—My method is to insert a chip ointment box or other similar article a little larger than the ulcer or wound directly over the affected surface, and with a strip of bandage encircle the limb and box so that the ends of the bandages can overlap and be pinned over the box. Having applied the flannel roller or wadding, I apply the plaster-of-Paris bandages in the ordinary way to the limb, fitting as closely as possible round the sides of the box. When the plaster has hardened I take the pin out of the piece of bandage which kept the box in position, undo the ends and lift up the box, and the ulcer is exposed ready for whatever dressing is required. The rest of the limb is properly encased.—Esler, *British Medical Journal.*

Excision of Testicle.—There is one operation, however, in which I sometimes revert to the old Spence dressing, viz., excision of the testicle. Professor Spence treated this operation wound in much the same way as an amputation. The silk ligatures, which were of course numerous, were brought out at the lower end of the wound, and made an admirable drain. I have often seen in the old days such a wound healed by first intention, all but the point at which the ligatures were hanging out. In my practice, instead of the silk ligatures, I have a strip of iodoform gauze, which can be removed in a day or two.—Miller.

Epithelioma of the Face.—Dr. du Castel has for the last two years treated systematically at a hospital a number of cases of epithelioma according to Darier's method, without occasioning any inconvenience to the patients. This method consists in applying every third day a solution composed of methylene violet, twenty grains, and a drachm each of alcohol and glycerin to the diseased part, and after this treatment a solution of chromic acid (1–5) is substituted for a few days, when a return is made to the methylene violet. The treatment yields the best results when the disease is superficial. When the parts are covered with vegetations the latter should be scraped off to insure penetration of the drug. Collodion is painted on after each application of the drug.—*Medical Press and Circular*, No. 3,003.

Pelvic Pain.—In a paper on dysmenorrhœa, in the *Maritime Medical News*, Dr. Webster says the following points should be remembered: 1. The pain may be directly due to distinct pelvic lesions, sufficient in themselves to produce this symptom. 2. Pain may exist with minor degrees of pelvic trouble, insufficient in themselves to cause more than a small amount of suffering. 3. Pain may be a pelvic symptom in association with some condition which in itself cannot directly produce this symptom. 4. It may be a prominent symptom in cases in which no local changes of any kind can be made out.

Traumatic Hæmarthrosis of the Knee-Joint.—Dr. O'Connor (*New York Medical Journal*, vol. lxiv., No. 21) thus concludes an article on this subject: 1. In cases of effusion into the knee-joint, an aspirating needle should be introduced in order to arrive at a correct diagnosis. 2. If blood is present, an incision should immediately be made into the synovial pouch, and every particle of blood and clot removed; in case of fracture into the joint, the fragments should be examined, and if necessary reduced and fixed. 3. A gauze drain should be inserted for a few days in order to make certain that no further reaccumulation shall take place, and when it is evident that there is no further danger of this occurring the external wound should be closed by "waiting" sutures. When union is sufficiently firm, active movement should be encouraged, and when this can be painlessly executed, then, and then only, is massage a most useful adjunct in restoring the muscles to their normal condition.

Operative Treatment of Urinary Fistula in the Female.—Dr. S. Broido (*Gazette des Hôpitaux*, September 1, 1896) bases the method that he advocates on the two following principles: 1. That the amount of tissue at the site of the fistula is the same after operation as before. 2. That the denuded surfaces are approximated without undue tension upon the edges, and that they are identical anatomically. The method is as follows: The vaginal tissue is elevated at one point with a tenaculum and denuded transversely. Starting at the lower border of the incision, the mucous membrane should be separated along the entire length of the vesico-vaginal septum; the same should be done at the upper border of the incision. Sometimes it is better to construct the upper portion with the aid of a second incision perpendicular to the first, forming two triangular areas with the superior border of the fistula to the division of the septum. These areas should be sutured longitudinally. It is occasionally preferable to form a single quadrilateral denudation superiorly by two ascending incisions which pass transversely. In cases complicated by prolapse of the bladder, if there is difficulty in bringing the edges of the fistula together, it is well to take advantage of the laxness of the bladder walls and to separate the vesical tissue around the edges of the fistulous tract. The sutures are divided into two groups: the vesical, which should be of catgut because they are deep; and the vaginal, which should be of silk because they are more superficial. After the sutures are tied, the bladder should be filled with some fluid, and if any leak is detected more sutures should be put in. The patient is not to be catheterized after the operation.

Antiseptic Value of Iodoform.—Dr. Lombry (*Gaz. Heb.*, No. 7) gives the following as the antiseptic value of iodoform. 1. If in a dog or rabbit wounds infected with cultures of streptococci or staphylococci are powdered over with iodoform they present a better aspect, secrete less, and cicatrize more rapidly than similarly infected wounds left without dressing. 2. The antiseptic action of iodoform is manifest on condition that the experiments are made with culture media dissolving iodoform. 3. Iodoform weakens the virulence of staphylococci and streptococci. It neutralizes or destroys the microbic toxins, but without the neutralization of them or of the bacteria being complete. Instead of having an injurious influence upon the movements and phagocytic properties of the leucocytes, it seems to excite the activity of the latter.

Heredity in Cancer.—Manichon (*Journal de Médecine*) discusses this question, basing his remarks upon his observation of twenty-three families, in which several members were affected. There were 69 cases of cancer in these 23 families, distributed as follows: 57 of the stomach, 4 of the uterus, 3 of the breast, 3 of the rectum, 1 of the bladder, 1 of the liver. Of the 57 instances of the disease occurring in the stomach, 41 were in males, 16 in females. In 11 families the heredity was exclusively in the male line, in 5 in the female; in 6 families both sexes were equally affected.

Out of 22 families 14 showed cancer in the stomach, and of these the males were affected in 8. According to this author, heredity in cancer is no longer doubtful, and he also points out that the special form of cancer is itself hereditary.

Prostatic Disease.—Dr. Dowd, in an article published in the *Buffalo Medical Journal*, February, 1897, says: "Prostatic disease in old men is readily recognized on account of the interference with urination. On the other hand, when occurring in young or middle-aged, it is, in my opinion, rarely recognized, and simply because, instead of abnormal urination, the symptoms are mostly confined to the sexual function, urethral discharge, and pronounced neurasthenia. The function of the prostate, as you all know, is to secrete a fluid for dilution of the semen, it also helping to fill the posterior urethra, thus causing contraction of the perineal muscles, aiding in its ready expulsion. The secretion is slightly acid in reaction. There is one more important use of this fluid, which brings it forward as part of the sexual apparatus. The spermatozoa, until they become mixed with the prostatic fluid, are motionless. This has been demonstrated by Fürbringer, and I have proved the above to be true many times."

To Prevent Hemorrhage.—Dr. Watson Cheyne (*Lancet*), having read Dr. Wright's papers on the value of chloride of calcium in increasing the coagulability of the blood and also of fibrin ferment as a styptic, invited him to superintend the use of these substances during an operation that promised to be very bloody. An hour before the operation a pint of water containing one-half ounce of chloride of calcium was injected into the rectum, and during the operation pledgets of salicylic wool, soaked in Wright's fibrin-ferment solution, were applied to the freshly cut surface. Whether due to this treatment or not, the fact remains that not more than one ounce or one and one-half ounces of blood were lost.

Suppuration of Stitches.—Some writers explain the suppuration of stitches in carefully performed operations by the presence of pathogenic micro-organisms, normally in the underlying layers of the derma, which cause suppuration when exposed to the air. Remlinger states that most of the micro-organisms found in the blood drawn from the fingers come from the lower layers of the skin. We know that flora of the superficial layers is extensive, but he announces that he has found staphylococcus albus twenty-three times, aureus eleven times, and citreus fourteen times, the streptococcus pyogenes eight times, and the coli bacillus five times, in his experiments with blood taken with a sterilized needle from the deeper layers of the skin of fifty healthy men. To avoid error, the needle should not only be sterilized, but should be inserted while red hot. Dr. E. Blondel (*Journal de Méd. de Paris*) says that surgeons might make their incisions with the thermo-cautery, but the same effect can be secured by disinfecting each stitch with alcohol. Dr. Blondel has revived the practice taught by Theodoric and Mondeville, of bathing the wound with wine, and he has invariable success. In total perineorrhaphy, which is so difficult to perform with perfect asepsis, he has secured results far surpassing any previous achievement. He makes as few stitches as possible in the deeper layers, and wets them and the edges of the wound with ninety-per-cent. alcohol, and sponges the tissues with a cotton pad dipped in it. The final suture is sponged with strong alcohol and then dusted with iodoform or equal parts of dermatol and aristol, repeated every second day afterward. Alcohol dries the surface better than any other substance. It has a coagulating effect on the serum, and thus favors cicatrization.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

PARLIAMENT—CARDIAC THROMBUS—DISSECTING ANEURISM OF AORTA — LIGATURING CAROTIDS FOR PHARYNGEAL ABSCESS—IRREDUCIBLE HERNIA—DEATHS OF PROFESSOR CHARTERIS, DR. LAW, DR. GOVER.

London, June 11, 1897.

The report of the departmental committee on dangerous trades (anthrax, etc.) has been presented to both houses of Parliament.

In the Commons the Scotch public-health bill has been reported, with amendments by the law committee. This bill has excited much interest in consequence of an attempt to place sanitary inspectors on a level with medical officers of health—a proposal which is being resisted to the utmost.

A bill to provide calf lymph under government control has been introduced.

The return relating to experiments on living animals in England and Scotland has been circulated.

At the last Clinical Society meeting, Dr. W. Ewart and Dr. H. D. Rolleston gave an account of a case in which a large ante-mortem thrombus was attached to the fossa ovalis in the left auricle, passing through the mitral valve, which was not contracted, into the left ventricle. The patient, a woman of forty-three, after some acute chest trouble, probably pleuro-pneumonia, had the precise symptoms and signs of mitral stenosis with failure of compensation. She ultimately died rather suddenly with symptoms of pulmonary apoplexy. At the post-mortem the viscera showed the usual changes met with in cases of advanced mitral disease, beside which a firm, smooth, dark, hourglass-shaped thrombus was found firmly attached to the lower posterior part of the foramen ovale, passing into the left ventricle, with a constriction at the mitral orifice, which was otherwise healthy. There were no adhesions between the flaps of the valve and the thrombus. Examination of the thrombus showed that it was old internally, and that recent clot had been added to it lately; there was no actual disease of the mitral cusps.

Dr. Kingston Fowler referred to a very similar case formerly under his care, reported by Dr. Voelcher in the Transactions of the Pathological Society, 1893. When found in the auricle clots usually arise between the strands of the musculi pectinati; in the ventricle, between the chordæ tendineæ. In the early stage the central part probably underwent softening, and the cardiac contractions made the clots project as polypi.

Dr. Bertram Hunt then related a case of extensive dissecting aneurisms of the aorta in a woman aged forty-three. While under observation a left-sided hæmothorax developed, and thirty-three ounces of blood were removed by aspiration. A murmur was then heard over the spine. The patient remained in fair health for nine months, when she died suddenly. At the post-mortem a large dissecting aneurism was found, which commenced by an orifice in the inner coat of the aorta just below the origin of the left subclavian artery and opened again into the left common iliac artery. Death was due to leakage into the right lung and pleural cavity. The site of the old leak into the left pleura was closed by adhesions.

Dr. De Havilland Hall said that in his experience, when a large aneurism opened into a serous cavity, there was usually a large sudden escape of blood, whereas when the aneurism ruptured on to a mucous surface the opening was valvular and blood escaped slowly.

Dr. Rolleston referred to two cases of hemorrhage

from the aorta into the pericardium, in which leakage occurred slowly in one, the pericardium was distended with signs of pericarditis, and there was a leakage from an aortic aneurism. In the other there was a very minute opening into the pericardium, which, however, contained twenty-five ounces of fluid. He remembered one case in which Dr. Dickinson diagnosed a dissecting aneurism during life, from the very acute pain which radiated along the arteries in both arms and legs.

Dr. Ewart agreed that gradual leakage sometimes occurred in cases of rupture of an intrapericardial aneurism.

In addition to his paper before the Medico-Chirurgical Society, reported in my last, Mr. Clutton read an account of a case of pharyngeal abscess followed by very severe hemorrhage from an abscess in the roof of the pharynx above the right tonsil, which was eventually successfully arrested by the ligature of the common external and internal carotid arteries. The abscess cavity was at first plugged with cyanide gauze, as it was thought the bleeding might be from the internal jugular vein; but later it was clearly from a large artery, probably the internal carotid. The bifurcation of the common carotid on the right side was exposed, and a goldbeater's skin ligature applied by means of a "stayknot" to the common carotid and its two branches. Considering the difficulties in determining the exact source of hemorrhage when it occurred from a pharyngeal abscess, Mr. Clutton believed it to be the safest practice to tie both the external and internal carotid arteries, as well as the common carotid, for all three arteries were reached through the same incision at the bifurcation. The necessity for tying two of them had been shown by Mr. Pitts' paper in the St. Thomas' Hospital Reports, vol. xii., and the addition of the third scarcely increased the length of the operation. Mr. Pitts referred to a case in which ligature of the common carotid artery was hastily performed, and twenty-four hours later profuse hemorrhage recurred and proved rapidly fatal. The source of hemorrhage had proved to be the internal carotid, and he had been led from his experience in this case to insist on the ligature of at least the common and external carotid arteries in such a case.

Mr. Harrison Cripps had collected sixty-eight cases of ligature of the common carotid, and had been struck with the high mortality, largely from brain symptoms, occurring immediately or in a few days, or from secondary hemorrhage; so that ligature of the common carotid was a very formidable operation. Out of all the cases there was clear evidence only in one that the internal carotid was the source of the hemorrhage, and when that occurred death would probably take place at once, so that the question of operation did not arise. He thought that in most cases ligature of the external arotid would suffice, and was much less dangerous than ligature of the common trunk.

Mr. Warrington Haward read a paper on "Irreducible Hernia," based upon an analysis of eighty-five cases in which an operation was performed for irreducible hernia. His conclusions were: 1. Irreducible hernia is a condition of serious danger, the gravity of which increases with its duration or neglect. 2. The application of a truss upon an irreducible hernia is not only useless but harmful. 3. Irreducible herniæ which consist wholly or in part of bowel are very apt to become strangulated. 4. Herniæ consisting wholly of bowel, upon which no truss has been worn, may (even when of large size and of considerable duration) generally be returned by appropriate treatment. 5. Of the cases of hernia in which proper treatment fails to obtain reduction, the great majority are irreducible because of adhesions of or changes in the protruded viscera—conditions which are remediable only by operation. 6. The most common cause of irreducibility is the presence in the sac of adherent omentum. 7. The presence of irreducible omentum in the sac of a hernia is a source of constant danger, which can, nevertheless, be remedied by an operation of extremely small risk. 8. Herniæ containing irreducible bowel are more dangerous than those containing only omentum, and as the danger of operation increases with the magnitude of the hernia and with the occurrence of adhesions, these herniæ should be operated upon as soon as they are proved by the failure of proper treatment to be irreducible.

Mr. A. E. Barker indorsed all the conclusions at which Mr. Haward had arrived; but Mr. Macready made light of the pressure of a truss causing adhesions; on the contrary, he held that it favored the absorption of adhesions.

Professor Charteris, of Glasgow, died on Monday, at Comrie, Perthshire. He had gone there to recuperate after influenza. His health had been failing for some time, and he was unable to give his course on materia medica and therapeutics this session. His "Student's Guide to the Practice of Medicine" is probably well known to you. His contributions included important researches on the salicylates and on carbolic acid. His recommendation of chlorobrom in seasickness excited a good deal of attention some three years ago. He was also the author of a work on health resorts, and wrote the article on that subject in Quain's Dictionary.

Dr. Joseph Law, consulting physician to the Sheffield Royal Infirmary, with which hospital he was connected over fifty years, died on the 1st inst., at the age of ninety.

Dr. R. M. Gover, late Her Majesty's inspector of prisons, died on the 5th. He retired on account of failing health last December. He was a valuable officer, and his reports contain important observations and suggestions. His consideration for others secured him the esteem and regard of the staff of the prisons.

"CRIMINAL ABORTION."

To the Editor of the Medical Record.

Sir: In your issue of May 22d, Dr. T. F. Connelly criticises Dr. H. P. Beirne's article on "Criminal Abortion." No doubt in the rural districts most women are lacking in the knowledge of how to procure an abortion. Unfortunately it is too true that in the cities abortions are performed scientifically by a large number of women without any aid from a physician. Scores of women are able to find the "mouth of the womb" with greater facility than a recent graduate, and have no difficulty in passing a catheter into the uterus. Most American wives look on pregnancy as a domestic calamity, and no amount of advice on the enormity of the sin or on their responsibility to Almighty God will deter them from what they believe to be the exercise of woman's rights. Why is it that more children are born of foreign-born mothers than of American-born women? How is it that the average American family consists of two or three children? It is not until the foreign-born woman is initiated into the art of murdering her offspring that she ceases to populate the country. I know one woman who can procure an abortion by packing her vagina with warm, moist, fine-cut chewing tobacco and squatting over a vessel containing hot water. There is no crime so base, nor any which so cries to heaven for vengeance, as the murder of the innocents. It is possible to make atonement for other crimes, but for murder restitution is impossible.

E. T. Milligan, M.D.

Detroit, Mich.

To the Editor of the Medical Record.

Sir: I beg leave to differ from Dr. Conolly, who takes the position in your issue of May 22d that women practically never produce abortion upon themselves either with medicines or instruments, for the simple reason that they cannot. My experience teaches me that women do know how to produce abortions upon themselves, both by instruments introduced into the uterus and by taking violent medicines internally; and that in cases too numerous to mention they resort to these criminal practices, with dire results many times. Of course it cannot be denied that most produced abortions are brought about by unscrupulous people who have had some medical training; still we ought not to be blind to the great harm done by women upon themselves, and one woman can spoil a good many others in her vicinity.

W. O. Henry, M.D.,

Omaha, Neb.

"DON'T TRUST YOURSELF IN THE HANDS OF THOSE COUNTRY DOCTORS."

To the Editor of the Medical Record.

Sir: A few months ago I was called to see a patient, thirty-eight years of age, who was nearly bedridden as the result of spinal neurasthenia and a typical retroflexion of the uterus. The patient had previously undergone four months' treatment in a sanatorium, at a cost of several hundred dollars. The only thing that had been done for her was to subject her to electrolysis according to Apostoli's method, and return her to her friends with the assurance that her case was practically cured, and that a few weeks would suffice fully to restore her strength and convince them of the great value of the treatment to which she had been subjected.

The physician who had charge of this case is a gynæcologist of national repute, and as a part of his final advice to the patient, he said: "Don't trust yourself in the hands of those country doctors. If you do not progress satisfactorily, write me and I will advise what course to pursue," etc.

The patient and friends waited very patiently for the improvement which never came, and after a few weeks one of those maligned "country doctors" saw her and on examination found that she still retained the retroflexion in its original form and the neurasthenia was worse, if anything, than before she had undergone treatment. Sequelæ: Eminent specialist, richer in fees but with the loss of some reputation, drops out. Patient, rich in experience but poorer in purse, at the instance of a "country doctor" submits to operation and is relieved of the retroflexion and under rest and appropriate treatment is slowly regaining the lost nerve tone.

Instances without number could be cited to show the aggressive tendencies of the physicians in our cities toward "the ignorant and benighted country practitioner," as the urban physician is prone to call his country brother; but the one given will suffice as a good illustration of the fallacy of the position which the physicians of the city have assumed toward their fellows in the rural districts. That the attitude of the former is based upon a fancied rather than an actual superiority, is apparent to those members of our profession who have had a wide experience in both city and country practice, and who in consequence of such experience are best qualified to pass upon the merits of the two classes mentioned. Such judges as these invariably tell us that the country physicians have as a rule better professional attainments than those of the city, and that it is only a few of the many who reside in the city that can claim with any show of justice their right to superior professional attainment.

The country physician who rode several miles upon a dark night to a patient suffering from strangulated hernia, which he relieved by cutting with the meagre instruments from his pocket case, and saved his patient, is a hero when compared with the mediocre city physician who lost a similar case through lack of skill and promptness of action, and the delay occasioned by the calling in of one who was qualified to operate.

The country physician is too apt to entertain invidious feelings toward his fellow competitor, but toward his city brother he evinces feelings of respect which too many times is very poorly reciprocated. Neither is the country physician resentful, as much as he should be, of the aggressive and intrusive tendencies on the part of his urban neighbor. Too often the latter when meeting the former assumes a kind of dictatorship in affairs; and this happens many times, too, when the true situation has not been grasped by the would-be dictator, who more than occasionally fails to discover the real condition of the patient, notwithstanding his self-assumed and erudite air of superiority.

Again it is quite a common practice with city physicians to fill their *clientèle* who spend their summers in the country with the idea embodied in the above title: "Don't trust yourself in the hands of those country doctors." This they do ostensibly for the welfare of those under their charge, but in reality the true motive is to maintain their hold upon their patrons even while absent on their vacations. How to overcome the distrust thus created in a patient may be a difficult problem. The proper way is for the country doctor to maintain his dignity and self-possession, and to act with promptitude. He can be kind yet firm, and withal he should insist upon his plan of treatment being faithfully carried out without undue deference to the notions that the patient or his friends may have respecting the treatment. If the family doctor from the city is called into the case, meet him courteously and in a strictly ethical way. If he is obtrusive and tries to create distrust in you, insist upon your rights, and if you cannot obtain them withdraw from the case. If the country doctor would follow this advice, the evil complained of would soon be a thing of the past.

There is no good reason why the city physician should be aggressively inclined toward his fellow practitioner in the country, and he will not exhibit his aggressive tendencies if the latter exacts a respectful consideration of his rights and privileges.

In conclusion I have to say, let it be known that in the country many "a practitioner of the old school" still lives and is as worthy of praise and honor as in days of yore, and respect and proper recognition will not be withheld from him even by our city brethren.

A. Llewellyn Hall, M.D.

Fair Haven, N. Y., June 5, 1897.

MILK CONTAMINATION.

To the Editor of the Medical Record.

Sir: The great importance of a pure milk supply to a great city like this needs no comment. Much has been said by physicians and not a little has been done by the authorities toward insuring consumers a proper quality of milk. Tuberculous cows are now pretty generally discovered and destroyed. I wish to call attention briefly to a possible source of tuberculous as well as other contamination which should be corrected. I refer to the danger from infected milk bottles. Every physician of wide experience in this city must have had it happen in his practice, as it has happened in mine many times, and always with protest, that patients bring urine, pathological specimens, and sputum in milk and especially in cream bottles. The order given

to procure a wide-mouthed bottle seems to suggest at once to a certain class of patients that it is better and cheaper to take one belonging to the milkman than to buy one at the drugstore. The physician cannot make sure that the bottle is destroyed, there is always a possibility of its finding its way back into some milk dealer's hands, and the public has no assurance that his methods of cleansing and sterilization are perfect and reliable. A law is called

for to prevent the use of beer, wine, or milk bottles which can by any possibility be used again for food or drink-holding purposes from being used in any such way. The above cut, showing a fœtus mummy in the bottom of a cream jar recently brought to my office, illustrates the points I have tried to make. Fancy the unappetizing effect of consuming milk from such a bottle as this and finding a dried fœtus as a sediment.

CHARLES W. ALLEN, M.D.

126 EAST SIXTIETH STREET,
May 27, 1897.

Therapeutic Hints.

Roentgen Rays were utilized by Dr. Leopold Freund to destroy a hairy nævus occupying the neck, shoulders, and lateral portions of the thorax in a young boy. Kaposi thought that when the nutrition disturbances which had been set up had disappeared, the hairs might grow again.

[In all instances of accidental alopecia caused by the *x*-rays so far reported, the hair has shown a tendency to grow again, and for this reason in a recent editorial we ventured the opinion that the rays could not be successfully employed for purposes of epilation.—ED.]

Gargle in scarlet fever, measles, etc. The following is useful in the subacute inflammatory affections occurring during the course of the exanthemata:

℞ Acidi acetici	ʒ ij.
Glycerini	ʒ i.
Aquæ	ad ʒ viij.

Burow's Liquid, prepared according to his own formula, calls for:

1. ℞ Plumbi acet. cryst.	100
Aq. distil	300
2. ℞ Alum	66
Sod. sulphat.	12
Aq. dest	500

Mix the two solutions cold, and let stand for two days at a temperature less than 10° C. Filter without washing the precipitate. There should then be no trace of lead in the solution, which can be applied to extensive raw surfaces without the danger of lead poisoning, which is not the case when the solution is improperly prepared.—*Le Scalpel.*

The Treatment of Syphilis by Intravenous Injections of Mercury.—Dr. Ernest Lane (*British Medical Journal*, December 12, 1896) summarizes the advantages of this method of treatment as follows: 1. The injections are absolutely painless, which is an advantage over the intramuscular method. 2. The functions of the digestive tract are not interfered with. 3. The doses of the mercurial salt, being small, can be easily regulated to suit the varying susceptibility of different individuals. 4. With ordinary precautions the treatment is perfectly safe; even if the vein is missed, little or no inconvenience is felt. 5. The resulting improvement is certain and rapid, and consequently the method seems to be indicated in cases of cerebral syphilis. Dr. Lane is not able to say whether or not this treatment is followed by relapse. The only real difficulty is the trouble experienced in some instances of bringing the veins into sufficient prominence. This is an insuperable obstacle; still he thinks that in intravenous injections we have a valuable addition to our means of applying antisyphilitic therapeutical agents, though one he cannot recommend as a routine practice.

The Administration of Quinine to Children.—1. Quinine pearls, gelatine capsules containing one and one-half grains, are taken readily by children over three years of age, while younger children can be taught to swallow them. 2. Quinine chocolate, each piece containing one and one-half grains, the bitter taste so well covered that infants of nine months take them, and they do not produce gastric disturbance. 3. Suppositories made of cacao butter, and containing various doses up to seven and one-half grains. 4. A hypodermic solution of one part of hydrochlorate of quinine in four parts of water. With proper precautions the injections are not followed by abscesses, and are found valuable in cases of whooping-cough in which quinine could not be tolerated by the mouth. 5. Quinine may be given in enema; the quantity of solution used should not exceed one ounce. 6. Tannate of quinine, which in powder is almost tasteless, is a fairly satisfactory substitute for other preparations, but the dose given must be double that of the sulphate, and the effect is not produced so rapidly nor so certainly.—BINZ, *Deut. med. Woch.*

Treatment of Eclampsia.—Dr. Charpentier believes he is authorized to submit the following as the conclusions of his investigation of the subject: 1. Every pregnant woman with albumin in her urine being exposed to attacks of eclampsia, the milk diet giving splendid results against the albuminuria, and in particular that met with in pregnancy, the urine of pregnant women should be examined with the greatest care, and, if albumin is found, no matter how small it may be in quantity, an absolute and exclusive milk diet should be instituted. This is the preventive treatment *par excellence* of eclampsia. In cases in which œdema is present without albuminuria, it is well, if not an absolute necessity, to prescribe the milk diet. 2. Every time we find ourselves in presence of an eclampsia, begin, if the patient is strong and vigorous and if cyanosis is present, by a bleeding of from two hundred to three hundred grams, and then give chloral; give milk by the mouth and, if necessary, through a sound. 3. Combat the attacks themselves by inhalations of chloroform and favor diuresis by subcutaneous injections of artificial serum. 4. If the woman is delicate, the cyanosis is not very marked, the attacks are not very frequent, chloral should alone be given. 5. Wait until the labor occurs spontaneously

and allow it to end without intervention whenever this is possible. 6. If labor comes on spontaneously, but does not end, because the uterine contractions are too feeble or too slow, end the labor by the application of the forceps or a version, followed by extraction, if the child is living, or by a cephalotripsy, basiatripsy, or cranioclasy, if the child is dead. 7. Before an intervention wait until there is complete dilatation, or at least a dilatability of the cervix, in order that the operation may be done without violence, and consequently without danger for the mother. 8. Reserve induced labor for a few exceptional cases. 9. Reject, absolutely reject the Cæsarean operation and *accouchement forcé* as current methods in the treatment of eclampsia.—*Annals of Gynæc. and Pæd.*, January, 1897.

New Instruments.

A NEW ELECTRIC HEATING PAD.

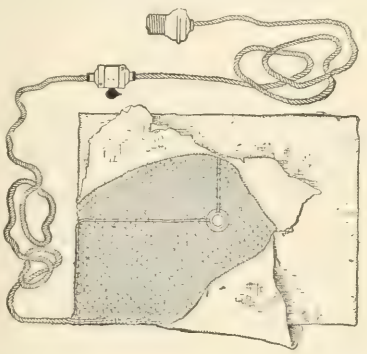
One of the facts early noticed in electrical experimentation was the heating effect produced by the passage of a current through a wire. This manifestation has since been utilized in many practical forms, among the most familiar of which, hailed in times past as most useful discoveries, are the heating to incandescence of the filament in the incandescent lamp, the localization and control of the required temperature of the wire in the cauterizer, and the production of useful heating apparatuses. When used for cooking the extreme effects of the current are neither expected nor required, the purpose being economically to utilize the heating effect in the production of temperatures within given limits and always under control. The modern physician, with his battery and electro-medical cabinet, undoubtedly stands nearest to the professed electrician in his knowledge of the behavior and effects of electricity. It is not surprising, therefore, that he should be among the first to appreciate the improvements being made from time to time in apparatuses which claim his interest as offering some new means whereby improved results may be obtained by the applications of simpler methods. This last remark is made with more especial reference to the adoption by physicians of the electric heating pad, which promises to occupy as secure a position among his modern appliances as the cauterizer or ozone generator.

The electric heating pad offers advantages and benefits not readily obtainable with the hot-water bottle and similar means for making local applications of heat. The proper management of the hot-water bottle requires a watchful care and frequent renewals to obtain the desired effect, and necessitates repeated agitation of the patient and periodical extremes of temperature with the risk of exposure incidental to the constant changes; or, as in hospital practice, it involves elaborate and bulky circulating apparatus, both troublesome and expensive. The facility with which connections may be made with the electric current, and the simplicity and utility of the heating pad as a practical substitute for cruder methods, have already led to its adoption in various institutions and in household practice.

Unlike hot-water applications, which cool rapidly, the electric heating pad receives a constant and uniform supply of heat; and by simple means it is possible to maintain or regulate the temperature as may be desired without unnecessary disturbance of the patient. The electrical method offers a further advantage in that the temperature may be raised gently and the patient spared the discomfort and the shock of the sudden application of the hot-water bag at its highest temperature. The gradually increasing temperature of the pad, or its prolonged application at a fixed temperature, also assures the deeper penetration of the heat and the attainment of more thorough therapeutic effects. In pneumonia, cramp, rheumatism, and other cases in which the maintenance of a suitable temperature may be of vital necessity, it is apparent that any means, which, with corresponding advantages, would prolong a given temperature indefinitely, must be of the highest value. In the treatment of inflammatory affections of the pelvis, both acute and chronic, in peritonitis, and in ovarian neuralgia, the heating pad is likely to prove efficacious.

The weight of the water bottle not infrequently offers objections to its use in the treatment of diseases of the stomach, bowels, and other organs, when the parts are sensitive to compression.

The construction of the electric heating pad is illustrated herewith. The conductor forming the resistance or heating wire, is covered, and is thus thoroughly insulated and protected by asbestos. It is then woven into a cloth or pad about eleven by fifteen inches, and one-fourth of an inch thick. The arrangement of the circuits is such that by means of a simple



regulating switch, shown in the lamp cord, three degrees of heat may be obtained by manipulating the key. The cord attached to the pad is provided at its end with a connecting plug for attachment to the ordinary incandescent lamp or wall socket. The full amount of electric energy required to heat the pad is the same as that for a sixteen-candle-power lamp, namely, about $\frac{6}{10}$ of an ampere on a 110 volt circuit. The regulator is marked with the four positions of the key, 0, 1, 2, 3. At 0 the current is turned off; at 1 about $\frac{2}{10}$ of an ampere will flow; at 2, $\frac{4}{10}$; and at 3, $\frac{6}{10}$. To heat the pad quickly, the key is first turned to 3. The pad will soon attain a working temperature, and its subsequent behavior may be readily regulated to any degree by turning the key in the switch to 2, to 1, or to 0, as may be necessary, or by the judicious arrangement of coverings.

The effect of the latter upon the rapidity and intensity of the heating will be apparent. The pad receives a constant supply of heat from the electric source. If this heat be permitted to escape by freely exposing the surfaces of the pad to the air, no great effect will be apparent in the pad itself—in other words, it will not get hot. If, however, the pad be confined between coverings of any description, whether it be blankets or the human body, so as to prevent the escape of the heat, the latter, being supplied constantly, will accumulate until a temperature is attained which may be excessive for therapeutic purposes; and, were it not for automatic means of control within the pad itself, there would be the ultimate risk of the temperature

becoming unnecessarily severe for both the patient and his surroundings. By the introduction, however, of the thermostat or temperature regulator, shown in the shape of a button situated in the centre of the pad, any such danger is practically obviated.

When applied to the skin, 213° F. is an unendurable temperature; and it is not to be taken for granted that in the form of a heating pad such a temperature is recommended or is desirable for ordinary applications. But, to meet average conditions, the setting of the thermostat at such a limit—the thermostat is to be regarded always as a safety valve—has been found to furnish temperatures suitable and convenient for the usual applications. The exposure of the heating pad, whether altogether or in part, is so influential in determining the ultimate temperature under a given set of conditions, that if the thermostat be caused to work—that is, to limit the heating, say, to 165° F.—there is an immediate complaint from the average user that the pad does not get hot enough. It would appear perfectly practicable to construct the heating pad for special conditions and to render it of the greatest value in the treatment of numerous special cases.

The interposition of coverings between the body and the pad, whether they be used as a poultice, an embrocation, or shield, can modify temperature accordingly.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending June 26, 1897:

	Cases.	Deaths.
Tuberculosis	151	111
Typhoid fever	10	8
Scarlet fever	185	16
Cerebro-spinal meningitis	3	6
Measles	227	8
Diphtheria	265	27
Laryngeal diphtheria (croup)	9	9
Chicken-pox	13	9

At Home.—The Doctor—"Mrs. Brown has sent for me to go and see her boy, and I must go at once." His Wife—"What is the matter with the boy?" The Doctor—"I don't know; but Mrs. Brown has a book on 'What to Do Before the Doctor Comes,' and I must hurry up before she does it."

Thymic Asthma.—The diagnosis of this disease is usually made after the death of the patient. In the case of a child described recently, who suffered from intense dyspnœa, tracheotomy was performed without result, and it was decided that the cause must be some compression by a tumor or hypertrophied thymus gland. Extending the incision, the thymus gland was found extremely enlarged and was removed. At once the respiration became normal, and the child was completely cured. Siegel, who reports the case, suggests that it would be more appropriate to designate this trouble as thymic stenosis of the trachea or bronchi.

Another "Human Ostrich."—A Kansas city street fakir, whose special means of entertaining an intelligent public was to swallow any and everything, recently found his stomach becoming too full, and was obliged to have it opened. The surgeon who performed the operation removed, according to the newspaper report, the following articles: One four-bladed knife, one and one-half inches long; one two-bladed Barlow knife, four inches long; one knife blade, three and one-fourth inches long; one knife blade, three inches long; two knife blades, each two inches long; one knife blade, one inch long; thirty-two eight and ten penny fence nails and spikes; thirty-four sixpenny wire nails, sharp pointed; twenty-six shingle nails, each one inch long; sixteen carpet tacks and small wire nails, one horseshoe nail, three large screws, one barbed-wire staple, and three ounces of fine glass.

Vital Statistics of Philadelphia.—For the week ending June 19th, there occurred in the city of Philadelphia 394 deaths—11 more than during the preceding week, and 20 less than during the corresponding week of the previous year. Of this number, 162 occurred in children under the age of five years. The largest individual causes of death were as follows: Pulmonary tuberculosis, 45; pneumonia, 31; heart disease, 20; diphtheria and carcinoma, each 19. There were reported during the week 119 cases of diphtheria, 79 of scarlet fever, and 39 of typhoid fever, as compared with 96 of diphtheria, 124 of scarlet fever, and 74 of typhoid fever during the previous week.

The Specialist of To-day is essentially a self-made man, there being no method of insuring the possession of special skill nor any legal or professional restrictions upon any one who chooses to announce himself as a specialist. Thus, so far as a specialty is concerned, the physician at the present time is as free from college or society supervision and as innocent of a diploma as might have been the general practitioner of several centuries ago. Under these circumstances a man who calls himself a specialist cannot be considered as claiming superiority over his professional brethren, but merely as one who seeks to limit his practice from financial motives or because he is conscious of certain proclivities and interests.—*Medical and Surgical Reporter.*

Ricord used to say, concerning the preparations of gold that certain practitioners had substituted for mercury as specifics in syphilitic diseases, that, everything else being equal, they produced better results when administered by the patient to the doctor than by the physician to the patient.

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the United States Marine Hospital service, during the week ending June 26, 1897:

		Cases.	Deaths.
Small-Pox—United States.			
Memphis, Tenn.	May 1st to 31st	2	
" "	June 12th to 18th	5	
Pensacola, Fla.	June 12th to 18th	1 (varioloid).	
New York, N. Y.	June 12th to 18th	0	3
Gloucester, Mass.	June 12th to 18th	0	1
Cambridge, Mass.	June 12th to 18th	0	1
Brooklyn, N. Y.	June 12th to 18th	2	
Small-Pox Foreign.			
London, England	May 30th to June 5th	4	
Gibraltar	May 31st to June 6th	2	
St. Petersburg, Russia	May 30th to June 5th	14	2
Odessa, Russia	May 22d to June 5th	3	5
Moscow, Russia	May 15th to 22d	1	
Rio de Janeiro, Brazil	May 8th to 15th	2	
Havana, Cuba	June 10th to 17th	30	3
Sagua la Grande, Cuba	June 5th to 12th	80	
Warsaw, Russia	May 30th to June 5th	0	4
Alexandria, Egypt	May 14th to 20th	0	4
Cairo, Egypt	May 14th to 20th	0	3
Bombay, India	May 18th to 25th	0	2
Paris, France	May 31st to June 5th	0	1
Osaka-cum-Hiogo, Japan	May 1st to 22d	5	
Rio Grande do Sul, Brazil	March 27th to May 1st	6	4
Yokohama, Japan	May 1st to 8th	5	1
Vera Cruz, Mexico	June 3d to 11th	0	1
Madras, India	May 8th to 14th	0	4
Nagasaki, Japan	May 16th to 25th	24	12
Calcutta, India	May 8th to 15th	0	4
Cholera.			
Bombay, India	May 18th to 25th	0	4
Calcutta, India	May 8th to 15th	0	69
Yellow Fever.			
Rio de Janeiro, Brazil	May 8th to 15th	29	14
Havana, Cuba	June 10th to 17th	251	40
Sagua la Grande, Cuba	June 5th to 12th	24	
Cardenas, Cuba	June 5th to 12th	3	
Plague.			
Bombay, India	May 18th to 25th		56

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Original Articles.

THE APPENDIX IN THE INTERVAL.—A NEW METHOD OF STUDYING IT.

BY ROBERT ABBE, M.D.

WHEN a surgeon has removed an appendix in the interval between attacks, he usually studies it, either by immersing it in alcohol and submitting it to section after days of hardening, or he makes as careful an examination of the fresh specimen as he can by trying to pass a probe into it to detect stricture, or slicing it from end to end. Either method gives little or no idea of its pathological condition.

During the past few months I have adopted another method, which has revealed a most unexpected and perfect demonstration of the exact pathology of its diseased structure and which virtually shows the causes of appendicitis in its several varieties, and demonstrates to the eye that which gives an explanation of the clinical symptoms of chronic cases.

Within a few hours after removal the appendix should be distended with ninety-five-per-cent. alcohol, through a conical nozzle of a small syringe tied tightly into its cut end by a ligature, which is tightened as the syringe is withdrawn (Fig. 1). The distended organ is then immersed twenty-four hours or more in alcohol of the same strength. It is then ready for section. If it is sliced centrally from end to end, its interior will be a revelation to the surgeon. Whereas the outside may preserve the cylindrical form of a normal appendix, and may give little or no evidence of inflammation, the interior (if the patient has had one or more attacks) will show one or several of the following conditions. These are illustrated by the annexed cuts, selected from a considerable number of appendices removed by me during the past four months:

1st. A fæcal concretion blocking the canal (Figs. 2, 3, 4).

2d. Interior ulcerations (Figs. 5, 6, 7).

3d. Cicatricial strictures, often of pinhole aperture only (Figs. 8, 9, 10).

4th. Multiple strictures with intermediate pockets, containing suppurating and catarrhal products, and confined by greatly hypertrophied muscular and mucous coats (Fig. 11).

5th. Partial obliterating appendicitis (Fig. 12).

These five varieties are subject to infinite variations. Indeed, I find no two alike.

The condition resembles very much cicatricial strictures of the urethra in some cases. As far as my study goes, I am led to assign three distinct causes which may result in the obstruction which leads to ultimate gangrene, perforation, or rupture following distention:

First, a catarrhal inflammation alone may be followed by stricture, as in the urethra. This form has been distinctly classified by Dr. W. H. Draper as coincident with or a sequel of an attack of grippal influenza. In a paper read by him two years since, before the Practitioners' Society of New York, he ventured the explanation of a lurking remnant of influenza in the appendix, as a reasonable way of explaining the increase of appendicitis in recent years.

Second, a natural point of flexure in the appendix (due usually to an abbreviated point in its mesentery) leads to an arrest of its fæcal contents, which, being inspissated, grow into a concretion. In Fig. 2 this is well shown, and opposite to it a sacculation is commencing, which does not show on the outside, but which was ready to perforate at an early opportunity. This patient had been treated for a year for ovarian inflammation, the symptoms being due to the appendix, as shown by her normal ovary at operation.

Third, an otherwise healthy appendix may be the subject of circular ulceration, from no apparent cause other than probably microbic origin. These after healing are probably the cause of the sharp annular strictures so often seen.

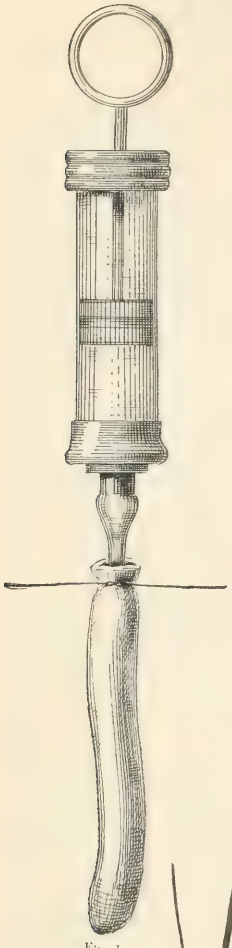
Doubtless many of the cases of spontaneous cure after frequent attacks pass into the stage represented in Fig. 11 (which I find quite common), in which an extreme proliferation of the mucous coat ultimately obliterates the canal—as in Fig. 12. But the patient runs the gantlet of many attacks in which distention of the intermediate pockets may and often does cause fatal results.

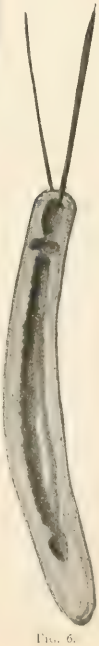
The final obliteration of the canal, moreover, does not always rid the patient of pain. The lady from whom the specimen shown in Fig. 12 was removed had for more than a year been disabled from household duties by appendical pain, yet I found merely this little atrophic organ—which evidently in its cicatrization must have included nerve filaments which disturbed her whole system.

In another case—that of a child aged eleven, whose appendix was almost the counterpart of the one shown in Fig. 11—only one distinct attack of appendicitis had ever been known, and that occurred two weeks prior to operation; but it was evident that perhaps years had been required to produce the chronic changes shown—and this disturbing organ, unrecognized, might well have been the cause of the very puny, ill-developed condition of the child, who scarcely seemed larger than a girl of seven years.

The examination of the concretions is of much interest. Microscopic study of the unstained and stained bits taken from the centres of many of them shows that they are uniformly composed of the inspissated remnants of the contents of inflamed appendices. The pus cells make up the greater part; exfoliated epithelium cells nearly all of the remaining bulk; and, added to these, a smaller part composed of minute bits of meat fibre (nearly digested) and starch cells, with occasional crystals of decomposition—all welded together by a great variety of bacterial *débris*. In the presence of the latter we see the evidence of nature's effort to remove the incarcerated residuum of decomposition and inflammation, and it is possible that it might be accomplished in months or years of waiting.

But who can afford to wait the perilous delay, when the surgery of the day offers safe and speedy relief? It is now possible by recently perfected methods to remove these dangerous chronically inflamed organs through a small incision (usually one inch long), and





leave the abdominal wall practically normal both in appearance and function.

The foregoing demonstration of the interior pathological appearance of the appendices, which, when seen at operation, often present little or no gross appearance of previous inflammation makes it the imperative duty of the surgeon at operation to remove such an organ, whenever the clinical history of a previous attack has been clear, and to subject it to this method of preparation after removal.

In Fig. 4 we have an excellent illustration of several phases of appendicitis. The specimen was removed from a boy of fourteen years, who had suffered four grave attacks during two years. The operation was done during an interval. A concretion of the usual type was found incarcerated in a sacculus at the end of the organ. The alcohol distending the specimen passed through a pinhole opening in a tough stricture, and it was thus hardened in just the condition representing the inflammatory distention of an acute attack, there having been also a stricture at the point where the appendix was cut off.

One may read the past and future history of the trouble in the pathological picture here presented. Perhaps at the next acute congestion of this organ the stricture would become closed; the sealed cavity at the end would then become an abscess, which in rupturing would discharge the concretion.

Regarding these so-called "concretions," it is not well enough understood that, though of variable degrees of hardness, they are not limestones. Concerning their presence, one may repeat the remark of the scientist lecturing on the earth's development, who said: "There are many to whom it is still a mystery how the apple came to get inside the dumpling." The presence of a tight stricture prevents the epithelial scales which are constantly being shed by the lining membrane from being discharged into the colon. This accumulation is by no means a slight matter, and as the laminated deposit increases and dries out it becomes a source of irritation, which adds pus cells to the deposit. Thus the absence of food products from the microscopic examination may be a very striking feature of the stone's composition.

The development of the diseased appendix, therefore, may be said to pass usually through these stages:

First, a catarrhal inflammation of the lining mucous membrane.

Second, irregular narrowing of the calibre, with hypertrophy of the mucous and muscular coats.

Third, strictures.

Fourth, imprisoned food, desquamated epithelium, and pus, forming concretions.

Fifth, obstruction at the stricture, distention, perforation, abscess.

This explanation will, I believe, be found to include the great majority of cases, but does not exclude appreciation of the rarer ones resulting from simple flexion of the organ, or those resulting from internal ulceration.

The Latest Application of the Roentgen Ray is in the tracing by Kümmel of the course of a Murphy button through the intestine.

TWO CASES OF ERYTHROMELALGIA (MITCHELL).[1]

By D. W. PRENTISS, M.D.,

WASHINGTON, D. C.

Case I.—Erythromelalgia (red neuralgia, Mitchell). Mrs. C——, aged fifty-eight years, neurotic diathesis, but has kept up and worked hard in household duties keeping a summer hotel. Before this attack she was "run down" physically. The disease first began in August, 1895, with burning pain in the first finger of the left hand at the angle of the nail next the thumb, and continued for two weeks in the first finger. In the autumn of 1896 it extended to the second and third fingers, then to the fourth, and finally to the thumb.

A large tender swelling developed at the base of the thumb and this winter there is another tender spot on the back of the hand over the third and fourth metacarpal bones, sometimes over the abductor minimi digiti muscle. The pain is of a severe burning character, lasting sometimes for days together, with remission, but it is never entirely absent during the attack.

Fig. 1.—Shaded areas show location of pain.

Fig. 2.—Shaded areas show location of pain.

The ulnar artery was cut at the wrist several years ago by a broken lamp chimney, and was tied. The patient thought perhaps the nerve was injured and this caused the trouble. This is hardly likely, however, as the pain began and has been most severe on the radial side. Stimulating the ulnar nerve at the elbow causes twitching of the third and fourth fingers.

The character of the pain during an exacerbation is of a severe burning nature and paroxysmal, but the parts are always tender until the attacks pass off; then there will be freedom from pain until the next attack. Previous treatment consisted of local applications, such as chloroform, tincture of iodine, blistering, etc., and general treatment in the form of tonics, and especially for dyspepsia.

Paroxysms of pain were in recurring attacks from three to six weeks apart. Pain was less on lying down. Had typhoid fever thirty years ago. No history of malaria or of specific disease.

October 31, 1896, she came under my care suffering from the symptoms just stated. The pain was evidently very severe, as shown by the facies. It was felt most severely in the thumb and first and second fingers of the left hand, which were of a purplish red hue and swollen.

The worst pain was in the ball of the left thumb,

[1] Read before the Association of American Physicians, May 4, 1897.

which was swollen and very tender. The general health was impaired: heart's action weak, but otherwise normal. She was very nervous and slept badly on account of the pain. There was also pain up the arm to the back of the neck, described as a drawing pain, extending also to the ears, jaws, and throat, with a dull ache of the head and blurring before the eyes.

No dizziness, but occasional difficulty in walking (ataxia). Knee jerk normal.

Dyspeptic symptoms very marked, and aside from the pain in the hand the ailment which called especially for treatment.

The character of the indigestion was that common in neurasthenia, from innervation, not from organic stomach disease. For relief of pain:

R Phenacetin . . . . . ʒ ij
Caffeinæ . . . . . gr. j
In ten caps. S. Two every hour until relieved or until six are taken.

Usually one dose gave partial relief.

She was given nitroglycerin, one and one-half milligrams, three times a day, with tonics and bismuth and carefully regulated diet. After two weeks of this treatment without benefit, galvanism was applied from the hand to the back of the neck daily, three minutes at a time at first, the length of application being gradually increased until fifteen minutes was reached. This was continued with the nitroglycerin and tonics for a month without apparent relief, the dull pain still continuing. It was then stopped for a while, but the pain became worse, and galvanism was again resorted to. The relief, however, was nothing to boast of, though it appeared to be the treatment that offered the best hope of good result.

Fig. 3.—Erythromelalgia. Mrs. C., showing character of the swelling. From a photograph.

The nitroglycerin was to strengthen the action of the weak heart and stimulate freer passage of the blood through the capillary system by dilating arterioles. The constant current, with the positive pole in the hand and the negative at the back of the neck, should relieve pain in the hand and relax spasm.

The treatment here outlined was carried out for three months with little or no relief. The patient improved somewhat in general health, however, but there was no improvement of the pain in the hand. It fluctuated, sometimes better, sometimes worse, until February 18th, when the most violent attack of all occurred, the pain being of an intense burning character, extending to the whole hand, though more severe at the points previously indicated, and following up the arm to the shoulder. The color was purplish-red, with œdematous swelling of parts most affected. The last joint of the middle finger was livid, as from strangulation, and appeared as though gangrene might follow.

During the previous night she had taken six capsules of phenacetin and caffeine (of the former 1.20 grams in all) without relief of pain, but with profuse sweating. Holding up the hands gave relief.

A prescription containing extract of cannabis indica, 0.03; extract of belladonna, 0.01; and salicylate of cinchonidine, 0.20, to the dose, to be taken every three hours, was ordered. And at night a hypodermic injection of morphine and atropine was given, which secured relief and a good night's rest. The pain returned with less severity the following day.

The hypodermic was repeated the next night in smaller dose with the same good effects, and then was no longer needed.

Case II.—Mrs. A——, widow, aged thirty-seven years, a neurasthenic, with severe dyspeptic symptoms. No constitutional taint, as far as known. No history of malaria. Pain in heels began three or four years ago, and has recurred at intervals of three or four months, the attacks lasting from two to three weeks. During the intervals she is comparatively free from pain, but is never free from dull aching which constantly reminds her of something wrong about the feet, and her shoes often feel too tight.

The paroxysms seem to be brought on by physical exhaustion or any kind of strain on the nervous system, especially if she is obliged to stand or walk more than usual, as on one occasion when called to nurse her mother in a prolonged illness.

The pain begins as a dull ache with a burning sensation, at first with a feeling as of pebbles under the heels. As the attack progresses, the burning increases, and extends to the soles of the feet and up the calves of the legs. When the pain becomes severe, the heels are red and swollen, and shoes cannot be worn. As the attack increases in severity, a peculiar sensation extends to the head, with restlessness and hysterical symptoms and a disposition to scream. When asked as to severity of pain, she said it was so bad that she felt that she "just could not stand it another moment."

Lying down relieved, except when at the worst; then the restlessness forced her out of bed, and rubbing would give temporary relief. Cold relieved. Putting the feet out from under the cover was grateful. At my suggestion cold water was tried with benefit. Attacks were more frequent and worse in summer than in winter, and also when the feet got warm in bed.

She is drowsy and dizzy much of the time and frequently shows an ataxic gait.

Treatment has been directed to the general condition—the dyspeptic and neurasthenic symptoms. She has an idiosyncrasy against strychnine, the latter causing dizziness and vertigo. No disease of special organs discoverable.

This disease is undoubtedly a rare one, and fortunately so, for, as Dr. Mitchell says, treatment is almost unavailing, though patients often go on for years without becoming worse. It occurs almost always in the feet. Out of sixteen cases reported by Dr. Weir Mitchell[1] in only one was it in the hands alone, and in two the feet and hands were both affected. In all of the others it was in the feet. He gives as the characteristic symptoms redness, intense burning pain, and at the beginning rise of temperature, but later fall of temperature, with probably inflammation of the nerves affected. It usually commences in the ball of the foot, or the heel, or the great toe, and extends to the sole and dorsum. The disease is more common in men than in women. Twelve out of sixteen cases, reported by Dr. Mitchell, were in men, and of twenty-seven cases referred to by Lannois only two were in women.

Another peculiarity of this affection is that it is aggravated by heat and relieved by cold. In Dr. Mitch-

[1] American Journal of the Medical Sciences, vol. lxxvi., 1878.

ell's cases relief came from lying down, although in a case treated by prolonged rest, while the patient was perfectly comfortable in bed, the pain returned in full force when she got up and walked.

In the first case here reported, cold does not relieve the pain and but little relief accompanies the recumbent posture; probably because it is in the hands instead of in the feet. The causes of the disease are obscure. It seems to follow a depressed state of the nervous system, neglected neurasthenia, long standing on the feet, long marches, as of soldiers, reflex irritation, especially of the male urethra. But the disease is so rare and these reputed causes so common that such reference is unsatisfactory.

As to diagnosis in erythromelalgia, according to Dr. Mitchell, there is in a well marked case no other disease or group of symptoms with which it can be confounded. There are many painful affections of the feet and hands, such as the effects of gout, rheumatism, sprain from flatfoot, nodes from syphilis, etc., but none in which exists the train of symptoms found here; and that the disease is rare is evident from the small number of reported cases

As to pathology, it is obscure. Some of Dr. Mitchell's cases ended in cerebro-spinal disease.

The "red neuralgia" expresses only a symptom.

The pathology of these cases is involved in doubt. Erythromelalgia is classed among the vasomotor diseases.

The pain either precedes or is simultaneous with the redness and swelling. In the case of Mrs. C—— they came on at the same time.

In the second case pain preceded the redness. This would seem to indicate that the sensory fibres of the nerves were first affected, the vasomotor becoming involved secondarily as a result.

This also was borne out by the severe pain on pressure at points most affected. With the redness and swelling, however, the pain is greatly aggravated.

The diseases to which it is most nearly allied are angio-neurotic œdema and Raynaud's disease.

In the former there are three forms described—the pale form (neuro-lymphangioma), due to dilatation of the lymphatics and of paretic origin; the red form, due to angio-paralysis; and the dark-red purplish form, caused, according to Eskridge,[1] by spasm of the arterioles, which "checks the *vis a tergo* of the arterial current in propelling the current forward, and spasm of the small veins, which may force the blood backward into the arterioles."

Some such explanation as this may apply to erythromelalgia, but is altogether hypothetical.

Angio-neurotic œdema is supposed to be a form of urticaria, "the greater urticaria"—a functional nervous disease caused by indigestion or transient nervous excitement. In some of the cases which I have seen it has been attributed to spider bite, I need not say without cause. The element of pain is secondary in angio-neurotic œdema and not important.

This disease cannot be confounded with the one under consideration. The diagnosis from Raynaud's disease, though still more marked, deserves special notice, since many of the cases of erythromelalgia reported by Mitchell were pronounced by high authority to be cases of Raynaud's disease.[2] The two diseases in many respects are the opposite of each other. This is perhaps best shown in the comparison in parallel columns given by Lannois.[3]

This comparative statement should make it clear that erythromelalgia and Raynaud's disease are distinctly separated.

Erythromelalgia.	*Raynaud's Disease.*
Sex, four-fifths females.	In twenty-seven cases two were females.
Begins with ischæmia.	Little or no difference in color, until foot hangs down in upright posture, when it becomes rose red.
Affected part becomes bloodless and white. In certain cases there is the deep, dusky congestion of a cyanosed part, with or without gangrene.	Arteries throb and parts become of a dusky red or violaceous in tint.
Pain may be absent or acute, and comes and goes; has no relation to position. May precede local asphyxia.	Pain usually present; worse when part hangs down or is pressed upon. In bad cases more or less at all times.
Unaffected by seasons. In many cases all the symptoms can be brought on by cold.	Worse in summer and from heat. Eased by cold.
Anæsthesia to touch.	Sensation of all kind preserved.
Analgesia.	Hyperalgesia.
Temperature much lowered and unaltered by posture.	Temperature greatly above normal. Dependency causes in some cases increase of heat, in others lowering of temperature.
Gangrene local and limited; likely to be symmetrical.	No gangrene; asymmetrical.

Two other conditions are mentioned as belonging to diseases of the vasomotor system, namely adiposis dolorosa (Dercum's disease) and acromegaly, both attended by peculiar changes of nutrition and without doubt arising from disease of the central nervous system.

In acromegaly "there were found enlarged pituitary body with enlarged sella turcica, persistence of the thymus gland, and hypertrophy of the fibres and glands of the vasomotor system."[1]

These facts are mentioned as having a bearing upon the plausibility of erythromelalgia being essentially a central disease.

There is the more reason for this hypothesis in the fact that a number of the cases reported developed into well-marked disease of the cerebro-spinal axis and ran their course to a fatal result (Mitchell). Dr. Mitchell was disposed at first to this opinion, but in his recent work[2] he "inclines rather to some form of that new clinical perplexity, peripheral neuritis."

The action of ergot (ergotism) in producing gangrene of the extremities is of interest as bearing upon the general question of causation of vasomotor affections by central disease. Ergot acts upon the vasomotor centres in small doses by stimulating; in large doses by depressing.[3] Dr. H. C. Wood mentions a case[4] of fatal ergot poisoning in which there were gastric irritation, thirst, diarrhœa, burning pain in the feet, and convulsions.

The principal vasomotor centre is in the medulla oblongata, between the corpora quadrigemina and calamus scriptorius.[5] Also in the spinal cord, are secondary centres in the gray matter as far down as the lumbar vertebræ.[6]

Dr. Schenk, in an article published recently in the *Medicinische Presse*, states that the disease is no doubt due to vasomotor disturbance consequent on an ascending degeneration in the posterior column of the cord. Woodnut has also described a case of erythromelalgia due to myelitis.[7]

Referring again to Mitchell's "Clinical Lessons," he says: "At the time I wrote (1878) I should, if driven to be positive in statement, have inclined toward considering this malady as due to some form of spinal disorder. But at present the reasonable explanations

[1] Wilson's "Applied Therapeutics," p. 951.
[2] Osler's "Practice of Medicine," p. 962 (1892).
[3] Article, "Erythromelalgia," 1880, p. 71, Weir Mitchell... "Clinical Lessons on Nervous Diseases," 1897, p. 179.

[1] "American Text-book of Applied Therapeutics." Wilson, 1896, p. 982.
[2] "Clinical Lessons," 1897, p. 180.
[3] H. C. Wood's "Therapeutics." [4] Loc. cit.
[5] Ludwig and Thiry, Owsjannkow and Dittmar: Erb's "Diseases of the Medulla Oblongata."
[6] Goltz, Vulpian, l. c. [7] London Lancet.

incline rather toward some form of that new clinical perplexity, peripheral neuritis."[1]

In Case LVIII. (of "Clinical Lessons," not the fifty-eighth case of erythromelalgia) the disease was the result of an injury, a stone falling on the foot. This case is reported in great detail and serves to strengthen the theory of peripheral neuritis, from the fact that it was caused by (or followed) a local injury. Dr. Mitchell further goes on to say: "I use the word neuritis, nerve-end neuritis, with more or less doubt. Some such distinct affection of the smaller nerves does seem to me probable, but whether it is congestion, neuritis, or some other of the undescribed changes in the lesser nerves or in the ultimate nerve plates, we may not as yet describe with certainty."

Again[2] "neuritis is becoming a sad puzzle. We may have it with paresis and little pain; we may have it without notable paresis and horrible pain. It exists with or without notable myositis.

"Again, it may give rise to causalgia, joint troubles, and alterations of nails and hair. It may fail to disturb nutrition or greatly to alter local heat. And lastly, if erythromelalgia be a neuritis, it may cause pain and flushing, and to these, increased enormously by dependency of the part, may add such a rise of temperature as is rarely seen in acute local inflammation."

Dr. Mitchell continues to discuss the possibility of the existence of neuritis of such a character as to single out individual elements in a nerve containing fibres of sensation, motion, nutrition, and vasal control, affecting some and not others. Such a hypothesis seems untenable.

In Case LVIII., previously referred to, the excised portions of the musculo-cutaneous and internal saphenous nerves were examined microscopically and found "absolutely normal."

To sum up the pathology, then, we have the choice between:

1. Disease of the central nervous system.

2. Peripheral neuritis affecting principally or only the smaller nerves or nerve endings.

If the former, we should expect the disease to be located in the medulla oblongata between the corpora quadrigemina and calamus scriptorius, or in the posterior segment of the spinal cord as far down as the lumbar vertebræ.

The central theory seems the more plausible, but at this time is purely hypothetical, there being no dissections to support it.

The opinion of peripheral neuritis of a peculiar character is given a show of plausibility from two cases, reported by Dr. Mitchell, which followed local injury. In both of these nerves were exsected, and the nerve trunks thus removed found normal. This fact would locate the neuritis in the nerve extremities.

We will close this report by a reference to treatment, which unfortunately can be shortly disposed of. Thus far curative treatment has been of no avail, except in one case, by surgical interference.

The treatment divides itself into three indications:

1. That of the general health, neurasthenia, nervous dyspepsia, and hysteria especially.

2. The relief of pain. For this purpose phenacetin protected by caffeine seems of first value. Cannabis indica and belladonna in the first of the present cases proved useless, as did also the phenacetin in the most violent paroxysms.

During the latter, subcutaneous injection of morphine is imperative, but the objection to its frequent use is obvious. Rest in bed and cold applications are palliative. Wendel reports a case cured by liquor acidi arseniosi, together with general treatment.[3]

3. Surgical treatment. Exsection or stretching of the nerves was contemplated in the first case, but there being no precedent for it, and fearing serious nutritive changes, it was not determined on. This was before seeing Dr. Mitchell's "Clinical Lessons," 1897, in which he reports two cases thus treated, the first one with success in relieving and curing the patient. In the second case, however, gangrene, resulting fatally, followed. The operation, the first of its kind in this disease, I quote from Dr. Mitchell's book:[1]

"Dr. Keen operated on April 10th. He exsected two and one-half inches of the musculo-cutaneous nerve, and the same length of two branches of the internal saphenous. The two end branches (plantar) of the posterior tibial nerve were stretched at the internal malleolus with a traction of fifteen pounds thrice used. The result next day was remarkable. There was almost immediate relief. The foot could be squeezed, pinched, or pricked without pain. Anæsthesia was not so extensive as we were led to expect it might be. Temperature the day following the operation: right, 95° F.; left, 93.5° F.; mouth, 99.5° F. (It was the right foot that was operated upon.) On

Fig. 4.—Shaded areas show location of pain.

the right clonus was still present and knee-jerk was still extensive. The wound healed in a few days. The 4th of May the patient was able to walk on crutches. Clonus had disappeared and reflexes were no longer exaggerated. There was still some flushing when the foot was pendent, but no pain or hyperæsthesia. When discharged May 6th, he could walk well, but was ordered to continue the use of crutches as a measure of precaution and had also a bandage applied daily.

"Dr. Kyle reports culture of blood and nerves obtained at the operation as yielding purely negative results. . . . June 7th, S—— is reported well and walking easily without crutches. Six months later he was at his work as a stone mason and entirely free from pain."

Thus it appears that at least one was cured by surgical procedure. The second case thus treated[2] was more unfortunate. I will only mention the operation and result.

Operation, April 12, 1894, by Dr. T. G. Morton. Four inches of the musculo-cutaneous nerve and five inches of the internal saphenous excised. The posterior tibial behind the internal malleolus stretched with force of twenty-eight pounds. On the fifth day gangrene developed. A week later amputation was performed, with death on the operating-table. Com-

[1] Loc. cit. p. 180.
[2] Loc. cit.
[3] New York Medical Record, 1890, vol. xxxviii., p. 545.

[1] Loc. cit., p. 192.
[2] Case LIX. of "Clinical Lessons."

menting on this case, Dr. Mitchell says: "As to operative relief I think that in the future I should stretch all the nerves and leave resection of their trunks to be resorted to if milder means gave no fortunate results."[1]

In conclusion I append titles of bibliography of erythromelalgia taken from the card catalogue of the library of the surgeon-general's office. These titles do not appear in the large published "Index Catalogue." The disease had not been differentiated at the time the volume of the "Index Catalogue" in which they would have appeared was compiled.

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[1] Loc. cit., p. 204.

A STUDY OF DIET AND NUTRITION IN RELATION TO CONTAGIOUS DISEASES AND TO THOSE DUE TO DISTURBED DIGESTION AND ASSIMILATION.

By E. PALIER, M.D.,

NEW YORK.

THE question of diet dates back for centuries. Since man acquired the power of thought and analysis, dietetics have entered a great deal into his consideration. In spite of this, we are no nearer now to a solution of this vital question than we were centuries ago, the views held with regard to it being in certain regards diametrically opposed to each other, each side strenuously advocating a certain regimen in health and in disease, with apparent equal show of logic and reason.

It is quite interesting briefly to review the opinions expressed by the great masters of the human mind and thought with regard to the kind of diet most suitable for man. The Bible lays down strict rules with regard to dietetics. Though it does not forbid animal food, yet it eliminates the greatest part, and allows only certain ruminants and some birds. The prohibition of cooking the offspring in its mother's milk is probably more on account of cruelty than for hygienic reasons.

Among the lay writers we find that as far back as 570 B.C. Pythagoras was against flesh eating. Plato followed in his footsteps and was a vegetarian, or at least tried to be as strictly vegetarian as circumstances would allow. Hippocrates, in his writings on regimen, favored a vegetable diet as the one conducive to good health, and so did Esculapius. The same views were held by Ovid about 50 B.C. Diogenes and Plutarch held that only ferocious animals ate flesh. The early Christians taught a moderate diet, and deprecated the practice of flesh eating. Cheyne, a celebrated English physician in 1671, maintained that it was possible to avoid and to cure diseases by adhering to a vegetable diet. Pope inclined toward a vegetable diet. Linné said that this species of food was the most suitable for man. Dr. Lambe, in 1765, held the same views. Buffon, Lamartine, Schopenhaur, and Rousseau were against flesh eating. Liebig states the following: "A bear was peaceful and tame as long as it was fed on bread, and a hog after partaking of flesh became ferocious and ready to attack a human being." A German philosopher once said: "Der Mensch ist was er isst." And this probably applies to other animals as well as to man.

When we come to regimen in pathological conditions opinions differ widely. In typhoid fever the diet is a stumbling-block to therapeutists. Bauer recommends beef tea in this disease; some again advise milk. Dujardin-Beaumetz advises preparations of fruits and farinacea. He also recommends a vegetable diet in certain forms of dyspepsia, whereas most physicians find that starchy food, in general, is not well borne by dyspeptics.

In view of the above-mentioned array of great names against an animal diet in health, and the conflicting views of modern therapeutists with regard to the dietary in disease, the question arises: "Have we the right to slaughter animals and be guilty of a wilful and wanton act of cruelty, when it is not only without benefit, but even injurious to our health and morality?"

If we can demonstrate that an animal diet is necessary for man, then we are fully justified in doing so from the principles of self-preservation. But, unfortunately, modern science can help us very little in this regard. Chemically the animal and vegetable proteids do not differ. Physiologically they also seem to act alike. Foster has the following: "Vegetable proteids appear to undergo in the alimentary canal the same changes as do animal proteids, and the effect seems to be the same on the body."

We must therefore consider the question from an etiological standpoint, and see what influence diet has in preventing and causing diseases; and this is a most difficult problem, since such complex phenomena are capable of different interpretations.

At first it is necessary briefly to consider the food stuffs and their ultimate functions in the economy as far as they can be ascertained in the present state of physiology.

The food stuffs are as follows: Proteids, carbohydrates, fats, and fruits.

All agree that all of the above-named food stuffs must enter in various proportions into the dietary of man to maintain health and life. The question is only as to whether vegetable proteids alone are sufficient, or there must be also animal proteids.

The physiology of digestion, the changes which the various food stuffs undergo in the various parts of the alimentary canal are, with the exception of some minor points, pretty well established.

When we come, however, to absorption of the various food stuffs and their ultimate functions in the economy, we are groping in the dark. According to Foster, the fats are absorbed mainly by the lacteals and pass through the thoracic duct into the venous system. The sugars are absorbed mostly by the capillaries of the villi, through the intestinal epithelium, and thus enter into the portal vein. The absorption of the proteids or peptones is less understood and more difficult to follow. Foster inclines to the view that they are absorbed mostly by the capillaries, but as soon as they pass into the blood all trace of them is lost. The difficulty attending this subject is apparent.

Some claim that the leucocytes are mostly concerned in the absorption of fats and proteids. Though this view is discredited by physiologists, yet it is admitted that the leucocytes do ingest in themselves particles of food stuffs and other foreign bodies reaching the system. With regard to the ultimate uses made by the body of the various food stuffs, the trend of opinion is that the proteids are mainly concerned in tissue metabolism, and are excreted by the kidneys as urea in carnivorous animals and mostly as uric acid in birds and reptiles.

The proteids, however, when partaken of above a certain mark, may by themselves constitute the luxus consumption, and an animal may gain flesh. The fats and carbohydrates are mainly concerned in supplying the body's energy in its various forms. They are also stored up as adipose tissue, as a reserve to be drawn on whenever necessary.

This is a brief summary of the food stuffs and their destinations, which it will be necessary to bear in mind in the further discussion.

It would seem, then, that a man may live on a vegetable diet and yet continue to be in apparent good health and capable of performing prodigious amounts of labor, as is proven by the European, especially the Russian, peasantry, as well as by the Asiatic laborers, namely, Japanese and Chinese, who, though feeding almost exclusively on vegetables, yet are capable of performing continuous fatiguing labor; and this is the case with the equine race. The opinion generally held that the Esquimau and other Northern races are stunted in growth and physically weak on account of their animal diet is lacking of proof, for there are many other factors obtaining there, so that it is hard to say what part diet plays under those circumstances.

When, however, we come to the clinical history as well as the morbid changes in a vast number of diseases, there seems to be very little difficulty in tracing them to errors in diet, and the animal diet seems to exert a powerful influence on the economy by enabling it to resist a great number of diseases. There are, however, affections which can be traced to errors of either the one or the other kind of diet, as I will try to demonstrate.

Gout is a disease *par excellence* which is due to an excess of concentrated vegetable principles partaken of by man. In the ancient times gout was prevalent mainly in the upper classes. Since the introduction of malted liquors, gout is quite prevalent among the poorer classes. The morbid changes in gout are an increase of urates, especially that of sodium, in the blood and tissues. Now, uric acid in the form of urates is the characteristic in the urine of birds, which feed mostly on grain, vegetable proteids. Foster denies that uric acid is due to deficient oxidation, and believes that it is an independent product, as urea. And this cause of gout is in accord with the clinical experience in treatment. Sydenham and others thought that farinaceous food was suitable in gouty conditions, laboring under the impression that it is due to an excess of animal food. But the fact is, it is due to an excess of vegetable principles, and this is in accord with Dr. William H. Draper's experience,[1] who says that albuminous food is most acceptable to gouty patients, and farinacea should be excluded as much as in diabetes.

Rheumatism is a disease which is generally considered as being more or less allied to gout, and is classified with the latter. There is sufficient evidence that it is a disease due to disturbance of nutrition, such a theory having been advanced already by some. The microbic theory of rheumatism advanced by Heuters and others does not preclude the fact that the main predisposing cause of this disease is a disproportionate supply and demand of the various food stuffs. Prout's lactic-acid theory was modified by the sarcolactic-acid one; but both acids belong chemically to the same group, and both are derivatives of the carbohydrates. The carbohydrates, according to Foster, are mostly made use of by the muscles for kinetic energy, and are given off as CO_2 by them. The uric metabolism is but slightly increased during active muscular exercise.[2]

Now when the supply of the carbohydrates is greater than the demand, there results a disturbance of nutrition which manifests itself as a symptom in the acids of the perspiration; the economy is thus susceptible to a disease which is brought about by exciting causes. Loomis says: "Scrofula, phthisis, and cancerous affections so often precede rheumatism that a connection between them cannot be denied."

Phthisis I will discuss later, and propose to prove that the effect of diet on it is admitted by most.

A remarkable fact about rheumatism is that suckling infants are almost exempt from it. Rauchfuss found only two cases of it among fifteen thousand suckling infants, and such is the experience of other observers. If we take into consideration that the sugar of the milk is proportionate to the demands of the infant, milk being its natural food, the exemption of infants from rheumatism is explicable.

Dr. Percival, in 1754, wrote about the benefits derived from cod-liver oil by fishermen suffering from rheumatism. Dr. W. H. Thomson recommends it highly in this affection, though from another standpoint, for according to him it is a skin disease. But the fact remains that cod-liver oil is beneficial in many cases of rheumatism, and this helps to confirm the view that it is a disease due to disturbance of nutrition, and the disturbance is caused by the disproportionate supply of the food stuffs.

Hence both rheumatism and gout are diseases caused mainly by an excess of carbohydrates, but whereas in the latter the mischief is due mainly to the nitrogenous

[1] Pepper's "System of Medicine," vol. ii., "Gout."

[2] Foster, § 539.

elements, in the former it is due to the non-nitrogenous elements.[1]

Diabetes mellitus is a disease that has been known for centuries, and has been widely investigated of late; yet its etiology and pathology have not been satisfactorily explained so far. Aside from the nervous origin of diabetes, which was established by older observers, recent observers have laid great stress on pancreatic diabetes.

Dr. Kaufman, in an exhaustive article on this subject,[2] tries to explain the relation of the pancreas to the sugar formation of the blood. He inclines to the theory that the pancreas has, *per se*, aside from its secretion, an intrinsic control over the sugar ferments of the blood, and that when this intrinsic power is gone there is an excess of sugar formation. He cannot explain, however, what this power is, and how it acts. Pathologically we find a hyperæmia of the liver in diabetes, and sometimes it is in a hypertrophic and cirrhotic state. Writers try to explain the hyperæmia as being due to affection of the vasomotor nerves controlling the liver. Yet competent observers have failed to demonstrate any nerve lesions in many cases of diabetes.[3] The fact is that though hyperæmia will follow vasomotor paralysis, it does not necessarily follow that the cause should originate in the nerves, as many local irritants will cause hyperæmia as well. It is highly plausible to assume that diabetes is in most cases a dietetic disease, and it is akin to dyspepsia.

Now, what is dyspepsia? It is an affection characterized by digestive disturbances of one or several parts of the alimentary canal. It is hardly necessary to say that unsuitable diet and irregularity of meals are the most prolific causes of dyspepsia. It may also be caused, as a rule temporarily, disappearing as soon as the cause is removed, by worry, anxiety, fright, etc.; in fact, by nervous affections. Digestive disturbances may be gastric, or pancreatic and hepatic, or all forms combined. Gastric disturbances not being an essential part of the subject under discussion, I will not dwell upon it.

Dyspeptics are variously affected by the several articles of diet. A great many cannot easily digest fats and carbohydrates. In such, a fatty meal causes pyrosis, malaise, and semisolid fatty mucous stools; carbohydrates cause excessive fermentation with borborygmi. Dyspeptics also generally suffer from a torpid liver, with its concomitant, piles. Physiologically it is pretty well established that fats are prepared for absorption by the pancreatic secretion, and secondarily by the hepatic. The carbohydrates undergo amylolytic changes through the saliva, and to a greater extent through the pancreatic juice, whereby they are transformed mostly into maltose, which is absorbed by the liver and is stored up as glycogen, having undergone a retrogressive change. Now, since owing to dietetic errors the fat-transforming power of the pancreas and the liver is often impaired, there is no reason why the same should not happen with the carbohydrates. It is a general law that when the function of an organ is impaired it should not be overtaxed. But dyspeptics, as a rule, and also diabetics, seek advice very late; and meanwhile the liver and the pancreas, having undergone excessive strain while in a weak condition, become hyperæmic—which, by the way, occurs after each meal, especially a mixed diet, even in normal conditions—and this hyperæmia leads to hypertrophy, which may result in cell proliferation and cirrhosis.

Clinically it is a fact that diabetic patients improve on a proteid diet. Some glycosuria will still appear, for proteids are also split up into sugar. Physiologically the pancreas, as I have said, helps the saliva to transform the carbohydrates into maltose, and this is absorbed by the liver and stored up as glycogen. When, however, the amylolytic power of the pancreas is weakened, at the same time the absorbing power of the liver is taxed to the utmost, for it has to absorb material not well prepared; the pathological changes of diabetes will follow, the liver becoming altogether *hors de combat*, and all the glucose formed by the saliva, and which is probably formed by fermentation even in normal conditions to a slight extent in the other parts of the economy, is discharged through the urine. The amount of carbohydrates consumed by an individual is not a criterion, for what may be very small for one may be excessive and deleterious to another. The digesting and absorbing power, as well as the amount utilized for kinetic energy, of each individual must be taken into consideration.

According to Dickinson, diabetes is more prevalent in the agricultural districts of England. This fact, if true, is significant, for agriculturists live mostly on fats and carbohydrates.

In short, then, diabetes is akin to fatty dyspepsia. The same pathological changes in the pancreas and liver are apt to occur in the latter after a time as in the former.

Tuberculosis is a disease which greatly occupies the attention of the medical profession at present. Since the discovery by Koch of the tubercle bacilli, in the last decade, the trend of opinion of the profession is to regard it of microbic origin and to consider it among the contagious diseases.

Now there are remarkable phenomena with regard to the microbic diseases, which so far either have not been explained at all, or are explained by the vague term idiosyncrasy; namely, that certain ages and localities have a relatively greater immunity than others. As I intend to dwell on each disease separately, I shall consider these points in connection with each.

With regard to tuberculosis, we find that infants under one year and the aged are less subject to it than older children and adults. Dr. A. Jacobi,[1] in summarizing this subject, says: "Thus tuberculosis is comparatively rare under one year, undoubtedly because of the comparatively few opportunities for infection." It is, however, quite incomprehensible why infants have fewer opportunities for infection than children and adults. Infants under one year are comparatively under worse hygienic conditions, for they are kept more confined and enjoy less the benefit of fresh air. In the poor districts of the larger cities, infants are kept for days and occasionally for weeks without getting an airing, confined in unventilated, overcrowded, unclean rooms of tenement houses, which are generally the starting-points of all contagious diseases, as is well known to every observer. The schoolhouse and the factory are certainly under more favorable hygienic conditions than is the tenement house. Infants of tuberculous parents, or in a family in which there is a tuberculous member, are thus constantly inhaling the dried tuberculous sputum under conditions most favorable for the development of tuberculosis. The period of incubation of tuberculosis is admitted not to extend over a year, but is counted by weeks, so that tuberculosis should be at least as prevalent among infants, if not more so, as among children and adults.

When we come to old age, we also notice that tuberculosis, as well as most contagious diseases, are comparatively rarer then than at the other periods of life.[2]

[1] An excess of the carbohydrates and the fermented and malted liquors is probably also the cause of delaying the metabolism and elimination of the animal proteids, which, accumulating in the system, help to bring about the gouty condition.

[2] Archives de physiologie normale et pathologique, 1895, série 7.

[3] Pepper's "System of Medicine," vol. ii., "Diabetes."

[1] Keating's "Cyclopædia of Diseases of Children," vol. ii., p. 168.

[2] Pepper's "System of Medicine," vol. iii., "Tuberculosis, Phthisis."

All this is explained by the obscure term of "diathesis." Geographically three are certain places where tuberculosis is very rare; such are the Faroe Islands and Iceland.[1] Dr. S. Kneeland,[2] who travelled in those islands, says about the inhabitants that they are very filthy, seldom taking a bath, so that vermin are seen crawling on their bodies. They live in crowded, ill-smelling, ill-ventilated rooms, huddled up together. This description is in accord with the statements of other travellers.

Now, supposing that climate exerts a favorable influence, it ought to be offset by the unfavorable hygienic surroundings, so that tuberculosis ought to be as prevalent there as in other places, for who would think of sending people for their health to the Adirondacks, and locate them in overcrowded, ill-ventilated quarters? Would not the Adirondacks become as bad as a tenement house? It is also stated that tuberculosis is less frequent in the navy and more prevalent in the army, and at the same time we notice that with regard to scurvy, a dietetic disease *par excellence*, the opposite prevails. Here, then, we have groups of individuals who are little susceptible to tuberculosis. There is one characteristic common to all of them, and that is their diet.

Infants feed exclusively on animal diet, milk. Old people, being unable to masticate bulky carbohydrates, live largely on milk, animal proteids—the latter, on account of being required in small bulk, are most suitable to that age—and fats. The Faroese and the Icelanders, because of the aridity of their land, live mostly on animal diet. The same is the case with sailors, who consume little of the vegetables and live on preserved flesh and fats, and hence the prevalence of scurvy among them. And this is in accord with what we know of the animal kingdom. We find that the dog and the cat are less susceptible to this disease than other animals. With regard to animals kept in confinement, Mr. Smith, director of the Central Park Menagerie, kindly volunteered to me the statement that the carnivorous animals suffer very little from contagious diseases, but, on the other hand, they suffer and die from intestinal troubles, are subjected to cramps, and convulsions, and kidney troubles; and this is precisely what happens with suckling infants.

Diphtheria is a disease of childhood *par excellence*, and yet infants under one year are very seldom the subjects of it, though unquestionably cases are occasionally met with at that age. Oertel says,[3] with regard to diphtheria: "In the first half-year the infant organism seems to be not at all susceptible to the disease." Jacobi[4] explains this on the supposition that the abundant acid secretion of the mouth of infants after three months of life washes away the diphtheritic infection, and does not give it a chance to gain a foothold in the buccal cavity.

But the fact is that, the normal buccal secretion being alkaline,[5] the acid secretion shows an abnormal unhealthy condition of the mucosa of the cavity, and is generally found in connection with the various forms of stomatitis, especially the parasitic variety due to the saccharomyces albicans.

Now it is quite logical, and in accord with what we know about etiology in general, to expect that with an acid secretion, when the mucous membranes are more or less unsound, diphtheria should set in sooner than otherwise. The acid secretion is certainly valueless as an antiseptic, for, if it were such, how would the above-mentioned parasites thrive in it?

[1] Solis Cohen: Hare's "System of Therapeutics," "Tuberculosis." [2] "An American in Iceland."
[3] Keating's "Cyclopædia of Diseases of Children," vol. i., p. 595.
[4] Pepper's "System of Medicine," vol. i., "Diphtheria."
[5] Keating's "Cyclopædia of Diseases of Children," vol. ii., p. 959.

Old age is as little susceptible to diphtheria as infancy, and finally we find that the various parasitic affections of the buccal and nasal cavities, such as glanders, diphtheria, and scarlatinal sore throat, are most common among the herbivoræ and very rare among the carnivoræ. We find, furthermore, the statement made[1] that diphtheria is more fatal in the rural than in the urban districts. Now reasonably we should expect the reverse, since even the poorest of the rural inhabitants are under better hygienic conditions, as far as fresh air, spacious quarters, and cleanliness go, than the poorer classes of the tenement districts of cities. We cannot ascribe the fatality to lack of skilled physicians, for we find that the mortality of this disease is less among the Indians than the whites, and is also less among the blacks—and Indians and blacks, as a rule, care very little about securing the best medical skill; yet they seem to be better off.

If we should consider diet as a great factor in this disease, we can explain the above-mentioned puzzling facts. With regard to Indians and blacks, the race influences probably play also important parts, besides diet.

Measles is another disease remarkable for its greater prevalence at certain ages and in certain localities. Thus, statistics show that it is also comparatively rare under one year, very seldom attacks the old, and is more fatal in rural districts.[2]

With regard to small-pox the same statement is made, though we should expect the contrary, *a priori*, since infants are seldom vaccinated in the first half-year of life, so that small-pox should be most prevalent at that age.

The same is said with regard to typhus, typhoid, and malarial fevers. Though cases of each undoubtedly occur in infants, yet they are less subject to these diseases than individuals of other ages.

Thus we find a number of diseases to which groups of individuals, who *a priori* we might suppose should be more susceptible, are really less so, and *vice versa*. No plausible explanation that could stand a moment's criticism has so far been advanced. Since we find, however, that in those groups of individuals the only marked distinguishing feature to their advantage or disadvantage is their diet, diet then must be the great factor responsible for greater or lesser susceptibility to certain diseases in certain groups of individuals of the same races. I say of the same races, because, race with relation to diseases being a subject for study in itself, I do not wish to broach it here.

With regard to tuberculosis and diphtheria, the influence of diet on them is more evident than with regard to the other contagious diseases. The specific pathogenic micro-organisms of these two diseases have been more satisfactorily established than those of the other contagious diseases, and the advantages of the albuminates and fats seem to consist in enabling the system to overcome the pathogenic micro-organisms. Physiologically we know that albuminates, as well as all the proteids in general, whether animal or vegetable—and the former seem the more so—hasten tissue metabolism, and thus cause cell stimulation, *i.e.*, they hasten the disintegration of the old ones and cause their withdrawal from the economy, and these are replaced by new, more vigorous, and healthy ones. In addition to this, the albuminates and digestible fats seem to be the most suitable nourishment for the leucocytes. As I said above, some claim that the leucocytes are responsible for the absorption of the fats and proteids from the alimentary canal. This view is

[1] Keating's "Cyclopædia of Diseases of Children," vol. i., p. 142.
[2] Keating's "Cyclopædia of Diseases of Children," vol. i., "Measles."

discredited by Foster; but even he admits that the leucocytes ingest within themselves great quantities of these food stuffs. The same cannot be said of the carbohydrates; no observer claims that they are absorbed to any extent by the leucocytes. The theory of the phagocytic properties of the leucocytes is gaining more and more ground. They seem not to take any important part in the constant physiological processes, and are placed mainly as the guardians against foreign intrusion. A great excess of them is detrimental to the economy, and hence the disease leukæmia. To use a simile, they can be compared to a standing army of a commonwealth. In case of war the standing army is increased, and the same is the case with the leucocytes, which increase in number in many communicable diseases. When, however, the army is increased disproportionately to the inhabitants and to the means of the commonwealth, the result is total ruin of the latter as well as of the former.

The case is different with the workers and producers of a community. A general increase of them is always beneficial. So with the tissues performing constant physiological function, a general increase of them is beneficial. There is no disease produced by an increase of red blood corpuscles. The slight inconvenience from the so-called "full-bloodedness" can easily be overcome, and cannot be called a disease. The same with general muscular and nervous development. The adipose tissue, however, being kept merely as a reserve, and being called upon only at certain times for supplies, is injurious by its excessive development.

Pathologically we notice that in most contagious diseases the initial lesion is found somewhere in the lymphatic system, and is propagated to the system through the lymphatics. The tubercle of tuberculosis consists, according to Ziegler,[1] principally of emigrated leucocytes. According to Virchow and Woodward, the tubercle always takes its origin in a lymphatic vessel. In diphtheria the membrane, according to most authorities, is formed by the migration of leucocytes, together with the fibrin derived from the transuded plasma.[2] There being pretty often a glandular enlargement in this disease, it shows that the lymphatics carry the contagion to the body. In typhoid fever we find the characteristic lesions in the intestinal follicles or Peyer's patches. In malarial fever the spleen is greatly affected; and in bubonic plague—a disease, by the way, affecting mostly the Asiatics, who generally live on carbohydrates—the glands are also primarily affected.

How do we explain these phenomena? We can easily explain them by the fact that the leucocytes, which are constantly wandering all over the system, as soon as they meet with the pathogenic micro-organisms engage in a deadly struggle with them, and as soon as the first ranks succumb others advance to take their place in the struggle, and the outcome of this struggle is the survival of the fittest. Since the leucocytes are most abundant in the lymphatics, they are apt to carry at first some of the micro-organisms over there sooner than anywhere else, and hence the lymphatics suffer first and most. To use again the above simile, in a country invaded by a foreign army the signs of battle, whichever side wins, are mostly seen and felt in places occupied by numerous bodies of the defending army.

The action of antitoxin in diphtheria is stated by some[3] to be due to cell stimulation, thus enabling the leucocytes successfully to struggle with the bacilli. This view seems more plausible than the one claiming it to be a chemical antidote. Thus antitoxin would be considered as an albuminoid, and act simply as a food for strengthening the leucocytes.

Modern physiology teaches that the peptones are formed by a process of fermentation due to the development of micro-organisms. Experiments have shown[1] that the gastric and pancreatic juices are not germicides, and the result of the experiments is in accord with the teachings of physiology; if the intestinal juices were germicidal, digestion could not go on, for there could be no fermentation due to the development of micro-organisms. It would also seem reasonable to suppose that the leucocytes normally take care of the walls of the stomach and intestine, destroying the micro-organisms which are apt to adhere to them. The peristaltic movement also prevents the food normally from adhering very long to the walls, so that the main process of digestion is always driven away from the periphery toward the centre. This explanation seems more plausible than those hitherto advanced as to why the walls of the stomach and intestine do not digest themselves. The explanation that the alkalinity of the blood neutralizes the acidity of the gastric juice does not hold good for the pancreatic digestion, which is alkaline. How is this neutralized?

We find the following statement made:[2] "It must not be forgotten that albuminoses are produced by microbes, and these soluble products are capable when injected into an animal of producing immunity against certain diseases." I must add that the same authority considers the peptones as a tox-albuminose.[3]

It is further stated that "Hankin has shown that an albuminose is capable of protecting animals against splenic fever."[4] This brings me also to speak of the action of quinine in malarial fever.

The therapeutic action of quinine in malaria, as well in fact as the therapeutic action of all drugs in all diseases, is rather empirical and obscure. It is claimed by some[5] that quinine acts *per se* as a germicide, destroying the plasmodia in the blood. But, since the plasmodia are endowed with amœboid movement, they most assuredly penetrate into the most intricate recesses of the system, like the leucocytes, and, admitting that the germicidal action of quinine destroys the plasmodia, the whole system must be literally saturated with it in a sufficiently strong solution. Would not this be detrimental to the economy? Besides, if quinine acted as an antiseptic, other antiseptics should also be more or less efficient.

It would seem plausible to suppose that quinine acts like antitoxin by cell stimulation. We find[6] that quinine increases the number of leucocytes. We find also[7] that in malaria the leucocytes are increased in number; quinine thus helps the increase of the leucocytes, to overcome the swarms of plasmodia which invade the system. Quinine has been administered empirically in all zymotic diseases, not simply as an antipyretic, but with the vague idea that it somehow helps along.

Many cases of chronic malaria do not yield to quinine, but are successfully treated by arsenic and strychnine, drugs usually administered as so-called tonics and not as germicides.

In addition to the physiological actions of animal diet, the fact is that it is generally submitted to high temperature before it is used, and is rendered more aseptic than vegetables, which are eaten either raw or cold. It is yet undecided[8] whether or not by eating the

[1] Pepper's "System of Medicine," vol. iii., "Tuberculosis."
[2] A. Jacobi: "Diphtheria," in Pepper's "System," vol. i.
[3] "Practical Therapeutics," Foster, "Antitoxin."

[1] "La Cellule," 1892.
[2] Landois and Stirling's "Physiology," § 9. [3] Ibid., § 429.
[4] Feser's experiments on rats have proven that those fed on flesh do not readily contract anthrax by inoculation, while those fed on vegetables invariably succumb.
[5] Hare's "System of Therapeutics," "Malaria."
[6] Landois and Stirling's "Physiology."
[7] Loomis' "Practice of Medicine," "Malaria."
[8] See Wilson's "Elements of Hygiene," "Diet."

flesh of infected animals the infection will be carried to the system. But to err on the safe side, in almost all civilized communities animals are examined by experts before being used for human food.

The foregoing may be summed up as follows: Animal diet is a good prophylaxis against the microbic diseases. Rheumatism, gout, dyspepsia, and diabetes are less apt to follow an animal diet, these being diseases *par excellence* due to vegetable products. On the other hand, however, animal diet is a prolific cause of acute gastro-intestinal trouble—witness the carnivorous animals and suckling infants, who die mostly from intestinal complaints; it is also a cause of general convulsions and epilepsy. Cases of ptomain poisoning due to an animal diet are reported.[1] The noxious effects of an animal diet, when partaken of injudiciously, are thus evident and palpable, and can in most cases be easily traced to the cause, and that is why it is looked upon by many people with such suspicion.

The carbohydrates, on the other hand, are wolves in sheep's clothing. Unlike the albuminates, they are more apt to undergo excessive fermentation than putrefaction, and thus years may pass, the patient feeling only slight discomfort meanwhile, till its noxious effects break out. It is not surprising then that the primary cause should be entirely lost sight of, and the effects attributed to intermediate secondary causes.

I have traced, as far as it is possible in such an article, the good and the evil derived under certain circumstances from each regimen. It is impossible to lay down general laws as to regimen. Each individual is a subject for separate study, and the best advice that can be given in this matter is: "Man, know thyself."

254 Madison Street.

[1] See a discussion on this subject in Bulletin de l'Academie de Médecine, 1896, Paris.

THE CONDITION OF THE GASTRIC SECRETION IN MERYCISM.

By ANDREW HALLIDAY, M.B.,

SHUBENACADIE, NOVA SCOTIA.

In the Medical Record of June 12th, Dr. Menassian, of Iowa, reports a case of merycism which is very interesting from a professional standpoint, but is doubly interesting to me on account of the fact that I myself have the power of regurgitating and ruminating.

Since my boyhood I have had this power of regurgitating and remasticating my food at will. Indeed, it became so habitual with me that I put the operation into practice after almost every meal, particularly after dinner or when I had taken any specially solid food and which I had not thoroughly masticated, *e.g.*, pieces of meat, hard-boiled egg, etc. It never caused me the slightest discomfort to go through the process, and the food, instead of being in any way disagreeable, was rather rendered more palatable, this being accounted for, no doubt, by the partial conversion of the starchy part of the meal into sugar.

When about eighteen years of age I began to smoke, and since then I have largely given up the regurgitating habit, simply because the one habit has supplanted the other, since whereas I used to regurgitate and ruminate after a meal, I now smoke. Nevertheless, I often, an hour or two after a meal, almost involuntarily regurgitate a mouthful of my gastric contents. These contents, however, are never regurgitated of themselves against my will. I have perfect control of the process, and although I may, indeed, do it involuntarily, still I just do it in the same way as I would, without actually thinking of what I was doing, go and fill and start to smoke my pipe. On these grounds, then, I am led to consider the whole thing merely a matter of habit, and not due to the condition of the gastric secretion. Like Dr. Menassian's patient, "nausea, pyrosis, pain, or distress referable to the stomach" are subjective symptoms which I never experience; neither have I epigastric tenderness nor am I neurasthenic. The only thing I do suffer from is migraine, a subject which I have discussed in this relationship elsewhere.

I have taken Ewald's test breakfast many times, and examination of the gastric contents gives the following results: Reaction, acid; total acidity = 45 to 55; HCl (Günzburg's test) = 0.124 to 0.1604 per cent.; acid salts, small amount; rennin ferment, active in three to five minutes (Leo's method); proteolytic ferment, active for fibrin very quickly.

The gastric contents were usually regurgitated from forty-five to sixty minutes after taking the last mouthful of the breakfast (three hundred cubic centimetres water and thirty-five grams bread). After one hour I was not able to regurgitate enough to go through the various tests, but between forty-five and sixty minutes I could always get more than enough.

Dr. Menassian seems to think that this indicates too rapid a passage through the stomach, but I cannot quite agree to this, and I am supported in my opinion by the following: "As the result of eight examinations on healthy subjects, Boas says that one hour after taking a roll and three hundred cubic centimetres of water, about forty cubic centimetres should be obtained by expression; the amount may vary fifteen cubic centimetres either way; otherwise the result is pathological."[1] According to the above, I have always been within the normal limits.

In conclusion, then, I would call attention to the following facts:

(1) The whole process is absolutely under control of my will (although it may occur spontaneously, as stated above).

(2) HCl is never absent, a point Dr. Minassian lays great emphasis on; and although I have examined very frequently I have never found it, after a test breakfast, below 0.124 per cent. We therefore agree as to a diminution below the normal 0.2 per cent., but not as to the total absence.

Furthermore I have, on getting up in the morning, swallowed one ounce or so of water, and on regurgitating part of it in about two minutes it even then showed distinctly the presence of HCl on applying Günzburg's test.

It seems to me just possible that the regurgitating and remasticating of the food may in the first instance have been an attempt on the part of nature to stimulate reflexly the secretion of gastric juice, considering that it is usually deficient in quality. This, however, is merely a theory, and not, I fear, susceptible to proof.

[1] Ewald: "Diseases of the Stomach," Footnote, p. 19.

Thyroid Extract as a Galactagogue.—Having observed, in conjunction with the good results following the employment of thyroid extract in the treatment of sporadic cretinism, myxœdema, and some cases of mental feebleness, more or less marked increase in the activity of the metabolic processes of the body, Stawell (*Intercolonial Medical Journal of Australasia*, April 20, 1897) was led to believe that the same agent might be reasonably expected to increase the metabolism of the mammary gland in suitable cases. Accordingly he employed thyroid tablets (presumably each representing one grain of dried gland), given from three to five times a day, in nine cases of nursing women, and in seven of these distinct increase in the quantity and apparent improvement in the quality of milk secreted followed.

ON DIGITAL MANIPULATION FOR THE REMOVAL OF A PIECE OF CATHETER OR OTHER INSTRUMENT ACCIDENTALLY BROKEN OFF, AND REMAINING IN THE DEEP URETHRA OF THE MALE.

By JOHN H. BRINTON, M.D.,

PROFESSOR OF THE PRACTICE OF SURGERY AND OF CLINICAL SURGERY IN THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.

THREE times it has happened to me to have an instrument part or break during manipulation in the male urethra. On two of these occasions the instrument was a flexible English catheter of small size, and once it was a filiform, well made from carefully selected whalebone. On the occurrence of such an accident one must act at once; the remedy to be efficient must be prompt. Its necessity is evident not only to the surgeon but to every bystander, and most of all to the patient. I can never forget the wistful expression on the face of the patient of my first mishap, years ago, as I drew from his meatus the anterior fragment of the broken English catheter. "Yes, doctor, I see it has broken off; now what are you going to do about the other piece?"

And this is what I did: Instinctively I placed the fingers of my left hand on the perineum behind the scrotum, and pressing deeply upward and backward, I felt the urethra in front of the bulb. Within its walls I could readily distinguish the broken anterior end of the fragment. Grasping both tightly between my left thumb and index finger, so as to prevent the catheter from slipping toward the bladder, I exerted a dragging force from behind forward in the course of the urethra. By this means the broken end of the catheter started or was drawn forward, apparently half an inch. Then, with the thumb and index of my right hand, I fixed what I had gained, and, moving the left thumb and finger backward, I took a fresh hold and renewed the manœuvre or motion from behind forward, with effect and security. Again and again I repeated this process, each time gaining a little until the ragged upper end of a three-and-a-half inch fragment presented at the meatus.

In a recent instance of a filiform broken four and a half inches from the point the same manipulation was successful. In another case which occurred some years since, the catheter was of such small calibre and had broken so low down that it could scarcely be recognized in the urethra by pressure from without. Here I introduced my right fore-finger into the rectum and then readily detected the point of the catheter in the membranous urethra. I then pressed the end of my forefinger firmly up and against the prostate, so that the catheter fragment might not pass further bladderward. Then, with my left hand resting on the urethra at the scrotal junction, I gently moved my right forefinger in the rectum forward along the membranous urethra. The fragment then moved forward, and so, by a series of alternate motions of the right forefinger, and of relaxation and gripping with the left fingers, the fragment advanced until its progress could be controlled by external manipulations over the anterior penile urethra, whence it was extracted by an ordinary thumb forceps.

I have been lately informed by Mr. C. B. Stevenson, the special nurse of the urinary cases at the Jefferson College Hospital, that in two instances he has, of his own origination, in the same manner successfully removed a filiform which had been lost in the urethra. In both these cases the alternate use of the forefinger in the rectum and of the fingers of the left hand externally over the urethra, as described, brought the errant filiform to the surface.

I may also add that I have satisfactorily employed this method on one or two occasions, in which a patient had broken his catheter in self-catheterization. It is perhaps worthy of note that I have observed clinically that the tendency of a flexible fragment, if left to itself, is to work toward the meatus. This may be due to the direction of the urine flow or possibly to the action of the contractile fibres of the urethra. It is, however, contrary to the generally received opinion that the course of a foreign body, especially if hard and smooth, is inward toward the bladder.

In recapitulation I would state, from my own experience and from cases of which I have knowledge, that in the event of a like recent accident, or in the attempt to remedy one of a previous date, I would first of all insert my finger into the rectum and press against the prostate to prevent the foreign substance from passing deeper. If I could feel it, I would try and work it forward by the alternate movements of the finger of the right and those of the left hand, already described. If the broken portion was lodged in the penile urethra, anterior to the scrotal region, the digital manipulation could be made to act directly upon it, without the insertion of the forefinger into the rectum.

The process I have thus described for the extraction of a retained catheter fragment has, it may be, been used by others. Even if not novel, it is, I think, not generally practised, and I am sure that it may sometimes be resorted to with good effect. It has at least one recommendation; it requires no instruments save those which the surgeon has always with him—his faithful fingers. It has proved of service to me, has spared me some anxiety, and has rendered cutting operations unnecesssary. I therefore submit it, in the hope that it may do as much for some one else.

JUNE 11, 1897.

Clinical Department.

EXSTROPHY OF THE BLADDER IN A GIRL OF THIRTEEN YEARS; OPERATION; RELIEF.

By F. E. TARVER, M. D.,

AUGUSTA, GA.

I MAKE no apology for this paper except the rarity of the case, it being somewhat of an anatomical curiosity.

About twelve years ago a baby was born in Burke County. It soon became rumored that this baby was deformed. I took occasion to call and asked permission to examine the infant. (I had at one time practised for the family.) The request was readily granted. In conversation with the mother I learned that the baby was a girl, and was unlike any she had ever seen. At this time the infant was five or six weeks old, and the mother then had four or five children, all of whom were healthy and perfectly formed.

The infant was exposed for examination, and I found to my astonishment the following condition: The vulva was very large and very much protruded, the labia being widely separated at the top, with a cavity just under the pubic bone, where the urethra should have been. There was a small section of sphincter muscle, but no sign of a urethra; there was an oblong transverse cavity just under the pubic bone, about one and one-fourth inches by one-half inch wide. The labia minora were very prominent and thick; the labia majora were very long and thin, with a V-shaped opening at the top, extending nearly or quite through the mons veneris, and were separated from three-fourths to one inch, just in front of the pubic bone. There was a small strip of bladder tissue lying on top of the vagina and just under the pubic bone, on either side of which the ureters emptied, pouring the water over

the vulva and limbs of the child in an almost continuous flow. The ureters were much elongated. There was no union of the parts from the sphincter of the urethra up through the urethra, bladder, both labia, and upper section of the vulva, and for some little distance in front of and above the pubic bone. The vagina and pubic bone were perfectly formed. The lower part of the vulva was normal. Even at that age there was decided irritation over the parts, which the urine kept continually wet.

The mother asked my opinion, and I advised an operation. She was opposed to that, and called a surgeon from a neighboring town. He thought best to postpone the operation until the child grew stronger.

About six years later I was called to see the child. I found the whole of the inside of the lower limbs excoriated, with ulcers in and around the vulva, and a chronic irritation in and around the oblong cavity before mentioned. Her condition was virtually the same, except that it was greatly exaggerated. The labia majora were much longer, thinner, and very much more separated at the top; the labia minora were immense, very prominent, and lapping together so as almost to cover the oblong cavity. The V-shaped notch in front of the pubic bone was much wider and filled with mucous membrane.

The child was in an awful condition. She never wore dry clothes; she slept in a wet bed; and, as a consequence, was debarred from nearly all the social advantages natural to a child of her age.

I again advised an operation, but my consultant still thought best to postpone. At the age of eight years matters were complicated by the appearance of her menses, which were regular and full, but she did not show the development which usually accompanies this period in a girl's life. I tried every form of urinal, with not only no benefit but often with positive injury. I had several made from original designs, but with no better success.

About this time the consulting surgeon died, and a short time afterward I moved from that neighborhood. The patient then was nine or ten years old, and had begun to appreciate her condition. Last October she was brought to my office. Her parents had consented, if I still advised an operation, to have it performed at once. The patient was willing. She was then so annoyed and embarrassed that she preferred death to long life of this torture. She was now thirteen years old.

I made a thorough examination and concluded that her chances for a successful operation were less than when she was last seen, but there was still some hope of benefit if not of a cure.

I found the patient thin, pale, poorly nourished—ill in every sense of the term. Her condition was very distressing, and the parents were very apprehensive. I again advised an operation, and called Dr. Thomas R. Wright in consultation. After a careful examination he agreed with me.

At this time her condition was an extreme exaggeration of the first, and, while neither of us was very sanguine in regard to the result, we thought we could do little harm in case of failure, and if successful she would have a new lease on life.

Nothing new was revealed at this examination. There was only a small section of the sphincter of the urethra, about one-eighth of an inch long, but no vestige of the urethra. The labia minora had grown larger, more prominent, and were honeycombed in every direction by ulcers; the labia majora were longer, thinner, and much more widely separated at the top of the vulva. The intervening space was filled with mucous membrane. The V-shaped notch that extended through the mons veneris was wider; the transverse opening just under the pubic line was much enlarged. There was a small strip of bladder tissue lying just above the vagina, on either side of which the ureters emptied. The whole vulva was in a state of chronic inflammation, with ulcers scattered not only over the vulva but the whole of the lower limbs.

We could find but few cases of this peculiar defect; as a consequence our operation must be to a certain extent original. Several modes were discussed, only to be discarded as soon as analyzed. We finally decided on the following:

After due preparation we began by dissecting a two-thirds-circular flap out of the mucous membrane in front of and above the pubic bone. This dissection was two inches or more in diameter, and was from above the transverse cavity, continuing down on either side, and wide enough to form the urethra. This was continued down to the section of the sphincter muscle. The dissected flaps were brought together and closed in the usual way, down to the sphincter, through and around which we inserted one or more circular stitches. A glass tube was then inserted through the new-made urethra, and fastened with plaster, etc. Over the end of the glass tube was inserted a rubber tube (one yard in length), filled with water, for the purpose of producing gentle suction on the fluids that would accumulate in the new-formed bladder. This tube emptied into a vessel by the side of the bed, and succeeded nicely. All of this we supported by various forms of bandages and pads. This step in the operation was successful.

We now had the labia to close, the denuded surface to cover, and after dissection to support the new-formed tissue. This was done by carrying the dissection a little higher up in the V-shaped notch, paring the edges of the vulva, trimming the labia minora to normal size, and bringing the whole together with the usual form of stitches, except that we inserted one or two very stout sutures, deep and wide, to support the others. The parts were also protected with the usual form of pads and bandages. This step was also successful.

We began the first step in stretching the bladder by removing the rubber tube and using a cork in the glass one, which was removed every one and one-half or two hours for the passage of urine, and then replaced. During the whole of this time the tube had been duly removed, cleansed, and the bladder thoroughly irrigated with boric acid to prevent the accumulation always so troublesome in these cases. As soon as union was complete, we began to dilate with more energy, and found this the most difficult if not the most serious part of the procedure. This was to stretch or dilate the new-made bladder, which by this time was very much shrunken. We found it very difficult to get a support that was substantial and stationary. After trying various plans with only partial success, we took an oblong cork, cut a hole in the end of it, so as to fit the bottle end of a rubber nipple, which was tightly corked into the hole. The cork was then fashioned to fit the inside of the vulva and put proper pressure on the mouth of the urethra.

After padding with gauze an ordinary condom was stretched over the whole and tied in front and back. This end of the nipple was inserted into the vagina and the cork placed between the labia. We tried to support this with an ordinary T-bandage, but found it would not maintain uniform pressure. We then had a stout belt made, supported by whalebone to prevent wrinkling and to take the place of a T-bandage. To the back of this belt was fastened a four-inch rubber bandage. This rubber was split in front to below the vulva. By crossing these two ends in a certain manner, they gave support to both the cork and the outside of the vulva when fastened in front. When necessary to pass water she could detach the front part

of the bandage and replace it herself. The glass tube was dispensed with, of course, except for the purpose of washing out the bladder occasionally. Within the next three or four weeks with this support she was able to hold her urine from one and one-half to two hours. She has worn this support for about five months intermittently, and is able to hold her urine from three to four hours without it. She usually passes water from two to four times at night, and during the day about every four hours.

She now wears dry clothes day and night. But this is not all. She has undergone the most remarkable change. She is robust, well nourished, and is rapidly acquiring the development, both physical and mental, so long delayed with her. Not only are her parents delighted, but she is one of the happiest little girls in her section.

We look on this case as one above the usual interest, and if our experience shall be the means of helping some one else out of a similar bondage, we shall feel amply repaid.

Progress of Medical Science.

Uræmic Dyspnœa. — Five forms of dyspnœa have been described as occurring in uræmia, viz.: 1, Continuous; 2, paroxysmal; 3, both types alternating; 4, laryngeal; 5, Cheyne-Stokes breathing. The pathology of uræmic dyspnœa has been variously explained, *e.g.*, 1, contraction of the muscles of the smaller bronchi; 2, contraction of minute arterial twigs belonging to the coronary arteries or to the pulmonary vessels; 3, œdema of the lung or accumulation of fluid in the pleural sac; 4, anæmia; 5, cardiac debility and dilatation; 6, the influence of uræmic blood upon the terminations of the vagus nerve, or irritation of the motor fibres which supply the bronchial muscles; 7, direct irritation of the respiratory centre in the medulla by waste products in the blood.—TIRARD.

A Case of Congenital Malaria.—Dr. Winslow (*Boston Medical and Surgical Journal*, May 27, 1897) has reported the case of a male child, ten weeks old, apparently healthy and weighing seven pounds at birth, that did not flourish on its mother's milk and suffered from colic and vomiting. The child slept little, cried a great deal, was constantly moving, and had cold hands and feet. It had become emaciated, pallid, and weak. Various forms of artificial food had been employed, but without permanent benefit. The muscles of the limbs and neck were rigid, the head was slightly retracted, and handling induced crying. While under observation the little patient had a severe convulsion characterized by muscular rigidity, loss of consciousness, clonic spasms, and strabismus, followed by a period of muscular relaxation and stupor. It was now learned that similar attacks had taken place from birth, being always preceded by prolonged crying. The child became so ill that the prognosis was for a time doubtful. The question of malaria was suggested by the family, but, as the temperature had been normal and no periodicity of the symptoms had been observed, the matter was left in abeyance. The mother had had quotidian malaria of a severe type for two weeks preceding the birth of the patient, but treatment had been withheld on account of the existence of pregnancy. The symptoms disappeared at the end of labor. Improvement in the child's condition failing to take place in spite of varied treatment, examination of the blood was made, with the result of disclosing the presence of malarial plasmodia in abundance. The child was given one grain of quinine by enema twice daily, and the convulsions at once ceased, although the muscular rigidity, the sleeplessness, the colic, the constipation, and the restlessness persisted. After a month of such treatment the removal of the child to a non-malarial place was advised. Improvement at once set in, and after a week the quinine was withdrawn and one-fifth-minim doses of Fowler's solution were prescribed. The plasmodia disappeared from the blood, the child gained in weight, and in a short time was quite restored to health. The opinion is expressed that the plasmodia were probably conveyed directly by means of the fœtal circulation, although the possibility of infection through the mother's milk is not to be excluded. As the symptoms were the same up to the time that the diagnosis of malaria was made, it seems evident that the disease existed from birth.

Successful Removal of a Cystic Abdominal Tumor from a Child Aged Seven Months.—Dr. Campbell (*British Medical Journal*, May 15, 1897) has reported the case of a female child, seven months old, born with difficulty, the forceps being applied high up. The infant throve well and was apparently healthy at the age of three months, but about a month later the mother noticed swelling of the abdomen, which gradually increased. Periodic attacks of violent colicky pain also occurred. The general nutrition was good. The respirations were shallow and embarrassed. The abdomen was greatly distended by a lobulated tumor, which was more prominent on the left side, and felt hard in its upper half, but was soft and fluctuating below. There was dulness on percussion all over the abdomen except in the right hypochondriac region, which was resonant. Operation was decided upon, and under chloroform anæsthesia a median incision was made from midway between the ensiform cartilage and the navel to midway between the navel and the symphysis pubis. This exposed a large tumor lying behind the posterior parietal peritoneum and pushing the intestines into the right hypochondrium. The cystic portion having been tapped, the whole mass was enucleated from the subperitoneal tissue. No bleeding of consequence occurred, and no ligatures were needed. The tumor had no pedicle, but was more firmly attached deep in the left side of the pelvis than elsewhere. It lay in front of the left kidney, which was situated at the level of the iliac crest and was freely movable. The peritoneal covering of the tumor was attached to the edges of the lower end of the abdominal wound, and the cavity was packed with gauze. The upper end of the wound was closed by two layers of suture, silk being used for the peritoneum and silkworm gut for the skin and aponeurosis. The operation was well borne, except for a few seconds during the extraction of the tumor, when the pulse became bad, apparently owing to pressure on the cardiac area of the diaphragm. Two hours after the operation the child took milk and barley water, and was thenceforward fed every two hours. Fifteen-minim doses of whiskey were given every half-hour for the first three hours. The child slept well and vomited on one occasion only. On the sixth day the gauze packing was removed and the bowels acted spontaneously. On the eleventh day the silkworm-gut stitches were removed. The wound was then healed except where the drain had been. At the end of a fortnight the child went home. Three months later the silk stitches began to come away. Five months after the operation the child was in excellent health, though all of the silk had not separated. The tumor, which weighed three pounds when fresh, was found to consist of a cyst containing about ten ounces of clear yellow fluid, and of a solid portion in which a mass of cartilage and a piece of bone lay embedded. There was nothing to indicate the organ from which the formation originated.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE BIOLOGICAL BASIS OF MENSTRUATION.

LITTLE is known concerning the phenomena of sexual physiology. The literature on it is very scant. Up to ten or fifteen years ago the universally accepted belief was that ovulation was the cause of menstruation, but a revolution in these views has taken place. Dr. De Sinéty in 1881 cast doubt on the old theory and since that time many have agreed with him, although now there is by no means unanimity of opinion among students on the subject. Various theories have been introduced as to the causation of menstruation, but as yet no definite conclusions have been reached. In a paper read before the Montreal Medico-Chirurgical Society and before the New York Academy of Medicine, Dr. Webster, of Montreal, puts forward the contradictory theories of different authorities, pointing out where he thinks they are wrong, and giving the result of his own observations. To Johnstone in America and to Heape in England much of the credit is due of demonstrating that ovulation is not the cause of menstruation. In this connection Heape examined the pelves of forty-two monkeys (Semnopithecus entellus) during their menstrual periods, and found evidences of ovulation being in progress in only two cases. According to Lawson Tait, removal of the Fallopian tubes, the ovaries being left *in situ*, is followed in ninety-five per cent. of cases by cessation of menstruation. Bland Sutton says, in direct contradiction of this statement, that "the Fallopian tubes exercise no influence on menstruation, and in order to produce artificial amenorrhœa both ovaries must be completely removed." In 1887 Johnstone disproved the long held idea that each menstruation results in the shedding of the entire endometrium, and defines the process of menstruation as a shedding of the superficial layers of the endometrium and as a kindred process to the moult in birds and the shedding of the horns and hair in the deer tribe. He has also advanced the theory, in which he is supported by Tait, that the menstrual act is a special function related to a distinct nervous mechanism. They think that possibly a special nerve trunk running in the upper part of the broad ligament may convey the regulating currents. Webster is inclined to regard the subject from a body metabolism and biological point of view, and thinks that the theory advanced by Geddes and Thomson in their "Evolution of Sex" is worthy of great consideration. This theory holds that the menstrual process is related to the balancing of anabolism and katabolism in the female. If the female sex be preponderatingly anabolic, menstruation is one of the functions of anabolism in the female and is a means of getting rid of the anabolic surplus. Looked at from a biological standpoint, the argument is as follows: Throughout the animal kingdom the distinctive and predominant characteristic of the male sex is katabolism and of the female anabolism. The same distinction is also found in the plant world, and these lines of inquiry are suggested thereby: 1. A study of sexual characteristics in the fully developed state and in the history of the individual. 2. An investigation into the condition of the lowest forms of animal and plant life in which sex has its beginning. 3. Observation of normal and pathological changes in the reproductive apparatus. 4. Experimental inquiry into the nature of the factors which determine sex.

Doubtless there is much opportunity for original research in studying this question from a biological standpoint, and it is possible that here the solution of the difficult problem will be found.

HYGIENE OF THE BARBER SHOP.

THE proposition to make a more careful man of the tonsorial artist, in so far as relates to the transmission of disease from his infected to his well clients, is not a new one. The subject has been written upon by several earnest men before Heinrich Berger, whose "Hygiene in den Barbierstuben" recently appeared in Leipzig. No writer has, however, seemed to go so deeply into the question and lay down such strict rules for the knight of the shaving-knife. We are told that he must be a person free from epilepsy and all manner of seizures, drunkenness, and infectious diseases.

Being free from these affections himself he may give professional attention to all persons, including those under the influence, or those likely to have a fit in the chair, provided they are free from skin, hair, and sexual diseases of an infectious nature. Otherwise they are to be treated at home with their own implements. The author gives a number of other rules which are in themselves and, so far as they go, good—if barbers could be prevailed upon to follow them—but he does not sufficiently insist upon the necessity of boiling to the point of sterilization his instruments, towels, sponges, and especially his own hands.

There are many things besides the so-called barber's itch which may be transmitted in uncleanly shaving and hair dressing, and of which the public knows little or nothing. Favus is decidedly on the increase in this country, and the number of children turned away from the cities' schools for this cause since the inspection innovation went into effect would greatly surprise those who think of favus as a European or foreign affection.

Syphilis is undoubtedly transmitted now and then, through the medium of the barber's armamentarium.

Attention has recently been called by a member of the New York Dermatological Society (*Journal of Cutaneous and Genito-Urinary Diseases*) to the danger of the epilating tweezers used in barber shops. Ingrowing hairs and those attended by suppurative inflammation, as in sycosis, are extracted, and the next comer is operated upon without adequate and usually without any cleansing at all of the instrument. In one instance reported, a chancre of the cheek was attributed to the use of such an instrument, which had probably not been cleaned after being used upon a syphilitic subject. Certain rules should be adopted, if possible, by barbers in general, to protect their patrons from dangers which are more real than imaginary. Above all, they should remember that scrupulous cleanliness of implements and hands is the first requisite, and the advice now being given to surgeons to "boil their hands" applies almost equally to them. At the least they could give a little wash between each "next," for the mere sake of appearances and in the interest of business if for nothing else.

THE EFFECT OF THE DISPENSARY SYSTEM IN LONDON.

In reference to the controversy on the question of the abuses of dispensaries now in progress in this city, it may be instructive to take London as an object lesson and to sketch briefly the effect of the dispensary system there. In London there have been free dispensaries for more than one hundred years, and so long as the system was restricted to free dispensaries and properly supervised it was of great benefit to the poor. Since the introduction, however, of self-supporting dispensaries, some twenty years ago, this happy condition has been totally changed. The truth is now acknowledged on all sides that the self-supporting dispensary system has been a prominent factor in the reduction of medical fees throughout the kingdom. That they were introduced with the laudable object of helping the poor and of fostering in them a spirit of independence is probable, but unfortunately the result has been exactly the opposite. From their inception abuses crept in, and have continued to creep in. Charity was the object of the old free dispensaries; money making appears to be that of the provident. The principle of these dispensaries is nothing more in too many cases than cheap physic. The large class for which they were designed, that between the pauper and the small tradesman, join only in small numbers; on the other hand, the small tradesman and respectable mechanic, who can afford to pay a small medical bill, are supporters of the dispensary, and both the doctor and the patient are sufferers—the doctor in his pocket, and the patient in his self-respect.

These dispensaries have been wholesale propagators of pauperism. Through their means, too, in London and in the other large towns in Great Britain, the cash practice has been introduced, with the consequent irremediable reduction of medical fees. The practitioners in the districts in which provident dispensaries were introduced, in order to compete with them, were compelled in sheer self-defence to build up a clientèle by somewhat similar means, or at any rate to give advice and medicine at an equally low rate. John Stuart Mill said: "There are kinds of labor of which the wages are fixed by custom and not by competition. Such are the fees or charges of professional persons, of physicians, surgeons, barristers, and attorneys. These, as a rule, do not vary; and although competition operates upon these classes as much as upon any others, it is by dividing the business and not by diminishing the rate at which it is paid." When these words were written they were true, but if Mill were alive now what a change he would see, when there is as much cutting among medical men as among tradesmen. Forty years ago in England those who could pay for medical services paid a fee of about a dollar and a half, and for those who could not afford so much there were the clubs and parish doctors. Now the pleasing spectacle is to be seen of highly educated men, graduates of Oxford or Cambridge, selling their skill and medicine for twenty-five cents, and others underselling them at twelve or eight cents. In the last forty years a lowering of the charges for medical services has gone on *pari passu* with the raising of the standard of medical education, so that at this moment medical men in England are probably the best educated and worst paid of any of the professions.

The foregoing is a true account of the manner in which the development of the dispensary system has acted on the medical profession in England. The effect on the general public is just as disastrous; the number of people who seek the aid of medical charity in London is simply appalling.

THE SPITTING NUISANCE.

The arrest and fine of an influential and defiant spitter in one of the street cars of San Francisco is a striking means of educating the public in matters of health and decency. Considering the few offenders who are punished, and the vast number of transgressors who escape, there is a great deal of missionary work to be accomplished. In our own model city, where the antispitting boom took its first bound into favor, the nuisance of promiscuous spitting is almost as bad as ever. The health-board notices do no good whatever. If more arrests were made, it would bring the matter of violation of the ordinance most directly and most forcibly to the attention of the people. A good way to start an efficient crusade against the spitters would be a detail of policemen in citizen's clothes, who should disperse on certain car lines and should immediately arrest every offender caught in the act. One officer in one car of each of the different companies could make a record which would astonish the public and create a proper sentiment accordingly. There is no reason also, for the convenience of such invalids as must expectorate, that properly disinfected cuspidors should not be provided in some out-of-the-way corner of the conveyance, or in the larger cars that some spitting closet should not be set apart for

the spitters. The trouble of getting up to expectorate would oftentimes as effectually settle the question to spit or not to spit, as it would to choose or not the back of the neck of a standing passenger in a packed cable car.

THE PATHOLOGY OF THE DIARRHŒAL DISORDERS OF CHILDHOOD.

From an extended clinical and pathological study at the Kaiser and Kaiserin Friedrich Kinderkrankenhaus in Berlin, Baginsky (*Archiv für Kinderheilkunde*, Bd. xxii., H. 3–6) concludes that the diarrhœal disorders of childhood arising under the influence of high summer temperature are at first only functional in character, consisting in changes in the motor and secretory functions of the gastro-intestinal tract, with abnormal digestive chemism. In their further course profound anatomical alterations take place in the walls of the stomach and bowels, which may range between catarrh and necrosis of the mucous membrane. The follicular changes are processes of peculiar character and independent of the catarrhal, with which they may in the course of time be associated. They lead sometimes, in addition to superficial changes, also to ulceration. These changes are attributable not to specific bacteria, but to the ordinary saprophytic micro-organisms of the intestinal tract that assume especial virulence. Under peculiar circumstances other bacteria not ordinarily found in the intestinal tract may act as causes of diarrhœal disorders. These also induce profound anatomical changes in the walls of the bowel. The invasion of other organs by these bacteria is not unusual, but is rather relatively common with regard to the kidneys. Under these circumstances the bacteria may cause profound anatomical lesions, even to the extent of suppuration. The transmission does not usually take place through the blood stream, the bacteria being but rarely found in the blood, and then only in small numbers. The most profound disturbances are occasioned by the fermentative products of bacterial activity, toxic or non-toxic. These are either of the nature of acids or products of albuminous degeneration, down to ammonia and its combinations, which behave as active irritants and thus cause injury to the walls of the bowel. Further, through the blood current and the lymph stream they exert a degenerative influence upon other organs, especially those possessed of excretory functions, such as the liver, the kidneys, etc. Under the influence of this intoxication from the intestinal tract the resistance of the whole organism to the invasion of other pathogenic micro-organisms is diminished, as is manifested by numerous complications.

The Medical League, whose worthy aim is to suppress the glaring abuse of dispensary and hospital charity, is growing. It has recently established a branch in Brooklyn and gives promise of keeping up its aggressive warfare until the enemy is routed, and the dispensing of charity is confined within proper and decent limits.

News of the Week.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending July 3, 1897. July 1st.—Assistant Surgeon J. F. Leys detached from the *Vermont*, July 6th, and ordered to the *Helena*, July 7th. Assistant Surgeon C. E. Riggs ordered to the *Vermont*, July 6th.

The Tri-State Medical Association of Western Maryland, Western Pennsylvania, and West Virginia will meet at Bedford Springs Hotel, Bedford, Pa., on Thursday, July 15, 1897. An attractive programme is promised.

A Congress of Colored Physicians has been called to meet in Washington on July 21st–23d. The object of the promoters of the meeting is to form a National Medical Association of Colored Physicians. But "it is not the aim of the association to conflict with white conventions of physicians, nor to decrease the interest of colored physicians in those white organizations to which they may belong; it is simply wanted for a promotion of fraternal interest among the colored professional men." It is estimated that there are about two thousand colored physicians in regular practice in the country. Dr. John P. Golden, of Allegheny, Pa., is one of the originators of the movement.

Paul F. Mundé, M.D., LL.D.—At its recent commencement, it being also the centenary of the medical school, Dartmouth College conferred the honorary degree of LL.D. on Dr. Paul F. Mundé.

The British Medical Temperance Association.—At the recent annual meeting of this association, the president, Dr. Sims Woodhead, in his inaugural address, pointed out how medical men had influenced the temperance movement. He referred to the pathological degradation observed after the ingestion of repeated moderate quantities of alcohol, and commended the work of the Society for the Study of Inebriety and the British Medical Temperance Association as worthy the support of the members of the profession. The membership of the association is now four hundred and fifty-three.

Prof. W. T. Engelmann, of the University of Utrecht, has been called to the chair of physiology at Berlin rendered vacant by the death of Dubois-Reymond.

Plague (?) in Constantinople.—A report from Sofia says that Bulgaria has established a two-weeks' quarantine against travellers from Turkey, because of an outbreak of the plague at Constantinople.

College of Physicians of Philadelphia.—At the concluding meeting for the season of the section on general medicine of the College of Physicians of Philadelphia, on June 14th, Dr. H. A. Hare read a communication on "The Value of the Various Preparations of Digitalis," and Dr. J. C. Wilson "A Brief Statistical Paper on Enteric Fever Based upon One Hundred and Fifty Hospital Cases."

Dr. Henry C. Coe has been appointed to the new chair of gynæcology at Bellevue Hospital Medical College.

"The Pittsburg Medical Review," having been made the official organ of the Medical Society of the State of Pennsylvania, has become *The Pennsylvania Medical Journal.* The new journal, like the old, will continue to be published in Pittsburg. The greatest good that we can wish the journal under its new name is that it will be the equal in excellence of its former self.

A Disastrous Fire.—Shortly after the close of a brilliant reception given some time ago at the house of Dr. B. Sherwood Dunn, in Los Angeles, fire broke out, and before the department could respond and get a stream upon the flames the entire structure was consumed, together with its contents, including many valuable paintings, bronzes, and tapestries collected by Dr. Dunn during his residence in Paris.

International Deaf-Mute Congress.—A convention of educators of deaf-mutes is to be held in Glasgow on July 28th–31st, and will be immediately followed by an international congress of deaf-mutes in London, August 3d–9th.

Tuberculin in France.—According to French law the sale of serums is authorized only after the Academy of Medicine has given its approval to samples and inspected the laboratories where they are prepared. This law was passed to prevent all sorts of serums being put forward by druggists without any guarantee of asepsis or strength. Very few laboratories obtain the necessary certificate. Koch's tuberculin, the Paris correspondent of *The Lancet* writes, to have the right of entry in France for sale, has had to undergo the judgment of the academy, based upon the report of M. Nocard, the assistant director of the Pasteur Institute. The report commenced by saying that any French product produced under circumstances precluding the academy from any surveillance as regards the conditions of its manufacture would certainly be refused. The sample sent in amounted to one cubic centimetre, enough for only one experiment, and the liquid was turbid and full of bacteria and yeast fungi. The bacteria were very possibly not pathogenic; but their presence was not reassuring, for it would appear to show that the liquid was not prepared under aseptic conditions, and even if the organisms did no harm to the patient they would probably weaken the power of the serum. The academy, fearing that a refusal of the authorization would be attributed to national jealousy, has authorized the introduction of the lymph provisionally, despite the report of M. Nocard. Many of the papers have published articles expressing regret at this decision.

Obituary Notes.—Dr. Ira B. Read, of this city, died of pulmonary tuberculosis on July 4th. He was born at Norwalk, Ohio, and was a graduate of the University of Michigan in 1867, and of the Bellevue Hospital Medical College in 1868.—Dr. McD. M. Powell, of Collinsville, Ill., shot himself on June 20th. He was thirty-four years old, and was a graduate of the St. Louis Medical College in 1886.—Dr. James Cavanaugh died at Easton, Pa., on June 28th, at the age of sixty-seven years. He was graduated from the medical department of the University of Pennsylvania, in 1850, and was at the time of his death president of the local United States pension examining board. He was for many years physician to the Northampton County prison and surgeon to the Central Railroad of New Jersey.—Dr. W. H. H. Hutton, of the Marine Hospital service, died on June 14th. He was born in York, Ohio, in 1838. He served in the union army during the civil war. He attended his first course of medical lectures at the Alabama Medical College, at Mobile, and on March 16, 1875, was graduated from the Chicago Medical College, Chicago, Ill., receiving from this institution the first prize of the faculty for the best graduating thesis. He was appointed assistant surgeon in the Marine Hospital service, in 1875, and was promoted to the grade of surgeon the following year. During his connection with the Marine Hospital service, he served as commanding officer at the stations of New York, Cincinnati, New Orleans, Detroit, Louisville, Mobile, and Baltimore. In addition to the above duties he rendered valuable service at Brunswick and Way Cross, Ga., and Camp Perry, Fla., in 1888, in enforcing the quarantine and other measures during the yellow-fever epidemic of that year, and again at Brunswick, Ga., during the yellow-fever epidemic in 1893. At Camp Perry he installed and was in command of the first detention camp, which proved so successful in the management of the epidemic at that time raging in Jacksonville. He was also in charge of the quarantine establishment at Sandy Hook, N. J., during the cholera scare in 1892, and later in the same year rendered efficient services in the establishment of the quarantine flotilla at Cape Charles.—Dr. Richard Smith Bacon, for many years head master of the Columbia Grammar School, died at his home in this city on July 6th. He was a graduate of the College of Physicians and Surgeons in this city, but practised medicine only about a year.—Dr. John B. Carpenter died June 17, 1897, at Groveton, N. H., aged thirty-five years. He was a graduate of Buffalo Medical College in the class of 1893. He practised two years in Washington, D. C., and two years in Groveton. He was a member of the Medical Association of the District of Columbia, and also a member of the New Hampshire Medical Society.

Epidemic Ophthalmia.—It is reported from Hamburg that granular ophthalmitis prevails there to an alarming extent among the school children.

Trouble at the Collins State Hospital.—It is reported that the selection of Dr. Daniel H. Arthur, of Middletown, as superintendent of the Collins State Homœopathic Hospital of Erie County, by the board of managers of that institution, to succeed Dr. G. Allen, will not be recognized by the State lunacy commission until the courts have passed upon the legality of the action taken by the local board in dismissing Dr. Allen. The matter must be taken to the courts very soon, as the Collins Hospital cannot be

run without money obtained through the lunacy commission. Dr. Allen has engaged counsel and will contest the right of the managers to remove him. The newly appointed superintendent is enjoying a leave of absence until the question of his legal existence as a superintendent is determined.

The American Medical Temperance Association held a meeting on July 5th, at Prohibition Park, Staten Island, under the presidency of Dr. T. D. Crothers. Most of the speakers held that the use of alcohol in medical practice is not only unnecessary but harmful. One of them was reported, we trust incorrectly, to have said that one grain of wheat contained more nutrition than a keg of beer. It is regrettable, for the sake of the cause which they advocate, that so many temperance orators say, or are reported to say, things that are absurd and untrue.

The Late Dr. J. Lewis Smith.—It is with sorrow that we record in the minutes of the faculty of the Bellevue Hospital Medical College, the death on June 9, 1897, of Dr. J. Lewis Smith, late clinical professor of diseases of children. Dr. Smith was a teacher in the college for thirty years. He brought to his instruction a ripe experience and sound judgment, and had attained a most enviable reputation, not only as a public teacher but as a voluminous writer on the subjects of his special studies. His loss will be deeply felt, not only by the profession but by the public at large, who benefited so much by his skill and devotion. AUSTIN FLINT, *Secretary.*

Cheating at State Medical Examinations.—From the State of Pennsylvania comes the report that in connection with the recent examinations held in Philadelphia of applicants for license to practise medicine unsuccessful attempts were made to secure in advance by subterfuge copies of the questions that were to be put. One of the applicants was not permitted to conclude his examination on account of being detected in the possession of printed questions which had been secured for the purpose of illegitimate aid.

The Dispensary Abuse in Pennsylvania.—The medical board of each of the three hospitals of Reading, Pa., has appointed a committee of three "for the purpose of formulating a code of rules under which the pecuniary interests of the medical profession can be protected without prejudice to the deserving poor." Among other things it is alleged that "persons in well-to-do circumstances are in the habit of accepting medical and surgical services at our charitable institutions free of charge."

J. M. Da Costa, M.D., LL.D.—At the annual commencement of Harvard University, on June 23d, the honorary degree of doctor of laws was conferred upon Dr. J. M. Da Costa, of Philadelphia.

Chautauqua County (N. Y.) Medical Society.—The annual meeting of the Chautauqua County Medical Society will be held at Chautauqua Assembly, Tuesday, July 13, 1897, and will be called to order at 11 o'clock A.M. The annual election and other routine business will be transacted, including the voting upon the amendment to the constitution relative to the time of holding the semi-annual meeting. The president is Dr. E. S. Rich, of Kennedy, and the secretary Dr. C. A. Ellis, of Sherman.

Examinations for the Army Medical Corps.—An army medical board will be in session at Washington City, D. C., during October, 1897, for the examination of candidates for appointment to the medical corps of the United States army, to fill the five existing vacancies. Persons desiring to present themselves for examination by the board will make application to the secretary of war, before September 1, 1897, for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to his citizenship, character, and habits. The candidate must be between twenty-two and twenty-nine years of age, and a graduate from a regular medical college, as evidence of which his diploma must be submitted to the board. Successful candidates at the coming examination will be given a course of instruction at the next session of the Army Medical School, beginning November 1, 1897. Further information regarding the examinations may be obtained by addressing Dr. George M. Sternberg, Surgeon-General, United States Army, Washington, D. C.

The Senn Surgical Prize.—A medal, to be known as the Nicholas Senn prize medal, will be awarded at the annual meeting in 1898, to that member of the American Medical Association who shall present the best essay upon some surgical subject. Two other essays, if any are worthy, will receive honorable mention. The conditions of the competition are as follows: 1. The name of the author of each competing essay shall be inclosed in a sealed envelope bearing a suitable motto or device, the essay itself bearing the same motto or device; the title of the successful essay and the motto or device to be read at the meeting at which the award is made, and the corresponding envelope to be then and there opened and the name of the successful author announced. 2. All successful essays become the property of the association. 3. The competition is to be confined to those who at the time of entering the competition, as well as at the time of conferring the medal, shall be members of the American Medical Association. 4. The competition will be closed three months before the next annual meeting of the American Medical Association, and no essays will be received after March 1, 1898. Competitors will address their essays to Dr. J. McFadden Gaston, 1½ Edgewood Avenue, Atlanta, Ga.

Some Colored Scalawags, who swindled a number of medical men in this town last year by soliciting alms for the support of an alleged school in Virginia, have at last come to grief. They approached a num-

ber of clergymen, who are more conversant with wickedness of that sort than the innocent and guileless doctor, with the result of falling into the hands of the police.

Mississippi Department of Public Health.—A bill has recently passed the Mississippi legislature providing "that the Mississippi State Medical Association and all other State, district, and county medical societies and associations of the State in affiliation with the purposes of its organization, are hereby constituted the 'Mississippi Department of Public Health' and any licensed practitioner of medicine in the State of Mississippi, who is a graduate of an approved institution of medicine, may on application have his name enrolled as a member of said department." The duties of this department are, through its committees, to exercise a general superintendence over the health interests of the State, the collection of vital statistics, and the development of medical literature; to prescribe rules and regulations, with a specification of duties, for the conduct and reports of said committees; to investigate and report upon the hospitals, asylums, and other like institutions in the State; to take cognizance of and make recommendations for the interest of health and life among the people generally; to investigate the causes, means of prevention, and treatment of endemic and epidemic diseases; to investigate the influences of localities and employments upon the public health; and to act as an advisory board to the State in all hygienic and medical matters.

A Medical Mayor.—Dr. M. Gibson Porter, a graduate of the University of Maryland, has been elected the second time as mayor of the town of Lonaconing, Md.

The Superintendent of the Molokai Leper Colony, Mr. H. R. Meyer, died recently of heart disease. He was a resident of the island at the time the colony was established, and was its superintendent for many years.

The Chalfont Epileptic Colony.—Mr. Bayard, recently United States ambassador at the Court of St. James, laid the foundation stone of the new Home for Men, presented by Mr. Passmore Edwards to the National Society for the Employment of Epileptics at the Colony Chalfont, St. Peter, Bucks, on Thursday, May 6th, at three o'clock. Mrs. Bayard opened the Home for Women at the colony, also the gift of Mr. Edwards, on the same day.

Jefferson Medical College.—A scientific meeting of the Philadelphia Chapter of the Alumni Association of the Jefferson Medical College was held in the college building on May 10th. Dr. John Lindsay read a paper on "The Treatment of Acute Anterior Urethritis in the Male," in the discussion of which Drs. J. Chalmers Da Costa and Orville Horwitz took part. Dr. Addinell Hewson was elected *President;* Dr. J. L. Salinger, *Corresponding Secretary;* Dr. W. M. Sweet, *Recording Secretary;* and Dr. J. A. Cantrell, *Treasurer.*

Baltimore County Medical Society.—The physicians of Baltimore County, Md., have formed a County Medical Society, and it is expected that such societies will be formed in the other counties not already having them.

An Accusation against Harvard.—Mr. Moody, the evangelist, is reported by the daily press to have asserted, in the course of an address in Boston, that Harvard University, the Medical Department in particular, is a sink of moral iniquity. As well might one say that the Methodist Church is a hotbed of immorality because a Methodist minister was dismissed from his pastorate a few days ago for the reason that he was the father of his servant's infant. Mr. Moody is not the only one who seems to think the cause of religion can be helped by intemperate statements, the exaggeration in which borders very closely on the deliberately spoken untruth.

A Great Man Gone.—A most successful maker of quack medicines in Berlin recently committed suicide while suffering from religious mania. His income from the sale of his remedies was estimated at over $50,000 a year.

Private Hospitals in Berlin are threatened in their existence by the new regulations issued by the Prussian government. According to these, no building used in whole or in part as a hospital can have a courtyard enclosed on all four sides; the corridors in all hospitals must be at least 1.8 metres (five feet ten inches) in width, the staircase must be of a certain width, and the steps of a certain prescribed height, and no room with none but north windows can be occupied by patients. These and other regulations, if strictly enforced, will make it impossible to use any apartment for private hospitals, and those surgeons who wish to maintain those they now have will be forced to erect special buildings—a serious matter in Berlin, where land is very expensive.

English Bacteriologists are apparently held in as slight esteem by the government of Cape Colony as English ophthalmologists are by Queen Victoria. Koch was hired to go there to study the rinderpest, and now Kolle, of the Berlin Institute for Infectious Diseases, has received a year's leave, says the *Medical Times*, in order to proceed to Cape Colony, where he has been commissioned by the Cape Government to carry on the work of Professor Koch. He will continue the investigation into rinderpest and leprosy, and organize stations for the study of those diseases.

The Maryland Homœopathic Hospital in Baltimore is to be rebuilt on the site of its present building, which is much too small to accommodate all the applicants for admission. The proposed building is to be five stories high, with a basement, and a frontage of one hundred and fifty feet by a depth of sixty. The cost will be from $80,000 to $100,000, and will be raised by subscripion, as the institution is wholly a charitable one. During the past year there were five hundred patients treated at the hospital, and fourteen thousand prescriptions were put up.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

SECTION ON PRACTICE OF MEDICINE.

J. H. MUSSER, M.D., PHILADELPHIA, CHAIRMAN.

(Continued from page 2.)

Thursday, June 3d—Morning Session.

The Application of the Roentgen Rays to Medical Diagnosis.—DR. C. L. LEONARD, of Philadelphia, was the author. The chief advantage of the radiographic method over previous methods was in the fact that it formed real images, whereas only mental pictures existed before; it eliminated the personal equation of the observer from the question of diagnosis. The radiographs could be retained for comparison with others of similar conditions. The application in medicine was considerably different from that in surgery. The results thus far had not been so brilliant, but the field promised to be even greater than in surgery. The author showed radiographs of certain diseased conditions in the thorax, abdomen, and pelvis. It was of value in outlining aneurism of the aorta. In one case it showed that the subclavian could be ligated at the point of election for an existing aneurism without involving the tumor. In a case of dilatation of the heart the walls were so thin that the light penetrated them easily. In a case of dilatation of the stomach the organ was washed out and a solution of bismuth salts injected, lining the interior of the cavity; the shadow cast by these salts was deeper than that of the pelvic walls, thus enabling an observer to map out the area of the stomach. In a case of fluid in the peritoneum, this was shown by deeper shadow, the shadow changing its position with the movement of the fluid. In the same case a button was supposed to be in the stomach, but its absence was proven.

Tuberculosis Antitoxin.—DR. E. A. DE SCHWEINITZ, of Washington, gave a *résumé* of experiments made in the production of a tuberculosis antitoxin. Briefly, such a substance could be produced, though in small amount, which would protect an animal from a fatal dose of tuberculin or which would retard a fatal issue from the usual time of three or four weeks to ten or twelve weeks. If he might judge from his own results and a study of those obtained abroad, it was possible that an antitoxin could be produced for tuberculosis, but treatment by this method was still in the experimental stage and would probably remain so until it became possible to protect guinea-pigs against tuberculosis and cure them when infected, as was done in the case of diphtheria with diphtheritic antitoxin.

Antituberculin.—DR. J. MCFARLAND, of Philadelphia, said his paper contained the results of experiments similar to those of the last reader, only he had devoted more attention to antituberculin. He first gave reasons for his belief, entertained from the first, that tuberculin must fail. Among these was the pathological fact that tuberculosis was an inflammatory, not a toxic condition. Many cases progressed to the extent of producing considerable destruction of organs before constitutional conditions manifested themselves. Finally, when the tuberculous nodes began to disintegrate, other germs appeared. The reader disclaimed originality in the use of antituberculin, mentioning the work of Paul Paquin and others. It was not irrational to suppose that it might add to the resistance of the tissues, or prevent breaking down of those in which the tubercle bacilli were encapsulated, thus limiting their spread to others. In doing this it would slow the pulse, stop hectic, etc. The animals which he had experimented upon had not recovered, but life seemed to have been prolonged. Moreover, guinea-pigs, it was to be remembered, were extremely susceptible to tuberculosis, and because an agent might not be altogether successful in them it did not prove that it would not be in man. The guinea-pigs on which he had practised immunization longest were still alive, but he could not say that they had not tuberculosis, since there were enlarged glands. He had found the tuberculin harmless in both healthy and tuberculous guinea-pigs. In man the remedy had been applied systematically in about twenty cases. He thought one could be reported as cured, one as very encouraging, one as distinctly better, three decidedly improved, five improved somewhat, seven not definitely changed, two worse; three subjects had died, but not because of the treatment. Urticaria was almost uniformly present, which might be accounted for by the fact that serum of the ass was used, which was more irritating than that of the horse. There was some pain in the back and jaw.

A Report on Treatment of Tuberculosis.—DR. D. L. ROCHESTER, of Buffalo, gave some experience with different methods of treatment of tuberculosis, including the use of Paquin's tuberculous antitoxin, Vaughan's nuclein, and Edson's aseptolin. When criticised for mentioning the latter he said he had used it soon after the paper describing it was first published and at the request of the patients themselves. The number of cases treated with it was nine, with four deaths, one, he thought, as a result of the agent used. In no case could he report a cure, and when improvement had taken place it could be attributed to other factors, especially that of living out of doors. Paul Paquin's tuberculous antitoxin was of no value when phthisis was at all advanced, and he had been compelled to discontinue it by the patients themselves, because of dermatitis and pain. As to Vaughan's nuclein, it had been a benefit in all cases but one. It did no harm if the injections were not too rapidly increased. One patient recovered, although there was a cavity at the beginning of the treatment two years ago. Yet without exercise and fresh air all efforts must count for naught. The author considered treatment of special symptoms, cough, anæmia, etc.

A Further Report on the Treatment of Tuberculosis by Iodoform Inunctions.—DR. L. F. FLICK, of Philadelphia, referred in this paper to one which he had read before the Philadelphia County Medical Society, on the use of iodoform inunctions in tuberculosis, he having begun its use about eight years ago. The conclusions drawn from over one hundred cases were that it was unsafe to form an opinion of a treatment of tuberculosis within a short time after its commencement. Unless the case had stood the test of a cure a number of years it could not be placed among the cures. He was now compelled to report many of his patients as dead whom he had reported cured two or four years ago. Mere increase in weight and improvement in symptoms were no evidence of permanent cure of tuberculosis. In his earlier cases he must report at least eighty per cent. mortality to-day.

DR. S. SOLIS COHEN discussed the several papers. He could not agree with the last reader that a remedy could not be said to have cured tuberculosis should the patient die years afterward. There might be reinfection. Then a remedy might be of great value in causing improvement, prolonging life, and checking the active process of the disease.

Thursday, June 3d—Afternoon Session.

Curability of Pulmonary Tuberculosis.—DR. E. B. BORLAND, of Pittsburg, read a paper on this subject. Evidence was accumulating which went to show that tuberculosis was not only a universal disease but the

universal disease. Twenty-five per cent. was much too low an estimate of the total number of infections. The author quoted autopsy statistics from which he concluded that fully fifty per cent. of the people were infected at some period of life, two-thirds of them with the pulmonary form. Now, since the total death rate gave only fourteen per cent. as due to tuberculosis, it became evident that the disease was not so very fatal. There must be many spontaneous cures. Not a single antitoxin having been discovered to cure the affection, the physician would do well to make the best use of older methods. Tuberculosis uncomplicated by sepsis could be considered a curable disease in the sense of being held in abeyance, provided the vital resistance of the individual were kept up to the normal standard. Nature had been known completely to eradicate tuberculosis in a number of instances. Nothing could prevent infection when three conditions were present—debility, abrasions, tubercle bacilli.

Dr. Denison, of Denver, approved of the work of de Schweinitz, McFarland, Trudeau, Klebs, and others in searching for a tuberculin or an antituberculin. He himself had been accused of getting results during trials with some of these which it was claimed were due to the influence of climate. Still he approved of such researches.

Dr. Klebs, of Citronella, thought it would be a dangerous conclusion to infer that experiments with tuberculin, etc., made in laboratories were without value, and that we must limit ourselves to clinical observations, for it would stop scientific research. Tuberculosis was so various in its manifestations that long observations in experimental research were neces sary to establish the value of a remedy against it. Dr. Klebs thought the State should erect institutions for the treatment of tuberculous patients, as in them they could best be taught to carry out hygienic measures, proper disposal of the sputa, etc.

Dr. Herrick, of Cleveland, could not accept fully the idea of tuberculosis being due to infection, but was inclined to regard it rather as a disease due to disturbances of the blood-making processes. He should never look for a specific agent against tuberculosis. We must go back to the physiological principle in treatment and prevention.

Dr. Sternberg expressed his surprise at hearing a doctor speak to-day with doubt regarding the infectiousness of tuberculosis. He then briefly gave the proofs of infection by tubercle bacillus.

Others who discussed the papers on tuberculosis were Drs. Alten, of Kansas City, Upshur, of Richmond, Tyson, Paul Paquin.

Some Deformities of the Chest in the Light of Its Ancestry and Development.—Dr. Woods Hutchinson, of Buffalo, spoke on this subject. There were two forms of chest: 1, the quadrupedal, in which there was great antero-posterior development; 2, the chest in which the lateral expansion seemed to have gone on at the expense of the antero-posterior development. The former existed in dogs and lower animals with the exception of the bat. As one approached man the lateral expansion became greater. Dr. Hutchinson explained the development of the chest of lateral expansion by man and his nearer ancestry assuming the upright position and swinging by the arms. Taking 100 as the basis, the following index was given: Proportion of depth to breadth of chest in man, 71; dog, 125; fœtus, 103; infant, 87; tuberculous chest, 77. The index for length was also given. In chests showing a tendency to become diseased, especially with tuberculosis, we saw a narrow chest, one showing a tendency toward the ancestral type. He had at one time accepted without investigation the notion of a flat chest in tuberculous patients, but on investigation had found that this flatness was always, or nearly always, only seeming; that there was in reality less breadth than normal, and the apparent flatness was due, he thought, to lack of flat surface on which the shoulders could rest, these rolling forward and giving a hollow appearance across the chest. Reversion to the primitive type in circumstances not suitable to it was the starting-point for disease. The explanation of the fact that the lung was the organ most frequently attacked by disease, especially by tuberculosis, was that in the light of ancestral development it was the youngest organ of the body.

Management and Treatment of Malignant Types of Croupous Pneumonia.—Dr. D. S. Campbell, of Detroit, discussed in a general way the treatment of croupous pneumonia, dividing the cases into two classes—the mild ones which required little treatment, and the severer ones in which there was high fever with tendency to heart paralysis. It was in the latter that he had found cold the most valuable heart stimulant and antipyretic. Cold applications were usually indicated, but in very obstinate cases the cold bath should be employed.

Dr. H. O. West, of Galveston, thought the author had emphasized too strongly the purely mechanical effects of pneumonia and the fever element, and had overlooked the toxic influence.

The Hot Bath in the Treatment of Pneumonia.—Dr. J. Eichberg, of Cincinnati, read a paper in which he praised highly the effects of the hot bath used systematically in the treatment of pneumonia. At first he had used it as an antipyretic, repeating it only when the temperature rose above 103° F., but subsequently repeated it every three hours, regardless of the temperature. It had a marked influence on the nervous symptoms, one of which was undefinable unrest, which it caused to disappear; the pulse improved, delirium subsided, the respirations diminished; the patient was enabled to sleep. The temperature of the bath was from 90° to 110° F., according to circumstances; it was continued ten minutes.

Cheyne-Stokes Respiration.—Dr. N. S. Davis, Jr., of Chicago, read a paper on this subject, describing characteristic Cheyne-Stokes respiration, mentioning errors in diagnosis, then referring to treatment. He had found much literature on the subject, principally theorization regarding the cause, and little as to treatment. In chronic cases with weariness of respiration this was important, yet his own success seemed not to have been great, and he had tried various drugs, such as nitrites, strychnine, etc. The latter, strychnine, had given him very little result. Cheyne-Stokes respiration occurred at times in various maladies, but most frequently in uræmia and cerebral affections. It had also been produced experimentally. Its exact nature was unknown. Undoubtedly the best treatment was that directed against the maladies causing it.

Multiple Neuritis Following Influenza.—Dr. H. B. Allyn, of Philadelphia, expressed the opinion in this paper that influenza was not an infrequent cause of neuritis, sometimes of multiple neuritis. Personally he had seen more cases of neuritis in influenza the past year than in the previous five years, and more in mild cases of influenza than in severe ones. It was probable that some cases of supposed neuralgia were cases of a moderate degree of neuritis.

A Case of Acute Lymphatic Leukæmia with Streptococcus Infection.—Dr. J. B. Herrick, of Chicago, reported the case. The patient was a saloon keeper, twenty-seven years of age, who had been quite well a few weeks before Dr. Herrick saw him; he was then under the care of a physician who stated that he first had a sharp attack of sore throat, with recurrence after a week, and then rapid enlargement of the glands of the neck, axilla, and groin. The spleen was enlarged. He was under Dr. Herrick's observation only three

days before death. Besides lymphatic enlargements and increase in the size of the spleen, there were numerous retinal hemorrhages, pallor of skin and mucous membranes, hemorrhagic tendency particularly marked in the nose, and malaise. The blood was examined once, and showed great increase in the white cells compared with the red. Streptococci were found, and the question arose whether the acute leukæmia was due to streptococcus infection in the throat. It seemed quite certain that leukæmia had not existed prior to the throat infection.

Chronic Inflammation and Ulceration of the Duodenum, with Resultant Reflexes.—Dr. J. M. Alten, of Kansas City, Mo., related in this paper clinical and pathological observations with regard to chronic inflammation and ulceration of the duodenum and resultant reflexes. This condition of the duodenum was very frequent, according to his studies, but had received very little attention from authors of textbooks. He thought he did not exaggerate when he stated that in his experience as many as five or six hundred cases in which there was a question between duodenal and gastric trouble had come to autopsy and a decision was rendered from gross and microscopical appearances. A very common cause of various reflex nervous symptoms, including such grave conditions as epilepsy, melancholia, and insanity, was chronic inflammation and ulceration of the duodenum. The most common origin of the latter was in typhoid fever, and it was seen in phthisis pulmonalis, chronic dysentery, acute irritation, etc. He had investigated thirty cases of diabetes mellitus, in all made a diagnosis of chronic inflammation of the duodenum, and confirmed it by autopsy in seven. Was the relation between the two direct, through interference with the digestive function in the duodenum, or was it indirect, through reflex interference with the nervous mechanism controlling sugar formation? Treatment included attention to gastric and rectal feeding. Epilepsy of this origin could be cured if treatment were begun before the second year of its existence.

Dr. Boardman Reed queried whether some of the cases might not have been due to disturbances of other portions of the gastro-intestinal tract and the nervous symptoms caused by toxæmia, instead of being reflex.

Dr. Alten did not believe that there could be absorption of toxins in the gastro-intestinal tract without a lesion of the mucous membrane. It was against reason.

Friday, June 4th—Morning Session.

Discussion on Gout.—The discussion on this subject was opened by Dr. Woods Hutchinson, of Buffalo, who spoke more particularly from the point of view of ancestral development. Attention was first called to the universality of gout, not only in man but also in the higher species of animals. As Sydenham had said, gout is the lord of disease and the disease of lords. It had been said that it did not exist much in our new country, but this was an erroneous impression, due to its manifesting itself usually in forms more or less different from that in the classical cases of England. Dr. Hutchinson mentioned some of the lithæmic forms of gout manifested in dyspepsia, neuralgia, hay asthma. Rheumatism—well, all we could say about it was that outside the acute inflammatory variety two-thirds of it was gout and the other third we knew nothing about. Gout also manifested itself in gynæcological affections, conditions of the larynx, degeneration of the arteries, leading to Bright's disease of the kidneys, etc. What was lithæmia? It must be something allied very closely to the normal processes of the body, or by its multitudinous manifestations it would soon exterminate the individual. It was a bad habit, a kind of alcoholic habit, so to speak, which the tissues had of falling into. It was a partial reversion to the avian or reptilian type in the metabolism of the cells. The same elements produced by the ultimate metabolism of our bodies caused in us gout, while in birds or reptiles it was in harmony with the normal health, and gout in them was the result of a further reversion. The same law could be traced even to plants. Treatment consisted in the employment of any means to keep the tissues up to the highest possible degree of metabolism and vigor. Exercise, more exercise, more exercise! "Live on a shilling a day and earn it!"

The Gastro-Intestinal and Hepatic Relations and Manifestations of Gout.—Dr. Charles Stockton, of Buffalo, read a paper on this subject. In his conclusions he stated that gout was a disease to which certain individuals were predisposed, and which depended for its development upon causes largely unknown. Laziness, full nitrogenous diet, and the use of fermented liquors predisposed to the disease. So-called lithæmia, as the term was commonly applied, was not gout, but an auto-intoxication dependent upon gastro-intestinal derangement. The relation of the food to gout should be carefully ascertained in each case.

The Ocular Manifestations of Gout.—Dr. Charles A. Oliver, of Philadelphia, stated in his paper that all of the tissues of the eye might manifest gouty inflammatory conditions, and then considered these in detail, beginning with the lids and conjunctiva and proceeding to the retina and optic nerve. In gouty inflammation of the lids, more especially of the upper lid, there was swelling, tumefaction which came on quickly and passed away quickly. For this condition he would say use heat, heat, and more heat. He found several calcareous infarcts in the conjunctiva near the Meibomian glands of one man who refused to believe until these had been shown him that he was gouty. Soon afterward he had gouty joints. Gouty manifestations in the eyes often caused lancinating pains, quickly disappearing. They seldom caused ulceration. Inflammation in the back of the eyeball sometimes extended to the optic nerve itself, even as far as the chiasm.

The Relation of the Alloxur Bodies to Gout, or a Uric-Acid Diathesis, with Demonstration.—Dr. T. B. Futcher, of Baltimore, read a paper with this title. The conclusion from his experiments was that it was very doubtful whether there was any connection between the abundance of the Neisser granules in the blood and the alloxur bodies in the urine, and the blood of persons free from gout contained as many of the granules as that of gouty subjects.

The Relation of Uric Acid to Neurasthenia.—Dr. F. S. Pearce, of Philadelphia, arrived at nine conclusions of considerable length in this paper, which, so far as the relation of uric acid to neurasthenia was concerned, admitted such relation in some cases the full nature of which we did not understand. Diet had much to do with the matter, but underlying it all in many instances was a hereditary instability of the neurons, which could be controlled to an extent, but not eradicated. Dietary must be looked to in the correction of the faulty metabolism, also rest of body and mind, suitable diversion, massage, tonics, etc.

The Treatment of Gout. — Dr. H. C. Wood, of Philadelphia, spoke on the treatment and management of gout. He hardly knew what to say, for he was expected in fifteen minutes to epitomize the wisdom of the ages with regard to what was probably the most frequent of all conditions among what had been called the better class of the human race. He wished it clearly understood in the first place that all our scientific knowledge of gout at present amounted to little

more than a mass of trundling expectation upon which hereafter was to be built some true knowledge. To his way of thinking there were three great manifestations of the same thing which was universally allied to itself. They were rheumatoid arthritis, podagra or true gout, and articular rheumatism. We must not attempt to treat gout, but treat the individual who came before us. Take diet: it was well known that Sydenham believed that gout was made worse by red meats. Dr. Wood had seen gouty patients in whom a single piece of roast beef would precipitate a furious attack. On the other hand, he had seen many gouty people who could not get well unless they were put upon red-meat diet. There was no diet for the gouty, but there was a diet for the individual. Nevertheless, in the large majority of cases, sugars and starches had to be cut off. But in spare gouty subjects farinacous diet might be essential. Milk probably suited the largest number of gouty patients. In the matter of exercise, we must give the right measure to the individual patient. But patients who could take little when they first came under the physician's control could gradually be led up to the point of taking a great deal of exercise, and this was essential for prevention of further attacks. Dr. Wood also spoke of the best way to give salicylates that they might not disturb the stomach. The trouble arose usually from the fact that doctors gave the salicylate of sodium. Strontium salicylate was less disturbing. In some instances it agreed better with the patient when combined with digitalis and strychnine. Medicines, however, would not eradicate the diathesis.

The Cardio-Vascular and Renal Relations and Manifestations of Gout.—Dr. N. S. Davis, Jr., spoke upon this subject. The atheromatous changes which took place in the arterioles throughout the body, including those of the kidney, in the gouty subject were too well known, he said, to call for mention in detail. But some points in connection therewith had been referred to only in a broad way in the books, and were often overlooked. One of these was the gradual progress of the renal disease, the organ being hit in spots, with intermissions in the degenerative changes which were microscopical in size, until finally large areas were involved. In these cases the glomeruli and the tubules were attacked in a way at times to cause scarcely an appreciable symptomatology, whereas the same changes coming on suddenly, as in cases of a different etiology, caused striking clinical and urinary manifestations. The arterial changes in the nervous system led to various nervous disturbances by interference with the nutrition of nerve centres. Cerebral manifestations might arise from uræmia or from thrombosis of the cerebral arteries.

Dr. Tyson said that Heberden's nodosities did not mean gout, and also the fact that in the treatment or prevention of gout continuous use of alkaline waters was of great benefit, especially the foreign Vichy. Citrate of potassium was good.

Rheumatoid Arthritis.—Dr. David Riesman, of Philadelphia, read the paper. He preferred the term used by Virchow, arthritis deformans. Heberden's nodes were manifestations of rheumatoid arthritis rather than of gout. The theories which had been advanced in explanation of rheumatoid arthritis, or arthritis deformans, were: 1, that it was a form of chronic rheumatism; 2, that it was a mixture of inherited rheumatism and gout; 3, that it was of nervous origin; 4, that it was caused by a specific germ. The author thought the third was most in consonance with the symptomatology, etc. He related a case showing apparent benefit from strontium bromide. It had relieved the pain, and perhaps had eliminated the disease.

Discussion on Anæmia.—Dr. Alfred Stengel, of Philadelphia, was to have opened the discussion on anæmia, but in his absence his paper on "The Nature and Varieties of Anæmia" was read by Dr. A. E. Taylor, of Philadelphia. The studies of the blood by Virchow, Cohnheim, and others marked an advance in our knowledge of anæmia. One point emphasized by the author was that it would be an error to consider the blood from the standpoint of the corpuscular element alone. The tendency of the profession to regard the corpuscular element as the criterion from which to estimate anæmia needed correction. More attention should be given to the plasma. The author considered the several forms of anæmia or conditions in which anæmia was manifest—chlorosis, chorea, pernicious anæmia, etc. The term splenic disease ought not to be used—he knew of no disease which should be dignified by that title.

The Alterations in the Blood, and Methods of Determination.—Dr. A. E. Taylor then read his own paper on this subject. The most urgent need was an instrument to take the place of the hæmoglobinometer, as this instrument was very unreliable. The oxygen-carrying power of the blood was far in excess of the needs of the tissues, and the evil effects in anæmia were obviously not due to disturbed oxygenation. The author believed that the chemical study of the blood would henceforth prove far more important than the microscopical study.

The Salivary and Gastric Functions in Anæmia.—Drs. S. M. Hamill and D. L. Edsall, of Philadelphia, were the authors of this paper. Their study, however, seemed to have been limited chiefly to the ferment power of the saliva in anæmia. After speaking of the technique of collecting the saliva and the tests, they said they had applied those tests in several cases, including leukæmia, chlorosis, pernicious anæmia, etc. The conclusion reached was that anæmia *per se* did not give rise to noteworthy changes in the ferment activity of the saliva.

Optic Symptoms in Anæmia.—Dr. W. C. Posey, of Philadelphia, read a paper on the changes in the fundus of the eye in anæmia. While examination of the fundus often gave indications of anæmia, it did not always do so, especially in cases of anæmia of moderate degree. In chlorosis ocular manifestations were more frequent, the author thought, than was commonly supposed, for in nearly every case in which the hæmoglobin was markedly reduced he had found changes in the fundus. The most common change was a dull, lustreless, grayish appearance of the nerve. In pernicious anæmia clinicians had observed retinal hemorrhages, but they were not so uniformly present as some had supposed. As a rule they occurred in the advanced stage. In initial anæmia from loss of quantity of blood, there were seldom ocular changes unless some other factor than loss of blood existed.

A Further Report on Ischochymia (Dilatation of the Stomach).—Dr. Max Einhorn, of New York, referred in this paper to one which Senn had published in the Medical Record, 1891, reporting fifteen cases of stricture of the pylorus, and asserting that the condition was one for surgical treatment; also to a paper which Dr. Einhorn had read before the German Medical Society in New York, 1894, in which he used the name "ischochymia" to convey the idea of stagnation of food in the stomach as the principal symptom of the affection. In that paper he recorded four cases of stricture of the pylorus in which operation had been successfully performed, and several cases of malignant disease of the pylorus in which gastrostomy had proved of temporary benefit. More recently he had read a paper on ischochymia before the German Dispensary of New York, and to-day it was his intention to present a summary of work done to date. He divided the cases of ischochymia into two classes: 1, cases in

which an operation was indicated, whether the stricture were malignant or benign; 2, cases treated by palliative measures. The cases of benign stenosis of the pylorus submitted to operation numbered ten. In all of the cases operated upon the diagnosis was completely confirmed. Of the ten cases eight resulted in cure; two were advanced, and the shock of the operation was fatal. In the cases of malignant stricture of the pylorus, diagnosis based on the lactic-acid test and presence of tumor, the majority of the patients who survived operation gained in weight and were made more comfortable than by any other measure. The salient point in the diagnosis of ischochymia was the presence of food in the stomach from a meal taken the previous day. The question then arose whether we had to deal with weakness of the muscularis or with stenosis of the pylorus. The symptoms related to dilatation, thickening of the pylorus, arrested peristalsis, fermentation products. But the diagnosis ought, if possible, to be made before the occurrence of dilatation. When there was tumor and ischochymia had existed two years, one could make the diagnosis of benign stenosis. In his conclusions Dr. Einhorn pointed out that operative measures were usually indicated in both malignant and benign stenosis of the pylorus leading to ischochymia, the operation lying between excision, gastroenterostomy, and plastic procedures, according to the extent of the disease, etc.

Relation of Fat Necrosis and the Pancreas.—Dr. H. U. Williams, of Buffalo, was the author. The paper dealt more particularly with that form of fat necrosis associated with disease of the pancreas. This fat necrosis appeared in the fat on the surface of the pancreas and vicinity; similar nodules might be present in the fat of the peritoneum at points more remote, denominated disseminated or multiple fat necrosis. Peritonitis was not usually present. Dr. Williams had studied the pancreas in eighty dead subjects, and had found fat necrosis in only two. He had also examined the pancreas of one hundred hogs, and found fat necrosis in the interlobular fat in two. He had also met with what appeared to be the same change in the adipose tissue of the cat, but not near the pancreas. In some instances the fat nodules had been found sterile. The bacillus coli communis was oftenest present. The author had published in the *Boston Medical and Surgical Journal* results of his experiments with tying the nerve plexus of the pancreas and injuring the organ with a hook, causing fat necrosis.

Dr. Blaisbrook, of Washington, said he had been interested in this subject, and had examined the pancreas post mortem in one hundred cases for fat necrosis, and had found it in none. The only disease which he had found was carcinoma, and in one or two of these the gross appearance was that of fat necrosis, but the microscope showed cancer.

The Diagnosis of Abdominal Effusions and Growths.—Dr. James Tyson, of Philadelphia, related a recent clinical experience which seemed to him of sufficient interest to bring to the attention of the section. A few months ago there was a woman in his wards at the University Hospital with ascites, and some physical signs of that condition, notably succussion tremor. She had, however, very marked tympany in the flanks, so marked that it led his house physician strongly to doubt the presence of fluid; but his diagnosis of fluid was confirmed by drawing off several pints. The symptom had been found, but in less degree, in a number of cases of ascites in the hospital since then, and his colleague, Dr. Penrose, had met with it from time to time. Leube had mentioned that the large intestine, which went as far forward as the midaxillary line and was shut off by the peritoneum, might give tympany under such circumstances.

Drs. Bayliss, Rochester, and Allen stated that they had recently met with cases in which this tympany had caused some trouble in diagnosis.

The Treatment of Cancer by Zinc-Mercuric Cataphoresis.—Dr. C. B. Massey, of Philadelphia, described in this paper a use of metallic electrodes with high milliampère, up to one thousand or more, both electrodes being applied within the cancerous area in a manner presumed to cause diffusion of the metal into and throughout the cancerous tissue by cataphoresis. The metal thus diffused was supposed to be oxychloride of mercury, and it was believed to reach the cancerous or sarcomatous elements which had become disseminated into the surrounding healthy structures. His review of eight trial cases would show two cured, two apparently cured, two benefited, two failures permanently to arrest the disease.

Case of Primary Renal Tuberculosis.—Dr. J. D. Steele, of Philadelphia, read the history of a case of presumable primary tuberculosis of one kidney, and called attention to the doubt which had been expressed by some authorities as to the occurrence of primary tuberculosis of the kidney. First one kidney became diseased, and in about half of the cases the other became involved before death. The pelvis of the kidney usually escaped until late, and the ureter was seldom implicated. More frequently other organs were also the seat of tuberculosis.

Experience in the Treatment of Epilepsy According to the Method Suggested by Niemeyer.—Dr. Matthew Woods, of Philadelphia, read the paper. His reason for presenting it was that he had obtained better results from this treatment of epilepsy than from any other. The many varieties into which epilepsy had been divided was simply a multiplication of terms, and threw no light on the causation of the disease. He dwelt upon the surgical treatment—craniectomy, circumcision, etc.—because sometimes it was an important adjunct to drug treatment, and because he wished to show that too much importance had been attached to the brain as the seat of epilepsy and pressure on the brain as its cause. The seat of epilepsy could be anywhere, and any treatment not considering the starting-point must fail. One case he had cured by operating for epispadias, which had existed prior to the development of epileptic attacks. One woman burnt her hand, whereupon her epilepsy disappeared. The chief drug used by the author was bromide of potassium in gradually increasing doses taken in a large quantity of water—ten to sixty grains from one to four times a day, the treatment to be continued at least a year after cessation of the convulsions. In his summary he repeated that resort should be had occasionally to surgery, to relieve constriction of the prepuce, lacerated cervix, suspicious cicatrices; constipation should not be allowed to exist; digestion should be improved; a limited amount of animal food once a day; outdoor exercise; bromide of potassium in the manner stated.

Medicine as an Exact Science.—Dr. W. J. K. Kline, of Washington, read a paper which was a plea for exact science in the teaching and clinical application of medicine, so far as this science had been developed.

The Importance of the Habit of Prognosis in the Development of the Individual Physician.—Dr. L. F. Bishop presented a paper on this subject. He said it was the physician's duty to look out for new methods which tended to the better development of his work, as well as to keep informed and his mind trained by thought. Habits were the masters of lives and actions. These were as potent for good as for evil, and habits of mind and thought were as much habits as those of the physical nature. The habit of prognosis was important as not only looking to the condition of the pres-

ent, but what would happen if certain different lines were followed. It was well to form the habit of a careful prognosis, and by study and comparison this habit could be made more accurate. This prognosis should be faithfully promulgated to those who had a right to know it. The first step of prognosis was not the classifying of the disease, as might be indicated by the index of a book, but the placing of the case in a particular group of a particular variety of the disease. Then by thorough comparison and research the mathematical theory of chances and possibilities could be brought to bear and the conclusion reached. The insurance companies did not pretend to say that a certain man would live to a certain age, but by observation deduced the rule that the average age would be a certain one; so the habit of prognosis could deduce the conclusions that would in the main be accurate. The ideal mode of study of prognosis would be to compare different cases of the same disease treated by different methods with untreated cases, but such opportunities did not often occur; yet by careful study of the cases in hand and a summing up of the results, one could form conclusions that would aid much in the habit of prognosis.

Before adjourning, the section extended a vote of thanks to the chairman and the secretary of the section, Dr. Musser and Dr. Priestley.

(To be Continued.)

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, April 19, 1897.

JOSEPH E. JANVRIN, M.D., PRESIDENT, IN THE CHAIR.

The Treatment of Diphtheria in Private Practice; a Comparison of Antitoxin with Other Methods.—DR. JAMES J. CONCANNON read the first paper. During the pre-antitoxin period, treatment of diphtheria had been very variable, and it was so to-day among those who did not believe in antitoxin. Many doctors now advised parents to use antitoxin; others advised them to let it alone. Both sides were honest, but it was evident that many lives were being sacrificed during the solution of the question of the value of this treatment. The unsatisfactory results of other treatment were pointed out and were well known. The claims for antitoxin and the statistical basis therefor were also stated. Nearly all of the doctors who had contributed to the report of the American Pediatric Association favored the remedy. From certain of the statistics quoted it was shown that the mortality was only five per cent. when the serum was administered the first two days.

Dr. Concannon then analyzed thirty cases of diphtheria which he had (formerly) treated without antitoxin and twenty-three which he had treated with that remedy, and three others so treated seen with other physicians. In both instances he divided the cases into three classes, the mild, the moderately severe, and the severe. The mild, the moderately severe, and the severe cases were nearly equal in the two instances. The treatment in the thirty cases varied, and seemed to have been negative in effect. The internal administration of mercurials, pilocarpine, applications of nitric acid, nitrate of silver, etc., were harmful rather than beneficial. Insufflations produced little or no result. Papoid and so-called solvents had had no effect. Cleansing solutions had a place. Iron was good for the anæmia. In the twenty-six cases in which antitoxin was used the dose varied from fifteen hundred to twenty-five hundred or more units. There was no other treatment except tincture of iron in three cases, and irrigation with sea water in about half. As to results of the two methods, eight patients died under the old method, only three under the new. Excluding two cases already moribund, only one death could be placed on the antitoxin side. Under the old method there were nine laryngeal cases, five of which were intubated, and all five patients died before the tube was removed. Few or none of the laryngeal cases in the second class required intubation after use of antitoxin, which showed that antitoxin did away with the necessity of intubation. Severe cases under the old treatment required attention for weeks; under the new for days. Under the old treatment we never dared make a prognosis nor state what a remedy would accomplish; under the new we could state with much certainty that the membrane would disappear in forty-eight hours, the patient would be much improved in twenty-four hours, and would recover in a few days. The author had seen no ill effects from antitoxin. There had been successful immunization with the serum in several families exposed to diphtheria.

The author then considered charges against antitoxin. Grant that some sudden deaths had occurred; they had also occurred without the use of the serum. It was important to wait before making the injection for the air to rise from the serum drawn up into the syringe. The author was disposed to regard the injection of air as one explanation of accidents which might have occurred. Theoretically it might be supposed the antitoxin would be useless in cases of mixed infection, but in practice cases had shown improvement. The objection that the treatment lessened the number of the doctor's visits held. In his conclusions he asserted that antitoxin was a specific for diphtheria when used in time; that it was the only effective treatment known; that it was effectual as a prophylactic.

Results of Diphtheria Antitoxin in Forty-Four Cases.—DR. G. B. PHILHOWER, of Nutley, New Jersey, opened the discussion. In this country to-day there was no disease which so struck terror into a family when a member became affected as diphtheria. In view of its great fatality, he felt, as the author did, that every physician should be compelled to use antitoxin. During about ten years' practice before he became acquainted with the use of antitoxin, Dr. Philhower treated two hundred and eighteen cases of diphtheria, with sixty-six deaths, a mortality of thirty-one per cent. He felt that such a record was not one to be proud of; that it left too many vacant places in families; that he ought to save more lives. Besides, the treatment in vogue, the swabbing, the spray, etc., was disgusting to him. Therefore when a new remedy came out he was ever ready to inquire into it. Twenty-two months ago he began the use of antitoxin, and had since treated forty-four cases with only two deaths. The two deaths were in his first ten cases. One of the two patients died, two weeks after the treatment had cleared up the throat, of broncho-pneumonia. The average age was eight years, period of injection forty-eight hours, duration of sickness about four days. The only symptom on the increase under the treatment was laryngeal paralysis, but analysis of the cases showed that this was only apparent, due to patients recovering who formerly would have died. Laryngeal subjects used to choke to death, and subjects of nasal diphtheria died of infection. Now they were saved, but some of them had paralysis. It was not due to the antitoxin. He had seen a rash, but could not say that it was due to the antitoxin. He had discouraged other treatment except an initial dose of calomel, sunlight, and general hygiene. Of course it was possible that during the period he had used antitoxin he had happened to run across cases with less tendency to fatal issue than formerly, but there was no reason to think this, and the supposition was opposed by the

fact that other physicians in his village who had not used antitoxin had had the old death rate. The antitoxin which he had used was that prepared by the Newark board of health.

Dr. Adolph Rupp said he had used antitoxin only in one case, or rather he had advised it in a case in which the father was anxious to have it tried, for he had been a contributor to the fund early collected to supply an antitoxin in this city. Dr. Rupp saw the patient on the seventh day of the illness and the injection of antitoxin was made by the board of health. The pulse went up immediately after the injection; the fever rose, the membrane continued to form, the bacteria did not cease to flourish. He doubted whether the optimism of the first speakers was well based; certainly the literature, as Dr. Rupp had analyzed it, was not so favorable as it had been represented, not so favorable as the experience related to-night. The average mortality for diphtheria in Dr. Rupp's practice since 1881 had been less than fifteen per cent. A writer in Breslau had reported over eight hundred cases treated without antitoxin with a mortality of less than five per cent. The nature of the epidemic had much to do with the issue. There was much that was contradictory in antitoxin reports. The advocates of the method made too little of objections. It was easy to say that the patient died of heart failure. It explained as much as the assertion that the patient died for want of breath. What made the heart fail? Not diphtheria in the St. Louis child which received an injection simply for immunization; nor from the injection of air, for death did not occur until forty minutes after the treatment. During the last sixteen months the speaker had seen sixteen cases of diphtheria in three families, and none had proven fatal. Yet he did not claim to have any specific for diphtheria.

Dr. August Seibert had had favorable results with antitoxin treatment. Papers of the kind read this evening, giving excellent results from this treatment, had been published by the dozen. The testimony had been from men of such high standing that the results could no longer be questioned by any sane mind. It was simply the imperative duty of all physicians to use the serum early in every case of diphtheria. Dr. Seibert pointed out the apparent reluctance of one of the daily newspapers originally to give credit to Behring instead of Roux for the discovery of this treatment of diphtheria, and also mentioned the false prophecy of Dr. Winters with regard to the fate of this treatment and also that of washing out the stomach of infants, on which subject Dr. Seibert had written in 1888.

Dr. A. Lambert said it was true that the bacteria of diphtheria might be present in the throat without active diphtheria, but the board of health was compelled to take notice of such cases as possible sources of infection. He thought antitoxin was backed by far more facts, and by reasons based on such facts, than was true of the vast majority of our remedies. Of course its action was limited. It could not recuperate cells, but it would prevent their death by action of the toxins if it were given early enough. The amount of the toxin in the blood was unknown, but it had been found by experience that a less amount of antitoxin was required to counteract it in mild cases of diphtheria than in severe cases. Hence the variable dose, from one thousand units up to two thousand and more. To use it early and thoroughly should be the rule of practice.

Dr. Louis Fischer mentioned as among the chief reasons for failure with antitoxin the employment of a poor or bad quality; its use in cases already moribund; too small a quantity. He had known physicians to inject only fifteen hundred antitoxin units in malignant cases. It was not necessary to discard other treatment simply because antitoxin was used. Some people seemed to think that the new remedy should not only cure the child, but also take the place of food.

Urethroscopic Photographs.—Dr. Ferd. C. Valentine demonstrated on the screen the photographs, given him by Kollmann, of Leipzig. Drawings, afterward colored, had been made by different writers, especially by Oberlaender and Guyon, but they were not so reliable as photographs which were entirely free from the personal equation. Kollmann's excellent pictures had been taken by a camera devised by him for the purpose, and made a part of the Oberlaender urethroscope. Naturally they were in black and white. No retouching or beautifying pencil had spoiled their original strength or correctness. True, life tints were lacking.

Dr. Valentine then described about seven photographs representing various portions of the pendulous and anterior urethra in the normal and diseased state, the latter including strictures and papillomata. The dark mass at the bottom of all the photographs was the much foreshortened light carrier. One or other side of the urethra preponderated in the picture when the tube was directed somewhat to one side. Radiating folds were seen, the number and form of which depended upon the size of tube used. They represented the longitudinal folds of the urethra and projected from the periphery of the picture to the funnel. Striation of the urethra became more evident the larger the tube used, the larger tube flattening the longitudinal folds. The third picture showed the mouth of a Morgagni pouch. The fifth picture showed a similar pouch on the floor behind the glans, which was very unusual. The sixth picture showed stricture, Morgagni pouch, and Littré's glands opening into the urethra. The large craterlike Morgagni pouch was no doubt once the site of inflammatory process. From the gaping mouth it would be possible to remove secretion with Kollmann's spatula and examine for gonococci.

Dr. Carl Beck felt that members were under obligations to Dr. Valentine for this demonstration, which was the first one made in this country. He doubted whether the value of urethroscopy and urethroscopic photography had yet been grasped by the profession. He compared them to laryngoscopy and ophthalmoscopy.

Dr. Thomas Manley said that in no department of surgery had there been greater advance the past few years than in the surgery of the urinary tract and organs. He thought urethroscopy was of great aid in the treatment of disease of this tract, but that urethroscopic photography was likely to be chiefly of value in unusual cases.

Dr. Robert Newman presented some pictures in color of the urethra, which an artist had made under his direction some twenty-five years ago. The urethroscopic pictures had first been made by hand and afterward photographed and published.

New Battery Arrangements.—Dr. S. F. Brothers presented with Mr. Hailey some new battery arrangements, consisting of a water motor for charging a storage battery and connections for running a small dynamo by the storage battery. It could also be used for generating a faradic current.

Reports of Special Committees.—Several special committees made their reports. Dr. Stewart read that of the committee appointed to wait on the mayor and urge the appointment of a medical man to fill the vacancy in the board of commissioners of charities. The other members of this committee were the president and Dr. George T. Harrison. Dr. Harrison remarked after the report had been read that the mayor certainly could not now plead ignorance of the arguments of the other side, those opposed to the action of the commissioners of charities in their sweeping removal of physi-

cians to the city hospitals and placing such appointments in the hands of a narrow medical clique. The committee had presented the matter before the mayor verbally and in writing, and showed that the opposition to a medical man in the commission came only from the few who would continue the control of the hospital appointments by the colleges. The greater part of the work of the charity commissioners could be understood and discharged only by men having a medical education, and as long as no physician was on the commission its members had to depend for their information upon the statements of the doctors in the clique referred to. The medical profession at large had no representation. The so-called fourth division of Bellevue represented itself alone, and was the closest corporation imaginable. The new method of appointment to hospital positions, placing the appointments in the hands of the colleges, was uncalled for, since the colleges already had far more facilities for hospital instruction than they made use of, and many of the city hospitals now placed under their control were inaccessible for teaching purposes.

The report was accepted.

Presidency of the Board of Health, etc.—The special committee, composed of Drs. McLeod, Manley, and J. Blake White, to report on matters relating to the board of health, reported in opposition to the compulsory reporting of cases of tuberculosis, but in favor of abrogating that provision in the charter which prohibits the appointment of a physician as president of the board of health. The latter part of the report was adopted. The part relating to tuberculosis led to a vote, which by some of those voting meant its rejection and by others its adoption as a whole. The committee was continued, and no doubt the sense of the association on this question will be made clear at another meeting.

The Dispensary Abuse.—Dr. McGauran read the report of the committee on this subject. It had acted with the Charity Organization Society in presenting a bill at Albany, which bill was well replaced by the following:

"Section 1. By this act a dispensary is defined to be any institution, agency or place, society or association, whose actual or alleged purpose it is to furnish either gratuitously, or at a merely nominal price, to indigent, needy, or other persons not resident therein, medical or surgical relief, advice or treatment, medicine or orthopædic or other like appliances.

"Sec. 2. On or after the first day of October, 1897, it shall not be lawful for any one to establish, conduct, or manage at any place in this State, a dispensary not duly incorporated as such under the laws of this State, or not connected with another incorporation and licensed by the State board of charities.

"Sec. 3. In no case shall a dispensary be established, carried on, or conducted in any place in this State commonly known as a 'drug store,' nor in any place or building in the State defined by law or by an ordinance of a board of health as a 'tenement house.'

"Sec. 4. It shall not be lawful for any person or persons to display the word 'dispensary,' or to cause the same to be published in any form or in any manner in order to attract any indigent, needy, or other person to any dispensary not duly incorporated or licensed as provided in Section 2 of this act.

"Sec. 5. Any person who shall by means of any wilful false representations on his or her part, obtain at any dispensary medical or surgical relief, advice, or treatment, medicines or orthopædic or other appliances, or any person who shall wilfully violate any of the provisions of this act shall be guilty of a misdemeanor, and upon conviction shall be required to pay a fine of not less than fifty nor more than two hundred and fifty dollars.

"Sec. 6. The State board of charities is hereby empowered to make rules and regulations and to alter and amend the same when, in its opinion, necessary, in accordance with which indigent, needy, or other persons shall be given medical or surgical relief, advice or treatment, medicines and orthopædic or other like appliances by such duly incorporated or licensed dispensaries, and the said board is hereby empowered, a chance for a hearing having been given, to annul the incorporation, or suspend the operations, or to revoke the license of any dispensary for wilful neglect or failure on the part of its managers, trustees, officers, or employees to comply with the rules and regulations so established by said board; but nothing in this act contained shall be construed to mean that said board shall have power to determine the particular school of medicine under which the dispensary shall be conducted.

"Sec. 7. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

"Sec. 8. This act shall take effect on the first of October, 1897."

Dr. McGauran said this bill had passed the senate and assembly, and only required the signature of the governor to become law. He made a motion, which was carried, urging the governor to sign the bill.

On motion the association appropriated $100 to defray part of the expenses for securing this legislation.

Representation in the State Board of Medical Examiners Demanded.—Dr. Robert Newman offered the following, which was adopted: "*Resolved*, That this association, representing over one thousand physicians in the county of New York, considers it fair that the New York State Medical Association should have a representative on the medical examining board, and, therefore, is in favor of the bill introduced into the legislature for such purpose."

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNÆCOLOGY.

Stated Meeting, April 22, 1897.

S. Marx, M.D., Chairman.

Specimens of Appendicitis, of Hydrosalpinx, of Extra-Uterine Pregnancy.—Dr. Andrew F. Currier presented a vermiform appendix removed with successful result early in the disease from a boy sixteen years old. The operation verified the diagnosis of appendicitis with abscess. He also presented the left tube and ovary removed for hydrosalpinx from a woman who showed some symptoms the seventh day after the operation, and it was found that there were stitch-hole abscesses, a rare complication in modern antiseptic surgery. The third specimen was one of extra-uterine pregnancy from a woman who had had some ovarian symptoms for a year, with pain. The day before Dr. Currier saw her she had pain, nausea, and vomiting, and next morning collapsed on the way to the bathroom, and was picked up from the floor. She rallied, and when Dr. Currier saw her he made examination under chloroform, felt a tumor on the right side, operated, found blood in the peritoneal cavity, and hemorrhage going on from the site of a ruptured right tubal pregnancy. The patient did perfectly well. The fourth specimen was also one of extra-uterine pregnancy from a woman who gave a history of former gonorrhœa, contracted from her husband, and more recently another attack with symptoms of peritonitis. The night before he was called she had an attack of hemorrhage during coitus, very severe pain, and next morning when he saw her she was very weak, with a pulse of 150. He operated and found ruptured tubal

pregnancy with fœtus. Four days later he was called by her physician, and on arriving she was dead. The cause of death was probably heart failure and not hemorrhage, for her husband said she had before had attacks of dyspnœa. An autopsy was rejected.

Dr. Currier said that in both of these cases it was the right tube which was the seat of the extra-uterine pregnancy, and this was true of most of his other cases. The last-named case was one of bicornate uterus; he could not say whether that fact had any etiological bearing.

Tumors of the Uterus in Maiden Women.—Dr. Robert A. Murray presented two specimens of papillomatous tumors of the uterus, and made them the basis of some remarks. The first specimen was from a maiden woman, aged fifty-nine, who while suffering from an attack of grippe employed a nurse. The nurse learned that she had a purulent and hemorrhagic discharge from the vagina, and it was then that Dr. Murray was called. He found a polypoid tumor projecting out of the vagina and attached to the cervix, twisted it off, and curetted the uterus with a blunt curette and irrigated. The discharge ceased. The second specimen was similar, and was from the widow of a physician, sixty-two years of age, who was suffering from grippe and pneumonia, and was found to have a foul, purulent, and bloody discharge from the vagina. Examination revealed a polypus projecting from the cervix. He twisted it off, washed out the uterus, curetted, and the patient was now well.

Dr. Murray dwelt upon the necessity for respecting the sense of delicacy in women, especially girls and maiden ladies, who were apt to suffer for months or years with pelvic troubles through fear of exposure should they consult a physician. Personally, he had never been refused permission to make such an examination as was necessary to lead to a correct diagnosis and to carry out appropriate treatment, but he first proposed a rectal examination and later a vaginal one, if the former proved unsatisfactory. The hymen was spared whenever it was possible to do so. The use of a speculum was seldom necessary to determine the cause of flooding. An unmarried woman might have fibroid, polypus, endometritis, displacement, ovarian trouble, but she rarely had cancer at the menopause.

The chairman, Dr. Marx, supposed there were members who disagreed with Dr. Murray regarding rectal examination, the use of the speculum, the use of dilators. These questions were open for discussion.

Dr. H. J. Boldt said that when it was necessary to enlarge the cervical canal to remove the tumor he would not resort to dilators; it was safer and gave more room to make a bilateral incision into the cervix. The cut would heal by primary union after introduction of a suture.

Dr. A. P. Dudley objected to speaking of women menstruating after the menopause. It was then hemorrhage, and any hemorrhage after the menopause was suspicious and should lead to an investigation. A rectal examination would nearly always have to be followed by a vaginal examination, and he preferred to begin with the latter. He had examined many girls with the little finger and made the correct diagnosis. If in operating it was necessary to enlarge the cervix, he would dilate with laminaria tents in preference to making incisions, as recommended by Dr. Boldt. In girls and unmarried women it was more difficult to sew up the incision than to remove the polyp. In fibroids at the fundus the hymen could not be spared, and incision of the cervix enabled one to make a quicker operation than by dilatation.

Primary Cancer of the Fallopian Tube.—Dr. H. J. Boldt presented a tube and ovary which he had removed that day per vaginam after having ruptured the tumor during examination. Only blood was found, and the appearance of the ruptured tube on gross examination was that of tubal gestation, but the pathologist, who had made an incomplete examination of the specimen, thought it was cancer of the tube, in all probability primary. It would be reported upon further at a future meeting.

Cancer of the Cervix with Isolated Involvement of the Fundus.—Dr. Boldt presented a second specimen consisting of cancer of the cervix with isolated cancerous spot in the body of the uterus. It was another illustration of the point made by him at the meeting of the American Gynecological Society in Brooklyn some years ago, that we should not be satisfied with supravaginal amputation of the cervix for carcinoma apparently limited to the cervix, for frequently there co-existed without our knowledge cancer of the uterus without tumefaction and seemingly independent of the disease in the cervix. Dr. John Byrne deserved great credit for his pioneer work with the galvano-cautery, but Dr. Boldt thought the advantage over the knife was not because of the cautery being electric, and personally he preferred the use of the Paquelin cautery.

Specimen from Early Abortion.—Dr. Dudley presented the products of an early criminal abortion, apparently a double uterine pregnancy, two sacs. The woman visited him bleeding, after having made three visits to an abortionist. He informed her husband of the circumstances and then removed the loose products of conception from the uterus. The patient recovered.

Result of Hysterorrhaphy.—Dr. Dudley presented the uterus and appendages removed for pyosalpinx on one side and ovarian tumor on the other in a colored woman upon whom he had operated four years ago for retroverted uterus, suturing the uterus to the abdominal wall anteriorly. This was an operation which he had some time ago said he would never repeat, and the present case gave good reason for that resolution. On opening the abdomen at the recent operation he found that the uterus was not close to the abdominal wall, but was suspended from it by a pedicle an inch and a half long. To the posterior wall of the uterus the small intestine was adherent and knotted into a mass to the extent of a foot. In front the uterus was bound to the bladder and it was this pathological condition which had given rise to her most severe symptoms. Separation of the adhesions required nearly an hour. Subsequent to the operation symptoms of intestinal obstruction developed, and Dr. Dudley wished to reopen the abdomen, to which proposition the consultant did not agree. Autopsy showed twisting of the gut at the site of the former adhesions. He repeated that hysterorrhaphy placed the uterus in an unnatural position, and he would never resort to it again.

The Use of the Curette in Puerperal and Chronic Endometritis.—Dr. Reuben Peterson, of Grand Rapids, Mich., read the paper. In the introductory he said he did not object to the general practitioner using the uterine curette, but he should do it only with clear ideas of what he wished to accomplish, and after having had that amount of experience with surgical work which had developed the habit of securing and maintaining strict asepsis. He had seen serious results from curetting practised by careless or inexperienced persons, and believed that such instances were too common.

Speaking of cases of abortion before the fourth month, the treatment applied by the author, he said, consisted in thorough emptying of the uterus, a sharp curette being used, since the dull instrument was inefficient; then irrigation with sterilized water. He did not use antiseptic fluids, because he regarded the danger of some passing through the Fallopian tubes as

real. The puerperal uterus should never, in his opinion, be packed tightly with gauze. Nor did he believe in using the fingernail instead of the curette, as it was liable to convey infection. Perforation of the uterus had often occurred, and to avoid this accident the operator should first have made careful measurements of the organ.

Concerning the puerperal septic uterus, the author quoted Bumm, and divided the cases into two classes, those in which the infection was local and shut off by a granulation zone, and those in which it was general. In cases of sapræmia, and, indeed, in all septic puerperal cases, he curetted with the dull curette, avoiding the sharp curette because of the danger of opening up new channels of infection. Retained membranes should be removed; then should follow irrigation with sterilized water. In the second variety of cases local symptoms were subordinate to general symptoms, and the protecting granulation zone could hardly be said to exist; the lochia was not so foul as in the sapræmic cases. Little hope was offered by any treatment.

The curette was useful in all forms of non-puerperal chronic endometritis. The sharp instrument was required; the dull one had been inefficient in his hands even in catarrhal non-septic cases. Gonorrhœal cases required caustics after curettage, although some had argued that they were contraindicated as interfering with drainage. There should be free exit for fluid; gauze should not be used in a manner to interfere with this, if it were used at all.

Dr. H. T. Hanks opened the discussion. In speaking of the manner of packing, it is not wise, he said, to pack tightly. Certainly the cervical canal will not bear tight packing, and the uterus does not require it excepting after the removal of an intra-uterine tumor, and generally not then. But he believed that a good iodoform gauze packing can remain, and is beneficial if it remains two or even three days in cases of endometritis of some weeks' or months' standing. The only caution which he would give to friends and students is that after the thorough curettage the gauze should be loosely packed in all parts of the cavity, and not packed at all at the internal os; only the small strip of gauze, not wider than one inch, should simply be left straight in the cervical canal. Such a packing never causes uterine colic. The uterus never rebels. But when the cervical canal at the internal os is packed tightly, there is less opportunity for drainage, and there is an exciting cause for uterine colic within a few hours. One does have pain and fever, and many times the surgeon believes that he has a case of iodoform poisoning or of septic inflammation, when nature is only trying to throw off the offending body at the internal os.

Another matter of great importance is the kind of medicament with which to saturate the gauze. He believed that good iodoform medicated gauze in the uterine cavity is better than sterilized plain gauze. He further believed that the iodoform in the gauze has a decidedly beneficial effect in chronic endometritis and metritis, over and above the well-known fact of its keeping the gauze sweet while in use, for two or three days.

He substituted to-day for iodoform, "nosophen" and its component, "eudoxin." These are just as good medicaments, and they are far less offensive than iodoform. He had used constantly for more than a year, in all his private practice, eudoxin or nosophen gauze. In about one-half of his cases of uterine packing in the Woman's Hospital, he had used this gauze with most satisfactory results. He knew the effect of the nosophen and eudoxin powders on the raw and abraded surfaces, like those following burns, etc., and he therefore believed it has a direct special effect on congested abraded surfaces in a cavity, other than the mechanical effect.

Nosophen contains over fifty per cent. of iodine, and has no odor, and therefore a one-per-cent. or a two-per-cent. mixture in glycerin certainly ought to be a satisfactory medicament for saturating gauze. And in the author's hands it has been altogether most satisfactory.

Dr. Currier mentioned a case to emphasize the fact that it was best to leave the operation of uterine curettage to those in whose specialty it belonged. He thought the author had not given sufficient credit to gauze for drainage. The precaution should be taken in introducing it pointed out by Dr. Hanks. Regarding the kind of curette, many cases were perfectly amenable to the dull instrument. No doubt many had at times had bad results from employing methods which were too violent.

Dr. Dudley used the sharp curette in puerperal cases before the third month, the dull one later. The best instrument was the irrigating curette, which rendered the parts antiseptic the moment it was used. The forceps sometimes removed material better than the curette. In endometritis he painted the interior of the uterus after curettage with pure or ninety-five per-cent. carbolic acid. For packing he used dry iodoform gauze. Glycerin iodoform gauze favored absorption of the iodoform and poisoning. In chronic endometritis he curetted the fundus with the dull instrument, the cervix with the sharp one. In gonorrhœal endometritis he used nitrate of silver, forty grains to the ounce. It was the best germicide for the gonococcus.

Dr. Boldt always washed out the uterus before curetting, and if it were not a septic case no harm would be likely to result in the event of accidental perforation. He had no use for the dull curette except just after delivery, when some of the secundines had been retained, but in most of such cases the fingers would do better. One could not tell how much force to employ with the dull curette. Gauze did not act as a drain, whether packed tightly or loosely. It had only two purposes: to cause contraction of a large uterus, to secure hæmostasis. Dr. Dudley had said that carbolic acid, when used pure, was not absorbed because it formed an albuminate. It was because it formed an albuminate, which destroyed its penetrating germicidal power, that Dr. Boldt did not employ it pure, but diluted one-half with glycerin.

Dr. R. A. Murray mentioned a case showing that the dull curette (used by another physician) had no power to stop the septic symptoms, whereas the sharp curette which he employed when called to the case set the patient at once on the road to recovery. He had no use for the dull instrument. He introduced no gauze, made no applications unless of iodine, which seemed to contract the uterus somewhat. Packing was indicated only for bringing about contraction.

Dr. Egbert H. Grandin thought the paper had been a protest against the injudicious use of the curette and in favor of the rational use of gauze. In so far he agreed with the author. He had tried all methods of treatment in non-septic endometritis and had come to curettage as the only rational one. But it must be used with discretion. The only place for the dull curette was for removal of secundines which were not infected, but here the fingers would do better. He resorted to the sharp curette also in putrid infection of the puerperal state. In gonorrhœal endometritis he used the nitrate of silver, one hundred and twenty grains to the ounce. If he introduced gauze at all, it was only plain gauze and for twenty-four hours. He had tried all kinds of applications, carbolic acid, nitric acid, etc., and had given them up. He now mopped out the uterus with alcohol; it might be of some value.

SECTION ON GENERAL MEDICINE.

Stated Meeting, April 20, 1897.

LOUIS F. BISHOP, M.D., CHAIRMAN.

The Nomenclature and Mode of Production of Auscultatory Signs in Pulmonary Diseases.—DR. EGBERT LE FEVRE read the paper. All teachers of physical signs relating to the chest must have noted the difficulty of conveying to students the meaning of certain terms used in books on physical diagnosis, for under the same terms different writers had described different conditions or sounds. In confirmation of this statement the author quoted freely from several writers, including Musser, Vierord, Gibson and Russell, Powell, Page, Loomis, Flint, Da Costa. These quotations would give a fair conception of the mode of production of the physical signs according to the views of the several authors. It was evident that there was an attempt to adapt the definition to the several theories of production, and *vice versa*. The three prevailing theories of the production of the auscultatory sounds were: 1, That the vesicular murmur was nothing more than the sound made by the glottis modified by transmission downward; 2, that it was produced entirely in the alveoli; 3, that there was a combination of the two sounds from the glottis and from the alveoli.

The reader regarded it as absolutely necessary to a correct interpretation of the physical signs to have a true conception of the facts which went to make up vesicular or respiratory murmur. He offered the following as a working hypothesis: There was no doubt that the sounds due to vibrations in the larynx were conducted down the bronchial tubes, but this was not the only basis of the respiratory murmur. At each inspiration the tidal air, equal to about thirty cubic inches, was carried through the bronchi and alveoli, and all the air in the pulmonary tract was set in motion. The sound arising from the air passing through the glottis was transmitted almost unchanged to the division of the trachea. At this point the column of air was broken up by impinging on the bronchi, then another sound was produced, less intense than the first named; at the next division there arose in a similar manner another vibration and sound, and so on down to the finest bronchioles. The farther the column of air proceeded in distance and in subdivisions, the less intense the succeeding sounds became. The first sound might be denominated tracheal, the next one a combination with this of the first bronchial, and so on. In certain physical states the upper tracheal and bronchial elements were more predominant than in others. In view of the fine divisions of the air column when it reached the terminal bronchi and alveoli, and its slow movement, it could be assumed that little sound was added there. The intensity of the sounds conveyed to the ear would depend upon their original character modified by the structures through which they were conducted—the resiliency of the lung tissue, etc. The difference in tensity of the lung tissue in inspiration and expiration would go far to account for the greater intensity and duration of the respiratory murmur on inspiration.

There was much difference of opinion regarding the production of crepitant râles. Some writers claimed that they were due to separation of the adherent walls of the alveoli when the air entered the lungs. Others held that they arose in the pleura. Regarding the former view, Dr. Le Fevre replied that the alveoli were rounded, did not become completely collapsed, so that there could not be a separation of their walls in the sense spoken of. He was of opinion that the sound was due in part at least to the air passing fluid exudate on entering the air vesicles. Similar sounds could be made in the pleura.

Ought we to do away with such terms as rude respiration, broncho-vesicular respiration, etc., and limit ourselves to fixed terms indicating the characters of sound—intensity, duration, and quality? Ought pitch to be left out of consideration, as had been done in recent text-books?

DR. W. H. KATZENBACH thought the author's hypothesis regarding the normal respiratory murmur was an ingenious one, and furnished a good working basis. He had himself been dissatisfied with the term vesicular breathing, for he had not been convinced that the normal respiratory murmur was produced in the air cells. He had been rather disappointed that the author had not referred to some of the observations of Dr. Leaming on the production of the respiratory murmur. Dr. Leaming had held that there was no more than molecular motion in the air cells, which was noiseless, and that the respiratory murmur was due to friction of the air passing through the bronchial tubes, this sound modifying the tubular sound coming from the glottis and trachea. When the density of the lung was changed, the character of the sound became modified. In his early study Dr. Katzenbach had been associated with Dr. Flint, who laid stress on four elements in sound—namely, duration, intensity, pitch, and quality. Regarding the origin of the crepitant râle, he believed the majority of those with whom he had conversed rejected the view that it was produced in the air cells themselves. Whether it was produced in the terminal bronchioles, as explained by Dr. Le Fevre, he was still a little in doubt. He had for a number of years considered it a crepitant râle from the pleura.

DR. CHARLES E. QUIMBY said the views of the production of the respiratory murmur and on the use of terms, as expressed in the paper, were exactly those which he had been teaching students for seven years. Five years ago he had presented half a dozen patients before this section, and had those examining them mark on a piece of paper what they heard at different localities over the chest, and in no instance did any two doctors use the same term to express what they heard. Four years ago he published a paper in the MEDICAL RECORD, which he had read before the Academy of Medicine, expressing the views, though in more technical terms, to which we had listened to-night, and it gave him great pleasure to know that he was not alone. As stated, seven years ago he had discarded the use of such terms as rude, harsh, or bronchial breathing, and had directed the attention of students to the intensity, pitch, duration, and quality of the sounds heard. When it came to known physical facts, no man's opinion counted for anything. The laws governing the production of sound had been demonstrated long before most of us were born. The only element in which a sound lost when once produced was intensity. The tracheal sound, for instance, retained precisely the quality with which it started when heard by the ear placed lower over the lung. There was no such thing as pure sound. The pitch was determined by the length of the tube set in vibration, being lower the longer the tube; hence the sounds from the larger bronchi were lower in pitch than those arising from the finer, shorter bronchi set in motion by the air impinging upon their walls, more especially upon the angle of separation. The intensity of any sound depended first upon the amplitude of the primary vibrations. When the angle of deflection in a dividing bronchus was great, the ingoing air suffered greater deflection, which caused greater vibration, greater intensity of sound. This would account for the breathing at the right apex being more bronchial than at the left, for the bronchus of the right apex made a

sharper turn on dividing. As the air proceeded downward it produced sounds which were higher in pitch but of less intensity. According to the case, the larger or the smaller tube sounds would predominate. He was convinced that in most normal cases the small tube sounds predominated, hence the sound was high-pitched. But high and low were only relative terms. If disease cut off the small tube sounds, we had left only the large tube sounds, or low-pitch bronchial breathing. Regarding greater intensity of sound on inspiration than on expiration, unquestionably tensity of the lung had to do with it, as pointed out by the author, but Dr. Quimby mentioned two other elements which he regarded as important. One of these was the direction of the air, being toward the ear on inspiration, away from it on expiration. The other was the fact that on expiration the vibrations were caused by the two columns of air impinging upon each other, whereas on inspiration they were caused by impact upon the firm bronchial bifurcation. On expiration it was the first period which caused most of the expiratory sound, occurring by relaxation, while the further outward movement of the air was slow and not strong enough to cause much vibration of the tubes. He agreed with Dr. Le Fevre with regard to the production of râles.

Dr. Knopf expressed pleasure on hearing the younger teachers of physical diagnosis making the attempt to get rid of too many terms and to use such as would be clear to all students. Regarding pitch, he thought a prolonged expiratory sound and change of pitch constituted a most important sign of beginning phthisis.

Dr. Le Fevre mentioned as proof of the fact that the respiratory sound was not due alone to the vibration of the air as it passed the vocal cords, modified as it entered the lungs, the experiment with inflation of the lung with the upper part of the trachea cut off; the respiratory sound was still produced. Regarding pitch, his ear was defective in appreciation of this element of sound, especially in physical diagnosis, being unable to separate it from the other elements, and it was a question how far the recent text-books were right in neglecting it and speaking only of intensity, duration, and quality of the sound. He was unable to say how many students were capable or incapable of recognizing the pitch of the respiratory sound.

Dr. Quimby said that in four years' teaching medical students he had found only two students whom he could not make appreciate the element of pitch in half an hour. Theodore Thomas was able to give the pitch of any sound immediately by ear.

Antiseptic Street Sprinkling.—The Colorado *Medical Journal* says that there are hundreds of tuberculous patients promenading the streets of Denver daily, and expectorating into the streets. If it were not for the constant sunshine, the healthy population would have no show against the invasion of these germs. The experience of several Denver physicians shows that tuberculosis is very much on the increase among the native population, and it is necessary to consider every practical means to stop its advance. The *Journal* suggests to the health department that corrosive sublimate be added to the water in the sprinkling carts of the city in sufficient quantities to be effective in destroying germs. "It is a simple matter to make this solution and nothing but good results could follow. If it be decided that corrosive sublimate could not be used in the metallic tanks, let formaldehyde be used. This procedure would make the dust of our streets less harmful and help to lessen the local spread of tuberculosis."

Correspondence.

OUR LONDON LETTER.

JUBILEE—THE PRINCE'S FUND—MEDICAL JOURNALS OF THE REIGN—ROYAL SOCIETY—COLLEGE OF SURGEONS—MUSICAL MURMURS—PARTURITION DURING PARAPLEGIA.

The great London festival to come off on Tuesday next, and inaccurately called the Jubilee, is absorbing all attention, and medical affairs occupy a back place even when doctors meet. *The Graphic* has published an illustrated programme of the royal procession and the proceeds of the sales are to be given to the Prince of Wales' hospital fund. The book is worthy of the artists of *The Graphic*, and will be treasured as a beautiful souvenir of the great pageant. The progress of medicine during the Queen's sixty years' reign is in itself a wonderful story. *The Lancet* was some fourteen years old when Her Majesty ascended the throne, and is still the leading medical journal. To-morrow's number will be the thirty-eight hundred and fifty-first. The next oldest is the *Medical Press and Circular*, No. 3,032 appearing last Wednesday. But this journal was for many years the *Dublin Medical Press* and afterward amalgamated with a much younger periodical, *The Circular*. It is still, however, the organ of the Irish school of medicine and may be regarded as the *Lancet* of Ireland. The *British Medical Journal* for this week will be No. 1,903, and has become the bulkiest of our three weeklies on account of the space occupied by the proceedings of the association and the freedom with which it prints official documents instead of abstracting or condensing them. All these journals have seen others started and after varying success discontinued. Most of them have done good service. A number still survive, with which you are acquainted through the practical nature of their contents.

On Wednesday Lord Lister as president received the guests of the Royal Society. It was the "ladies' night" and a brilliant exhibition. Telegraphy without wires and the *x*-rays were in the ascendant. A series of argon and helium tubes, displaying the words "Vivat Victoria Regina," arrested the visitors' attention on entering.

The Society of Members of the College of Surgeons have asked Lord Lister to allow himself to be put forward for election on the council of the college. There are at the moment five vacancies and eleven candidates, two of whom seek re-election.

A musical murmur is sure to arrest the attention of the auscultator, and the conditions under which these sounds are produced have not been fully worked out. They are often dismissed as phenomena of mitral regurgitation, but this is at best an imperfect explanation. Four cases of such murmurs were related to the Medico-Chirurgical Society by the president (Dr. Dickenson) at the last meeting, all of which were associated with aortic stenosis. They were all attributed during life to mitral regurgitation, but after death aortic obstruction was found in all. In three out of the four there was also mitral disease, but in one the valve was sound, while the aortic orifice was almost closed by recent vegetations. Dr. Dickenson suggested that the sound was due to the overdistention of the ventricle through the aortic obstruction, causing leakage at the mitral orifice from the abnormal pressure. A similar explanation was offered of the other cases, in which hypertrophy of the ventricle and aortic obstruction were associated with mitral insuf-

ficiency. The peculiar tone might be imparted to regurgitation in small volume but at high pressure.

Dr. N. Moore admitted Dr. Dickenson's ingenious explanation to be probably the correct one, though there might be others possible. The late Dr. Andrew taught that a systolic apex murmur heard at the angle of the scapula was due to mitral regurgitation, but if not heard behind it might be aortic. Information may sometimes be obtained by listening at the right suprascapular fossa as well as at the angle. A murmur, loud above but diminishing on passing downward and lost at the angle, is probably due to aortic stenosis. On the contrary, a murmur becoming clearer at the angle is probably mitral associated with aortic stenosis.

Dr. Amand Routh related to the Obstetrical Society an interesting case of parturition in the course of paraplegia below the level of the sixth dorsal vertebra, caused by an accident at nearly the seventh month of pregnancy. The patient was admitted to the surgical ward and remained there more than two months, was then transferred to a special ward, and labor came on two hundred and sixty-one days after the last menstruation, the first stage lasting ten hours, the second two and one-quarter hours. The placenta followed in five minutes. The only sensation during "a pain" was a "tight feeling" at the epigastrium. As the head passed the vulva the patient cried out, though she had no painful sensation; so it seemed only a reflex act. The "pains" were not so well defined as in normal cases, the intermissions being often incomplete—remittent rather than intermittent. After passing in review recorded cases, Dr. Routh thought we might conclude that (*a*) parturition is partly automatic and partly reflex, these acts corresponding mainly with the first and second stages; (*b*) direct communication with the brain is not essential to co-ordinate uterine action, though the brain seems to regulate the pains; (*c*) direct communication between the uterus and the lumbar enlargement of the cord is probably essential to the regular and co-ordinate contraction and retraction of the uterus in normal labor; (*d*) probably the uterus is able to expel its contents automatically as far as the relaxed part of the genital canal, even when deprived of spinal influence, but in the absence of reflexes the process of labor would be irregular and probably incomplete; (*e*) lactation does not depend on nervous influence merely, but is partly due to chemical changes in the blood, and these are in turn due to the metabolism of the pregnant uterus. Dr. Mott thought that the cause of the onset of labor was certainly bio-chemical, and suggested that the physiological stimulus is an increase of carbon dioxide in the placental circulation. In the conversation that followed it was evident that this point was of much interest, as was also the extent of reflex action in the case related.

PROTECTION OF THE DISPENSARY PATIENT.

To the Editor of the Medical Record.

Sir: I have just read with great regret your editorial comment upon a recent theft in a free dispensary. You have pointed out the fact of contributory negligence on the part of the patient, but you have failed to warn the philanthropists who devote their energies to dispensary benevolences of the possible source of danger to them. A jury would be likely to hold them responsible in such a case unless they could prove that they had exercised due care. This in turn might be taken advantage of by the occasional dishonest dispensary patient as an opportunity to levy blackmail. Bearing these facts in mind, I would humbly suggest that the dispensary managers, in compliance with the State law, supply a safe in the waiting-room, according to the custom in hotels and bathing-pavilions, and then post the usual notices warning people that the proprietors—or rather the philanthropists—will not consider themselves responsible for valuables not placed in the safe.

Louis C. Ager, M.D.

Brooklyn, N. Y.

THE FERROCYANIC TEST FOR ALBUMIN IN THE URINE.

To the Editor of the Medical Record.

Sir: A source of error in the use of this test, not heretofore mentioned, is due to iron in mineral water taken by the patient. In a case recently examined by the writer, a sample of urine, which gave but faint traces of albumin with Jolle's, Spiegler's, Tanret's, Roberts', Esbach's, and the heat and acid tests, yielded an abundant flocculent precipitate with the ferrocyanic test after standing half an hour. Sedimented in the centrifugal machine, the bulk percentage, at one thousand revolutions per minute for five minutes, was nearly seven, reduced to two and one-half at seventeen hundred revolutions for half an hour.

Differentiation from albumin can be made by observing the blue color of the precipitate when sedimented. The mineral water in question was that of Pueblo, Col.

Clifford Mitchell, M.D.

Chicago.

New Instruments.

THE HEMOSPAST.

By Veranus A. Moore, M.D.,

New York State Veterinary College, Cornell University, Ithaca, N. Y.

The extent to which the results obtained from blood examinations are being relied upon in making positive diagnoses renders improvement in the instruments for drawing even the little blood necessary for this purpose a matter worthy of attention. In addition to the examination of the blood by the physician for immediate assistance, it is being investigated more and more thoroughly in histological laboratories, and in determining the nature of many diseases the changes produced in the blood are receiving increased consideration. By any of the methods ordinarily used the procuring of fresh blood from the human subject for microscopic examination is somewhat clumsy and often annoying to the operator. Usually a surgical needle is employed, but with the anæmic and often nervous individual the sight of this simple implement, not to mention the making of the slight incision, causes much apprehension. This is especially true if it is necessary, as it sometimes is, to make two or more "stabs" before a sufficient flow of blood is obtained. In working with the smaller or experimental animals the task is less difficult, but even here the incision which is made with a scalpel, bistoury, or scissors, is unnecessarily long or deep. For the larger animals the spring fleam is very satisfactory, but it is not applicable for the smaller species or for the human subject.

The introduction of the hematocrit, for the determination of the number of red blood corpuscles, necessitates a slightly larger quantity of blood for each examination than was required for the counting-apparatus, and consequently aggravates the difficulties, by the present methods, of procuring the required amount. The desire for an instrument with which the incision could be made instantly, and the depth of the cut accurately regulated, led me to make several experiments in the construction of an apparatus possessed of these

qualities. The outcome was a spring needle lancet which works so admirably and which has so completely removed the difficulties attending the use of the surgical needle or bistoury that it seems worthy of a brief description.

The hemospast[1] consists of a metal tube (I have used brass) about five centimetres long and one centimetre in diameter, with the upper end closed and the lower one covered with a perforated screw cap which has a terminal regulator in the form of a smaller perforated cap. A narrow slot, three centimetres long, is cut in one side of the tube, beginning one-half centimetre from the lower end. In the upper part of the tube is a piece of coiled wire spring of sufficient strength to give the necessary force to a cylindrical plunger, carrying the needle, which is placed next to it in the lower part of the tube. The plunger rests against the cap. The incision is made with a triangular-pointed needle constructed with a shoulder, for convenience in handling, and which screws into the lower end of the plunger. From the side of the plunger projects a trigger which moves in the slot and with which the plunger is pushed up. When set the trigger is easily caught, by a slight twisting movement, into a notch near the upper end of the slot. By means of the regulator the length of the projecting part of the needle can easily be adjusted. When the spring is set the needle is hidden entirely from sight, so that if the instrument is exposed to view it does not suggest an implement of torture. In use it is convenient and easily handled. After the finger, or other part is cleansed and the incision is to be made, the instrument is pressed gently to the part, the trigger touched, and the incision of exactly the depth desired is instantly made. As soon as sprung, the hemospast can be dropped and the collection of the blood begun.

This instrument is equally efficient and much more convenient in procuring small quantities of blood from experimental and other animals than those which I have heretofore observed in the hands of others or employed myself. As it is made entirely of metal it can be sterilized in any of the germicides used in disinfecting surgical instruments, or by dry heat. If desired, it can be made larger and stronger, with needles of various sizes, and, if preferred, with a cutting edge of a millimetre or more in length. It is available, therefore, for workers in laboratories where normal human blood or that of healthy or diseased animals is being studied, as well as for the practising physician. Although simple in its design, there were a few mechanical difficulties encountered, for the overcoming of which I am indebted to Mr. W. C. Barnard for timely suggestions.

A NEW COMEDO EXTRACTOR.

By CHARLES W. ALLEN, M.D.,

NEW YORK.

THE instrument represented in the accompanying illustration has the advantage over others in use for the same purpose that it cannot become clogged; that the

lesion is kept in unobstructed view; that lateral pressure, massage, and gentle squeezing of the tissues can be carried out without injurious pressure, being possible by reason of a guard which prevents the arms of the instrument from wholly closing. In the handle a three-edged lance-shaped knife and sharp spoon are hidden. The former is sufficiently sharp for scarification as well as for opening pustules, deep nodes, etc., or for pricking the opening of the comedo follicle or incising its walls.

With the stylet closed the instrument can be carried in the pocket, and it offers the further advantage of a combination of all the instruments necessary in the local treatment of an ordinary case of acne vulgaris, or comedones.

It is made by Messrs. Tiemann & Co., 107 Park Row.

[1] "Hemospast" is the noun from the Greek combination of which the adjective form hemospastic (drawing or attracting blood) is already in use.

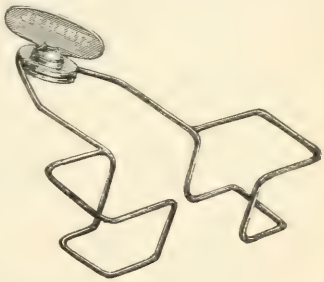
SELF-RETAINING ABDOMINAL RETRACTOR.

By JOHN N. BELL, M.D.,

DETROIT, MICH.,

GYNÆCOLOGIST TO HARPER HOSPITAL; LECTURER, ASSISTANT DEMONSTRATOR OF ANATOMY, DETROIT COLLEGE OF MEDICINE.

THE accompanying illustration represents a self-retaining abdominal retractor which I have recently devised. In removing pus-tubes, small fibromata, and multilocular cysts, with the patient in Trendelenburg's position, this instrument is especially useful; keeping, as it does, the field of operation widely exposed to view, the locating and ligating of bleeding points are greatly facilitated.



The shorter blades are entered through the abdominal incision and retraction of the walls made to any extent desired; the thumb-screw (which should point toward the pubes) is then set.

The instrument is at present in use at Harper Hospital, and gives perfect satisfaction.

Uses of Bananas.—It is hardly necessary to state that well-matured bananas that have not begun to decay are a very wholesome and nutritious food. No more than that the biggest apples or pears always are the best, are the biggest bananas the finest flavored; on the contrary, the larger they are the more mealy they taste. The cultivation of bananas, although it has in the last ten years assumed gigantic proportions, may still be said to be in its infancy. Almost every part of the plant can be used for some useful purpose; the stalk forms an excellent material for the manufacture of paper, or the fibre might be extracted; the peel of the fruit will make excellent indelible ink: the green fruit dried can be converted into wholesome flour. The fruit, when ripe, consists of seventy-four per cent. of water; of the remaining twenty-six parts, twenty are sugar and two gluten or flesh-forming food. Hence, like rice, though exceedingly nutritious, it requires the addition of some more nitrogenous material. Green bananas, boiled tender, if given to the hens, will make them lay more eggs than any other food. Dried bananas, or banana figs as they are called, are now in the market, and will undoubtedly soon be a great article of trade as soon as found by the schoolboy. They are sweet, wholesome, and nourishing.—*The Sanitarian.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 3, 1897:

	Cases.	Deaths
Tuberculosis	105	91
Typhoid fever	13	5
Scarlet fever	107	9
Cerebro-spinal meningitis	0	0
Measles	211	11
Diphtheria	249	25
Laryngeal diphtheria (croup)	12	7
Chicken-pox	12	0
Small-pox	4	0

Egg Albumen as a Medicine.—When the patient is hardly able to pay a doctor's bill, to say nothing of a drug bill, a cheap and handy substitute for fancy invalid foods is desirable. When fever is present and appetite is *nil*, and when we want an aseptic article of diet, Dr. Boynton says, the white of an egg raw serves both as food and medicine. The way to give it is to drain off the albumin from an opening about half an inch in diameter at the small end of the egg, the yelk remaining inside the shell; add a little salt to this and direct the patient to swallow it. Repeat every hour or two. In typhoid fever this mode of feeding materially helps us in carrying out an antiseptic and aseptic plan of treatment. Furthermore, the albumin to a certain extent may antidote the toxins of the disease. Patients may at first rebel at the idea of eating a "raw" egg, but the quickness with which it goes down without the yelk proves it to be less disagreeable than they supposed.—*Pacific Medical Journal.*

Tuberculosis.—The great white plague, as tuberculosis has been aptly termed, is the greatest disease scourge of the human race at the present day. According to Vaughan, one person in every sixty in this country is affected with the malady in some form. The world over, ten thousand human beings "cross the range" every twenty-four hours from this cause alone. The ravages of war and famine pale into insignificance when compared with the steady march of devastation of this fell enemy of mankind. No condition of life, no age is exempt. The infant in its cradle, the boy and girl at play, the young man at his desk, husband and wife, father and mother, the white-haired centenarian—all succumb to the invisible but invincible hordes.—*Denver Medical Times.*

Nephew of George Washington.—It is not generally known that a nephew of the first president of the United States was a member of the medical profession. Dr. Bailey Washington entered the United States navy as a surgeon in 1810. He died August 5, 1854. He was the surgeon of the *Enterprise* when she captured the *Boxer* during the war of 1812. He afterward acted with great efficiency on Lake Ontario under Commodore Chauncey, and was selected by him as fleet surgeon, although a junior officer in the service. He was afterward fleet surgeon under Commodores Rogers, Elliot, and Patterson in the Mediterranean, and closed his active sea service during the Mexican war. At the time of his death he was consulting and visiting surgeon of the navy yard and marine barracks in Washington.—*British Medical Journal.*

Hospital Car.—It is reported that a novelty in railway carriages will shortly be placed on the Belgian lines. This is a *wagon-hôpital*, fitted up, as its name implies, for invalids, and containing twenty-four beds upon wire springs, and various surgical and medical appliances. The new carriage will be utilized for the first time by the pilgrims to Lourdes next month. An unusual feature is a little chapel attached to the carriage, where by special permission from the Pope mass will be celebrated.—*The British Medical Journal.*

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the United States Marine Hospital service, during the week ended July 3, 1897:

		Cases.	Deaths.
Small-pox in United States.			
Memphis, Tenn.	June 13th to 27th	3	
Brooklyn, N. Y.	June 12th to 25th	1	
Cambridge, Mass.	June 12th to 26th	1	
Chicago, Ill.	May 1st to 31st	3	
Small-pox in Foreign.			
Bombay, India	May 25th to June 1st	2	1
Calcutta, India	May 8th to 15th	0	8
Gibraltar	June 6th to 13th	1	1
Hong-Kong, China	April 24th to May 22d	0	23
Madras, India	May 14th to 28th	0	1
Madrid, Spain	May 26th to June 8th	0	1
Nagasaki, Japan	May 29th to June 3d	7	
Odessa, Russia	June 5th to 12th	4	
Osaka and Hiogo, Japan	May 29th to June 5th	2	0
Matanzas, Cuba	June 5th to 12th	1	1
Sagua la Grande, Cuba	June 11th to 14th	45	
Trieste, Austria	May 22d to 29th	1	1
Havana, Cuba	June 17th to 24th	0	
Chihuahua, Mexico	June 22d	Reported.	
Crete, Italy	May 1st to 31st		2
London, England	June 6th to 12th	2	1
Glasgow, Scotland	June 5th to 12th	1	
Cholera.			
Bombay, India	May 25th to June 1st	0	15
Calcutta, India	May 8th to 15th	0	19
Yellow Fever.			
Carderias, Cuba	June 12th to 14th	8	2
Para, Brazil	May 29th to June 12th		2
Matanzas, Cuba	June 6th to 16th		4
Sagua la Grande, Cuba	June 13th to 14th	10	
Santiago de Cuba	June 5th to 19th	0	1
Havana, Cuba	June 17th to 24th	1	2
Plague.			
Bombay, India	May 25th to June 1st		34

The Diagnosis of Uterine Cancer is not very difficult in the majority of cases, says Kessier in the *St. Petersburger medicinische Wochenschrift.* The text-books lead us to believe that it is always associated with cachexia; the suffering expression of the face, very frequent hemorrhages, fœtid discharges, etc., are not always present. But a serous discharge or bleeding between menstrual periods, and particularly a hemorrhage after the menopause, should make one very suspicious of malignant disease. He deprecates the practice of giving ergot or styptics in uterine hemorrhage when one suspects carcinoma, because while using these drugs the disease is progressing and valuable time is lost.

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

THE MENOPAUSE. By Dr. Andrew F. Currier. 12mo. 360 pages. D. Appleton & Co., New York.

EDINBURGH MEDICAL JOURNAL. Edited by Dr. G. A. Gibson. New series. Vol. I. 8vo. 692 pages. Illustrated. Young J. Pentland, Edinburgh.

INEBRIETY IRRELEVANT. By Dr. David Walsh. 12mo. 68 pages. Baillière, Tindall & Cox, London. Price, 3s. 6d.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION, 1896. Vol. IX. 8vo. 474 pages.

ANOMALIES AND CURIOSITIES OF MEDICINE. By Dr. George M. Gould and Dr. Walter L. Pyle. 8vo, 968 pages. Illustrated. W. B. Saunders, Philadelphia, Pa. Price, cloth, $6.00; [illegible] $7.00.

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Original Articles.

MORTALITY AND TREATMENT OF ACUTE INTUSSUSCEPTION—WITH TABLE OF TWO HUNDRED AND THIRTY-NINE CASES.[1]

BY C. L. GIBSON, M.D.,

NEW YORK,

ATTENDING SURGEON, ST. LUKE'S HOSPITAL.

IN the course of a systematic study of the recent literature of intestinal obstruction the writer's interest was particularly attracted, by the occurrence of several prominent features, to that variety due to invagination of the various segments of the intestinal tract. These were that intussusception, while presenting conditions allowing of easy and certain diagnosis much oftener than observed in other forms of obstruction, was nevertheless attended with no lesser mortality; again, that invagination of the intestines, unlike other varieties of obstruction, could in a certain proportion of cases be relieved by mechanical non-operative measures, and yet remained one of the most fatal.

A third point was the variance exhibited by the statistics collected by different authors, as exampled by Rydygier in 1895, giving a mortality of seventy-five per cent. in acute cases, and Wiggins in 1896, whose statistics in recent times and after the exclusion of certain conditions gave a mortality of twenty-two per cent. The conclusions reached by the latter writer in his most careful paper have been widely quoted and his painstaking work has received most favorable comment.

To the writer the low figure (twenty-two per cent. mortality) just quoted could not appeal, and it seemed to him that if he must answer his own query, why he was attempting to add to an already congested literature, he might find a reply in the effort to present the subject in a broader light. The essential reason, however, for writing this paper is to place on record a more extensive literature of the operative relief of acute intussusception than has ever been attempted before, the writer believes, in English or any other language. Rydygier in 1895 read a most exhaustive paper before the German Surgical Congress, based on his own large experience and the cases reported in the literature for the previous ten years (eighty-six cases), taking up the subject where Braun's statistics had paused in 1885. Braun's table contained sixty-six cases, going back to the earliest recorded in the seventeenth century. The literature of the subject then, as compiled by these German authors in 1895, comprised a total of one hundred and fifty-two cases treated by abdominal section, in which all cases—the chronic, lasting perhaps for years; those due to new growths, and therefore attended with special conditions; and the purely acute forms—were all included. But very slight observation convinced the writer of the necessity of a very definite separation of these forms for the purpose of studying the results of their treatment, and of the lack of a single exhaustive collection of cases of the acute form from which to attempt to derive fair conclusions.

The writer has collected two hundred and thirty-nine cases, divided into two classes: those occurring prior to 1888, eighty-nine cases, and those occurring since 1887, up to January 1, 1897, one hundred and fifty cases.

The division of time is somewhat arbitrary, representing in the second table the writer's convenience as to a part of his studies on the general subject of intestinal obstruction since 1887. These later years present conditions which make a comparative study of intestinal surgery most valuable. Antisepsis had already become quite well established and subsequently was reinforced by asepsis. Union of divided or non-adjacent portions of the intestine by mechanical aids had at the opening of this period been shown to be of great value, both in the improvement of results and in the encouragement of more frequent surgical interventions. The increased frequency of operations following familiarity with the possibilities of artificial methods of anastomosis led to eager efforts to improve the existing means, resulting in increased and better methods of suture and the temporary passing of the mechanical devices. In the latter part of this period, the best of these devices, the Murphy button, soon after its introduction in 1892, came to compete with and, to a great extent, divert attention from the improved methods of suture.

Then, again, many of the operators were no longer pioneers in the branch of abdominal surgery, relying on themselves to evolve measures of certain value, and the younger generation in its earlier efforts was now guided by the valuable teaching of the riper experience of its predecessors. The second table will therefore be used exclusively for the study of the conditions from which a fair estimate of the results obtained may be derived. Though the writer can claim an honest attempt to approach the subject by painstaking efforts of research, he has no illusions concerning its completeness, for he is aware of the existence of a number of observations in the literature of the English, French, and German languages that were either inaccessible or too incomplete to utilize. And, moreover, he has little doubt that he has overlooked some cases, for which no reason but carelessness can be advanced. The records of the first series prior to 1888 have not been the subject of the same care, as their smaller value on the whole seemed not to call for a like amount of labor. They have only exceptionally been derived from their original source, having been obtained almost entirely from the tables of Braun,[93] Barker,[62] Rydygier,[44] and Wiggins.[74] They are recorded for the sake of completeness and for their possible value to other investigators.

It has seemed wisest not to attempt a systematic and equal consideration of the various divisions of the subject of intussusception; but to concentrate the observations derived from the recorded cases chiefly upon a review of the causes and elements influencing the mortality attending abdominal section, and, guided by the results thus found, to attempt the outlining of a definite

[1] Read by title at the pædiatric section of the American Medical Association, June 3, 1897.

TABLE I. (Cases Prior to 1888). Section A—Died.

Case No.	Operator.	Year	Age. Mos.	Age. Years	Sex	Duration. Days.	Anatomical Variety.	Symptoms.	Previous Treatment.	Operation.	Remarks.
1	Beck, 74*	1877	8	..	F.	2	Ileo-cæcal.	.....	Enemata.	Reduction.	
2	Beck, 74	1882	..	1	..	..	"	.....	.....	"	
3	Busch, 74	1870	2	..	M.	4	.....	.....	.....	Artificial anus.	
4	Braun, 92	1882	3	..	M.	5	Ileo-colic	Blood, mucus; felt in rectum.	Enemata; partial reduction.	Resection 80 cm., E.-E.† anastomosis, suture.	
5	Beck, 92	1885	2	..	M.	..	Ileo-cæcal	.....	Enemata.	Irreducible.	
6	Bell, 92	1875	10	..	F.	..	Sigmoid-colon.	Felt in rectum.	Enemata, air and water.	Irreducible, artificial anus.	
7	Brown, 92	1882	..	14	M.	1	.....	.....	.....	Irreducible, artificial anus.	
8	Bruns, 44	1886	..	13	M.	4 weeks; acute.	Ileo-cæcal.	.....	.....	Resection 150 cm.	Post mortem, anastomosis perfect.
9	Corley, 74	1874	2	..	M.	Some days	Ileo-colic	.....	.....	.....	
10	Czerny, 92	1883	..	36	F.	8	Ileo-cæcal.	Vomit; not felt in rectum.	.....	Resection 47 cm. ileum, E.-E., Czerny suture.	
11	Carnes, 92	1866	..	20	M.	5	"	.....	.....	Irreducible, artificial anus	
12	Duncan, 74	1873	5	..	..	..	"				
13	Davies-Colley, 92	....	..	2	M.	1					
14	Fischer, 92	1881	..	27	F.	..	Ileo-cæcal	.....	.....	Resection.	
15	K. Franks, 44	Before 1886	..	Adult	M.	3	Enteric	.....	.....	Reduction.	
16	Foxwell, 52	1886	Child	..	M.	10	.....	.....	.....		
17	Gerson, 74	1828	3	..	M.	Acute.	Ileo-cæcal.	.....	.....	Incomplete operation.	
18	Godlee, 74	1882	3	..	..	..	.....	.....	.....	Irreducible.	
19	Godlee, 74	1883	7	..	..	1	Ileo-cæcal	.....	Enemata.	Reduction difficult.	
20	Hauff, 92	1841	..	36	M	3; chronic and acute	"	Prolapsed.	.....	Artificial anus.	
21	Hirschsprung, 92	1871	92	..	F.	..	Colon.	Blood and mucus.	.....	" "	
22	Hutchinson, 74	1875	10	..	..	3	Ileo-cæcal.	.....	Enemata	Reduction difficult.	
23	Horsley, 74	1885	4	..	M.	4	"	.....	.....	Artificial anus	
24	Horsley, 74	1885	5	..	M.	21	"				
25	Howard, 92	1882	17	..	..	5	"	Blood.	.....	Reduction; puncture of intestine.	Post mortem, peritonitis.
26	Howse, 92	1876	..	..	..	Acute	.....	Blood and mucus	.....	Gut ruptured in reduction; suture.	
27	Kuster, 92	1879	..	40	M.	6	Entero-	Fæcal vomit; blood.	.....	Resection, E.-E. anastomosis, Lembert.	Pre-existing peritonitis.
28	Jacobson, 52	....	11	..	..	1	.....	.....	.....	Irreducible.	
29	Jaeger, 92	1885	..	12	F.	2	Enteric	Vomit; not felt in rectum.	.....	Resection 80 cm., E.-E anastomosis, Lembert, 1½ hours.	Post mortem, beginning gangrene, line of suture.
30	Jacobi, 74	1880	..	..	F.	1 (15 hrs.)	.....	.....	Enemata.	Reduction difficult.	
31	Jacobson, 74	1886	9	..	M.	21	.....	.....	.....	Resection.	
32	Little, 92	1878	..	5	M.	1	Ileo-cæcal.	.....	.....	Reduction.	
33	Laroyenne, 92	1870	Child.	..	..	..	.....	.....	.....	Irreducible.	
34	Marsh, 74	1889	3	..	F.	2	.....	.....	.....	Artificial anus.	
35	Marsh, 92	1878	9	..	M.	6	.....	.....	.....	Reduction.	
36	Mikulicz, 92	1883	..	21	F.	10	Ileo-colic.	.....	Enema	"	Pyæmia
37	Morris, 92	1877	..	12	M.	3	Enteric	Blood, vomit; felt in rectum.	.....	Resection; artificial anus of ends.	Post mortem, supposed intussusception felt in rectum was a clot of blood.
38	Müller, 92	1872	..	33	M.	7; chronic and acute	Ileo-cæcal.	Vomit	.....	Artificial anus.	Post mortem, intussusception gangrenous.
39	Owen, 74	1885	3 days.	..	F.	..	"	.....	Enemata.	" "	
40	Ohle, 92	1810	..	50	M.	12	"	.....	Incision of intussusception protruding at anus	Reduction, suture of colon, threads brought outside belly.	Post mortem, gangrene of colon.
41	Obalinski, 92	1883	..	63	M.	..	Enteric.	Fæcal vomit; not felt in rectum	.....	Resection 90 cm.	Septic peritonitis.
42	Obalinski, 44	1885	..	28	F.	8	Colon-sigmoid	.....	.....	Artificial anus.	Post mortem, pre-existing peritonitis.
43	Obalinski, 44	1887	3	..	..	2	Ileo-cæcal.	.....	.....	Reduction.	
44	Pick, 74	1887	6	..	..	4	Enteric.	.....	Enemata.	Invagination not found.	
45	Page, 92	1878	..	5	..	Chronic and acute	Ileo-cæcal.	.....	.....	Reduction	
46	Pollard, 92	1882	..	..	F.	2	Ileo-colic.	Mucus; felt in rectum	.....	Resection ileo-cæcal coil.	Post mortem, operative condition perfect.
47	Robert, 92	1852	..	24	F.	10	Sigmoid into descending colon.	Vomit, blood	.....	Artificial anus	
48	Rosenbach, 92	1884	..	6	M.	8	.....	Blood, mucus; felt in rectum.	Enemata and reduction first day; enemata and partial reduction second day; enemata daily till operation.	Reduced with difficulty; necrotic portion treated extraperitoneally.	
49	Rydygier, 44	1884	..	19	M.	4	Ileo-cæcal.	.....	.....	Reduction.	
50	Robson, 52	1885	..	28	F.	7	Enteric.	.....	.....	Resection.	
51	Sands, 74	1878	6	..	F.	3	Ileo-cæcal.				
52	Symonds, 74	1884	5	..	M.	..	"				
53	Symonds, 74	1884	6	..	M.	..	"				
54	Stage, 74	1870	6	..	F.	..	"	.....	.....	Artificial anus	
55	Smith, 74	1877	8	..	M.	..	"	.....	Enemata	Resection	
56	Stage, 74	1886	3	..	M.	1					
57	Strong, 40	.....	1	..	M.	1 (22 hrs.)	.....	Blood.	Enema and chloroform.	Reduction.	Convulsions, no abdominal manifestations after operation.
58	M. Schmidt, 44	1887	..	1	F.	..	Enteric.	.....	.....	Artificial anus	
59	B. Schmidt	.....	..	4	..	5	Double (reverse) colon	.....	.....	Resection, E.-E., Czerny suture.	
60	Schattauer, 44	Before 1887	..	1	F.	..	Colon.	.....	.....	Reduction difficult; two tears in peritoneum.	Post mortem, necrosis and perforation at neck.
61	v. Thaden, 92	1886	..	24	M.	..	Ileo-colic	.....	.....	Artificial anus	Gangrene of intussusception.
62	Van Arsdale, 74	1887	..	..	..	..	.....	.....	.....	"	
63	Van Arsdale, 74	1887	..	..	..	..	.....	.....	.....	Operation incomplete.	
64	Van Arsdale, 74	1886	..	..	..	..	.....	.....	.....	Artificial anus.	
65	v. Wahl, 44	1886	..	32	M.	1 (20 hrs.)	Ileo-colic	.....	.....	Reduction.	Pulmonary œdema
66	Winiwarter, 92	1885	..	60	M	3	Colon	.....	.....	Irreducible, artificial anus	
67	v. Wahl, 92	1884	..	44	F	..	Ileo-cæcal	Prolapse at anus	Manual reposition.	"	
68	Wells, 74	1870	9	..	M	..	"				
69	Weinlechner, 74	1871	..	..	F.	4	"				
70	Wendelstadt, 92	1886	..	8	M	5	Colon.	Vomit, blood; felt in rectum	Enemata, air and water, second day	Resection, E.-E. anastomosis	
71	Walsham, 74	1874	7	..	F.	..	.....	.....	Enemata	Reduction failed	
72	Zielewicz, 13	1887	..	42	F.	8	Ileum and trans. colon into sigmoid	.....	.....	.....	Post mortem, perforation transverse colon.

* Corresponding number of bibliographical index. † End to End.

TABLE I. SECTION B—CURED.

Case Number	Operator.	Year.	Age. Months.	Age. Years.	Sex.	Duration. Days.	Anatomical Variety.	Symptoms.	Previous Treatment.	Operation.	Remarks.
73	Bellamy, 74*	1879	..	84	F.	1	Lateral invagination; small intestine into sigmoid.	Fæcal vomit.	.....	Reduction.	
74	Borch, 44	Before 1885		[illegible]	M.	7	Enteric.	.....	.....	"	
75	Carver, 54	1887	..	2	..	7 weeks and acute.	Ileo-cæcal	Fæcal vomit, blood; felt in rectum.	....	Reduction, 50 minutes.	
76	Czerny, 92	1884	..	52	F.	Chronic and acute	"	.....	....	Resection ileo-cæcal coil, E.-E., Czerny suture, 95 minutes.	
77	Fuchsius, 92	1824	..	28	M.	2	"	.....	.....	Reduction after incision of sheath, purse-string suture of incision.	
78	Godlee, 74	1881	..	..	..	2	Ileo-cæcal.	.....	Massage and inflation.	Reduction easy.	
79	Gay, 17	1886	..	..	F.	"	"	.....	.....	Reduction.	
80	Heald and Irish, 18	1885	..	25	M.	"	"	.....	.....	"	
81	Howse, 32	1874	..	33	M.	18	.....	.....	.....	Reduction difficult.	
82	Kleeberg, 32	1879	..	42	M.	1	Double colic.	.....	.....	" "	
83	Marsh, 44	1875	6	..	M	1	Ileo-cæcal.	.....	Enemata	Reduction easy.	
84	Nash, 42	1692	..	50	F.	..	.....	.....	.....	Reduction.	
85	Sands, 44	1877	8	..	F.	1 to 12 hrs.	Ileo-cæcal.	.....	Enemata, air and water.	Reduction difficult.	
86	Snowball, 44	1886	8	..	M.	1	.....	.....	Inflation.	Reduction easy.	
87	Stelzner, 44	Before 1884	..	24	M.	12	Enteric.	.....	.....	Reduction; rupture and suture of gut.	
88	Schattauer, 44	Before 1886	8		..	Some hours.	"	.....	....	Reduction.	
89	Wilson, 92	1831	..	20	M.	15	Enteric.	.....	.....	Reduction; gut very suspicious.	

TABLE II. (CASES SINCE 1887). SECTION A—SIMPLE RESECTION. ABDOMINAL SECTION FOR REDUCIBLE INTUSSUSCEPTION.

Case Number	Operator.	Year.	Age. Months.	Age. Years.	Sex.	Anatomical Variety.	Duration, Days.	Symptoms.	Previous Treatment.	Operation.	Remarks.
1	Annandale, 23*	1888	..	3	..	.....	..	.....	.....	Reduction	
2	Alsberg, 43	1891	..	35	M	Ileo-cæcal.	10	Blood	Enema under anæsthetic, third day.	"	
3	Alsberg, 43	1893	..	11	M	"	..	Blood, fæcal vomit	Enema (air) second day.	"	
4	Alsberg, 43	1895	..	18	M.	"	36	Blood, vomit.	.....	"	
5	Ainsley, 65	..	6	..	M.	Hepatic flexure.	1 to 3 hrs.	Blood, mucus; felt in rectum.	Inflation under anæsthetic.	Reduction, 40 minutes.	Condition bad.
6	Anderson, 77	1895	4	..	..	Ileo-colic.	2	Felt in rectum.	" Attempt to reduce invagination" (anæsthetic).	Reduction.	
7	Barker, 27	1894	4	..	M.	.....	..	.....	No enemata.	"	
8	Barker, 27	1894	5	..	M.	.....	..	.....	Enema (anæsthetic) apparently successful.	"	
9	Barker, 27	1893	7	..	F	Ileo-cæcal.	..	Blood, not felt in rectum.	Enema.	"	
10	Butler, 85	1885	..	7	F.	.....	..	Blood, vomit; not felt in rectum.	Enema	Reduction easy.	
11	Bogart, 37	1894	5	..	M.	Cæcum and colon.	4	Felt in rectum.	.....	Reduction.	
12	Barlow, 48	.....	5	..	F.	Ileo-cæcal.	1 to 18 hrs.	Blood, vomit.	Hydrogen inflation.	"	
13	Barker, 30	1894	11	32	F	"	..	Blood, not felt in rectum.	.....	"	Had pneumonia.
14	Barker, 27	1889	5	..	M.	"	..	.....	Reduced by enema but recurred, 5½ hours.	"	
15	Bush, 22	1890	4	..	..	"	..	.....	Enemata.	"	
16	B. Clarke, 85	1892	6	..	..	Colic.	..	.....	.....	Reduction difficult.	
17	Cheyne, 55	.....	..	27	F.	Ileo-cæcal.	..	Blood; felt in rectum.	.....	Reduction.	
18	Crymes, 1	1894	..	12	M.	"	..	.....	Enema, second day; no anæsthetic.	Reduction, 30 minutes.	
19	Delbanco, 4	.....	..	..	M.	"	..	Blood, mucus; felt in rectum.	.....	Reduction.	
20	Eve, 33	1895	11	..	F.	"	1 to 2 days.	Blood and vomit.	Enema.	"	Slight invagination, cut entirely reduced by enema.
21	Gould, 2	1891	..	3	F	Descending colon.	2	Blood	Insufflation	"	
22	Godlee, 27	1892	4	..	M	Ileo-cæcal.	1	Normal excretion.	Enema, first day.	"	
23	Howitt, 6	1893	8	..	M.	"	2	Blood, fæcal vomit.	Enema.	"	
24	Howitt, 6	1894	7	..	..	Hepatic and colon.	1	Blood	Insufflation.	"	
25	Harris, 22	1890	..	24	M.	Ileo-cæcal.	1	.....	.....	"	
26	Hulke (1st. op.), 79	1890	..	2	M.	Enteric.	1 to 2 hrs.	Blood	Enemata, air and water, under anæsthetic at 4 hours.	"	Same patient; returned in 2 months; fæcal fistula which healed in 2 months.
27	Hulke (2nd op.), 79	1890	..	3	M	.....	4	Blood and fæcal vomit.	.....	Reduction; rupture of gut; suture.	
28	Hollander (Israels), 21	1891	..	19	M	Enteric.	11	.....	.....	Reduction.	
29	Johnson, 88	1892	..	28	M.	Descending colon.	1	Vomit	Enemata for several days.	Reduction, 35 minutes.	
30	Kelsey, 51	1895	3	..	..	Ileo-cæcal.	1	.....	.....	Reduction.	
31	Kammerer, 91	1890	8	..	..	"	1	Blood; felt in rectum	Enema under anæsthetic.	"	
32	Kopat, 92	1895	5	..	F	Ileo-cæcal.	1	Blood and vomit.	.....	Reduction, 45 minutes.	
33	Korte, 44	1881	..	..	M	Retrograde (ileo-colic).	..	.....	.....	Reduction.	
34	Kux, 32	1877	..	42	M	Ileo-cæcal.	..	.....	.....	"	
35	Lockwood, 51	1894	9	..	M	.....	1	.....	Enemata with anæsthetic.	"	
36	Lund, 32	1845	..	2	F	Enteric.	2	Fæcal vomit, no blood	.....	"	

* [illegible] retrograde intussusception.

TABLE II. (Cases Since 1887.) Section A—Successful Abdominal Section for Reducible Intussusception.

Case Number.	Operator.	Year.	Age. Months.	Age. Years.	Sex.	Anatomical Variety.	Duration, Days.	Symptoms.	Previous Treatment.	Operation.	Remarks.
37	Lindemann, 42*...	1891	..	11	M.	... .	3	Felt in rectum.	Enema.	Reduction; isolation of suspicious gut; art. anus in transverse colon 2 days later.	Artificial anus cured by operation.
38	Marsh and Savory, 85.	1890	9	..	M.	.....	2	Blood; felt in rectum.	.....	Reduction.	
39	McBurney, 80	1891	..	13	M.	.....	4	Vomit; not felt in rectum.	Enema, third day.	"	
40	Meek, 75.....	....	7	..	M.	Ileo-colic.	1 (10 hrs.)	Blood.	.....	"	
41	Macewen, 46.....	1891	9	..	..	Colon.	..	.....	.....	"	
42	Neuber, 44	1891	..	60	..	Sigmoid-rectal.	8	.....	.....	"	
43	Obalinski, 44	1895	..	25	F.	Ileo-cæcal.	8	.....	.....	"	
44	Ochsner, 51	1892	..	3	M.	"	1 (6 hrs.)	Mucus, no blood; not felt in rectum.	....	"	
45	Perceval, 53	1888	..	21	M.	"	3	.....	Enema second day.	"	
46	Pilgrim, 50	1894	..	29	M.	Colon-rectum (recurrent).	24	.....	.....	"	
47	Pollard, 64	1894	7	..	F.	Ileo-cæcal	1	.....	.....	Reduction difficult.	
48	Roughton, 67.....	1893	4	..	F.	.....	1	Vomit, blood; felt in rectum.	....	Reduction.	
49	Ridley and Beattey, 28.	..	11	..	F.	.....	11	Vomit, mucus; felt in rectum.	41 hours before enema under anæsthetic; on coming out recurred. Insufflation under anæsthetic; reduction; fæces passed; 20 hours later recurrence.	Reduction; puncture of gut to evacuate gas.	
50	Renton, 47	1895	9	..	..	Ileo-cæcal.	..	....	Inflation.	Reduction.	
51	Renton, 35	....	11	..	..	Splenic flexure	2	.....	Enemata, air and water; kneading.	"	
52	Renton, 35	....	3	..	..	Ileo-cæcal.	1	.....	Enemata.	"	
53	Stretton, 66.....	1894	..	20	M.	.....	3	....	.....	"	
54	Shepherd, 60.....	1892	..	6	F.	.....	3	Blood, vomit; felt in rectum.	Enemata with anæsthetic.	"	
55	Swift, 19.....	1888	20	..	M.	Colon-sigmoid.	2	Blood; felt in rectum.	.....	"	
56	Thompson, 25	1891	..	10	M.	Ileo-cæcal.	4	....	Enema second day with apparent reduction.	Reduction; puncture of intestine.	
57	Twynan, 11	1888	..	7	M.	Colon.	2	Vomit, mucus, and blood; not felt in rectum.	No enema.	Reduction.	
58	Univ. C. H., London, 74.	1889	5	..	F.	Ileo-cæcal.	..	....	Enemata.	"	
59	Verrall, 26.....	1892	6	..	M.	"	5	Blood; not felt in rectum.	Enema under anæsthetic prior to operation.	"	
60	Warren, 21.....	1896	6	..	M.	....	2	Blood and mucus; not felt in rectum.	.....	"	
61	Warren, 21.....	1896	6	..	M.	Colon.	3	Blood and mucus; not felt in rectum.	....	"	
†	Pollard, 61 *a*	1892	6	..	M.	Ileo-cæcal.	1 (16 hrs.)	Vomit; not felt in rectum.	Enema under chloroform.	Intussusception found all reduced.	

TABLE II. Section B—Unsuccessful Abdominal Section for Reducible Intussusception.

Case Number.	Operator.	Year.	Age. Months.	Age. Years.	Sex.	Anatomical Variety.	Duration, Days.	Symptoms.	Previous Treatment.	Operation.	Time of Death.	Remarks.
62	Alsberg, 43*.....	1894	...	1	M.	Colon.	7	Blood; felt in rectum.	Manipulation fifth day	Reduction	8 hours.	
63	Abbe, 8	....	...	...	...	.....	1 (16 hrs.)	....	....	"	1 day	
64	Briddon, 8.....	1894	8	...	M.	Ileo-cæcal.	1	Vomit, blood; felt in rectum.	....	"	5 hours.	
65	Bennett, 89.....	1895	4	...	M.	Ileo-colic.	1 (18 hrs.)	Blood.	Enema.	Reduction easy except last 3 inches; incision and suture of cæcum; beginning sloughing of colon and general peritonitis.	8 hours.	
66	Barker, 30.....	1894	5	...	M.	....	2	Blood; felt in rectum.	Enema under chloroform; intussusception reduced; recurrence next day of signs and symptoms.	Reduction.	2 days.	Ante mortem, temperature, 107.8°; post mortem, no ulceration, no sloughing; sepsis (?).
67	Barker, 27.....	1889	16	...	M.	Ileo-cæcal.	3	No blood.	Inflation end of first 24 hours with apparent reduction.	Reduction; appearance of gut suspicious.	1 day.	Post mortem, perforation of suspicious gut
68	Braun, 44	1893	5	...	M.	"	2	....	.....	Reduction.	12 hours.	
69	Curtis, 72.....	1891	..	30	M.	"	3	Not felt in rectum.	.....	"	5 hours.	Shock.
70	B. Clarke, 85.....	1891	13	...	....	"	2	....	....	Reduction easy	1 day.	Post mortem, complete reduction.
71	Crago, 12.....	1891	8	...	....	"	3	.....	.....	Reduction.		
72	Cripps, 85	1891	5	...	M.	.....	3	Blood, mucus; felt by rectum.	Enemata twice.	Reduction easy.	2 hours.	Post mortem, 4 inches intussusception present.
73	Desguin, 5	1892	..	19	M.	Ileo-cæcal.	5	Blood.	.....	Reduction; fixation of suspicious gut in wound; subsequent opening.	5 days.	Post mortem, intestinal paralysis.
74	Eve, 33...	1893	...	2	M.	.....	7	.....	Reduced by enema under chloroform on sixth day; recurred.	Reduction.	3 days.	Post mortem, broncho-pneumonia; no peritonitis.
75	Eve, 33	1893	11	...	F.	Ileo-cæcal.	1	Felt in rectum.	....	"	1 day.	Vomited and passed blood after operation; no post-mortem.

* Corresponding number of bibliographical index.

† This case is not included in the statistical deductions.

TABLE II. SECTION B—UNSUCCESSFUL ABDOMINAL SECTION FOR RELIABLE INTUSSUSCEPTION.

Case Number.	Operation.	Year	Age. Months.	Age. Years.	Sex.	Anatomical Variety	Duration. Days	Symptoms	Previous Treatment.	Operation.	Time of Death.	Remarks
70	Horsley, 27	1892	...	5	M.	Enteric.	7	...	...	Reduction; incision in gut to relieve distention.	1 day.	
77	Jollye, 58	1891	11	...	M.	Colon-rectum	1 (15 hrs.	Vomit, blood, mucus; felt in rectum.	Enema under chloroform.	Reduction	2 days.	Symptoms of recurrence.
78	Korte, 44	1892	...	4	M	Ileo-cæcal.	6	...	...	Reduction; puncture of gut.	5 hours	Shock
79	Lund, 35	1896	5	...	M.	Enteric.	..	Blood; not felt in rectum	...	Reduction.	8 hours.	Post mortem, second intussusception found (ileo-cæcal).
80	Lowenstein, 10	1889	3½		M.	Into open omphalo-mesenteric duct.	..	...	...	Reduction; excision of duct, 40 minutes.	1 day.	
81	Lauenstein, 44	1894	5	8	F	Ileo-cæcal into transverse colon.	1	Blood	...	Reduction	1 day.	Shock.
82	Lauenstein, 44	1889	6	...	M.	Double colon.	5	Fæcal vomit; blood.	Enemata several days.	"	1 day.	"
83	Marsh, 85	1889	4	...	M.	...	4	Blood, mucus, felt in rectum.	...	Reduction difficult.	6 hours.	Post mortem, no peritonitis.
84	Neuber, 44	1891	3	...	F.	Ileo-colic.	1	Vomit, blood.	...	Reduction.	1 day.	Post mortem, general peritonitis.
85	Nimier, 9	1892	...	...	M.	Double enteric.	2	Fæcal vomit.	...	Reduction easy; duration 1½ hours.	1 hour.	
86	Obalinski, 44	1892	...	43	F.	...	14	...	...	Reduction.	2 days	Post mortem, septic peritonitis.
87	Obalinski, 44	1894	...	68	F.	Ileo-cæcal, descending colon.	3	...	...	"	3 days.	Post mortem, recurrence; no peritonitis.
88	Obalinski, 44	1894	...	46	F.	Ileo-cæcal.	6	...	...	"	8 hours.	Post mortem, typhoid ulcer in intussusception.
89	Pick, 56	1891	15	...	M.	Ileocolic(?).	15	Blood; felt in rectum	Enemata, air and water.	Reduction easy.	...	On second day recurrence and reduction; post mortem, no intussusception.
90	Power, 34	...	8	...	M.	"	1 (13 hrs.	Blood	Insufflation.	Reduction	6 days.	Post mortem, intestinal paralysis.
91	Rydygier, 44	1893	...	8	M.	Colon	4	...	...	"	1 day.	Post mortem, ileo-cæcal intussusception not previously seen.
92	Roberts, 3	1894	9	...	F.	Ileo-cæcal	5	Felt by rectum.	...	Reduction, 25 minutes.	1 day.	Shock.
93	Sick (Schede), 44	1891	5	...	F.	Ileo-colic.	1	Vomit, blood.	...	Reduction.	1 day.	Post mortem, general peritonitis.
94	Shepherd, 60	1892	7	...	...	Entire colon rectum.	...	...	...	Reduction; incision rectum	3 hours.	Shock.
95	Scott, 83	...	6	...	M.	Ileo-colic.	2	...	Enema at 15 hours.	Reduction.	1 day.	Heart failure.
96	Turner and Whipham, 90.	1890	...	29	F.	Enteric and 2 colonic.	2	Blood.	...	Reduction and untwisting.	1 day.	Shock; post mortem, bowel almost gangrenous.
97	Walsham, 85	1890	9	...	M.	...	3	Blood; mucus; felt by rectum.	...	Reduction easy	1 day.	Post mortem, small perforation in transverse colon.
98	Walsham, 85	1888	8	...	M.	...	...	...	...	Reduction	1 day.	
99	Weir, 36	1892	...	...	F.	Ileo-cæcal.	3	Vomit, blood; felt by rectum	Inflation second day; apparent reduction.	"	1 day.	Exhaustion.

TABLE II. SECTION C—SUCCESSFUL ABDOMINAL SECTION FOR NON-REDUCIBLE INTUSSUSCEPTION.

Case Number.	Operator.	Year.	Age. Months	Age. Years.	Sex.	Anatomical Variety.	Duration, Days.	Symptoms.	Previous Treatment.	Operation	Remarks
100	Braun, 44*	1892	...	33	M.	Ileo-cæcal.	28	...	...	Irreducible; entero-anastomosis.	
101	Banks, 31	1894	...	7	M.	Enteric.	-	Blood; not felt in rectum.	...	Resection, 18 inches from valve; E.-E., Murphy button.	Button passed, 19 days.
102	Cripps, 36	...	...	23	F.	...	-	Fæcal vomit; not felt in rectum	...	Artificial anus; later lateral anastomosis; gangrenous ileum and ascending colon.	Eight days later 9 inch slough of intussusception passed by artificial anus.
103	Hollander (Israel), 14.	1896	...	21	M.	Enteric.	-	...	...	Resection 70 cm., E.-E. anastomosis, Murphy.	Button passed sixth day.
104	Kocher, 44	1891	...	20	M.	"	3	...	...	Resection 141 cm. small intestine.	
105	Mikulicz, 44	1889	...	44	F	...	3	...	...	Irreducible; (1) artificial anus; (2) resection, intussusception 6 weeks later; (3) and (4) for closure of fistula.	Fistula persisted 6 months.
106	Oderfeld, 38	1895	...	...	F.	Ileo-cæcal.	28	Felt by rectum.	...	Resection of invaginatum attempted; resection and E.-E. anastomosis, ileum and colon; time, 3 hours.	Temporary fistula.
107	Pick, 84	1891	...	7	F	Enteric	-	Visible peristalsis.	...	Irreducible; resection, E.-E. anastomosis, Murphy button: time, 45 minutes.	Button passed ninth day.
108	Pirrie, 15	1892	...	50	...	...	-	Blood	Enemata.	Artificial anus.	Fistula closed by plastic operation.

* Case not in number of bibliographical index.

TABLE II. SECTION D—UNSUCCESSFUL ABDOMINAL SECTION FOR NON-REDUCIBLE INTUSSUSCEPTION.

Case Number.	Operator.	Year.	Age. Months	Age. Years.	Sex.	Anatomical Variety.	Duration, Days.	Symptoms	Previous Treatment	Operation	Time of Death.	Remarks
109	Alsberg, 42*	1896	..	72	M.	.....		.....	.....	Gangrenous; resection, suture of ends, and lateral anastomosis.	1 day.	Post mortem, condition of anastomosis perfect.
110	Reported by Abbott (?), 86.	1892	..	16	F.	Enteric	7	Vomit	.....	Gangrenous; resection; E.-E. anastomosis, Czerny-Lembert.	2 days	Post mortem, no union between cut ends.
111	Bier (Esmarch), 44	1894	..	1	M.	Colon.	4	.....	.....	Gangrenous; resection; artificial anus.	1 day	Pre-existing peritonitis.
112	Bayer, 80.....	1892	..	7	M.	Ileo-cæcal.	7	Blood, vomit.	.....	Gangrenous; artificial anus; gangrenous area placed outside belly.	At once	Post mortem, volvulus of colon.
113	Bristol, 16.....	1893	..	8	M.	.....	5	Blood.	.....	Artificial anus at apex of intussusception; 9 days later recurrence of symptoms; resection of ileum; ends sutured and lateral anastomosis with Senn's plates.	24 hours	Shock.
114	Bier, 41	1891	..	41	M.	Ileo-cæcal	3	.....	.....	Artificial anus in central end; 2½ months later, resection and lateral anastomosis, ileum and descending colon.	6 days	Provisional suture of artificial anus.
115	Barker, 57.....	1891	4		M.	"		Felt by rectum.	Enema third day.	Resection of invaginatum (Barker's method), 2 inches of gangrenous ileum and cæcum.		
116	Barker, 57.....	1891	..	12	M.	Enteric	3	Blood; not felt by rectum.	None.	Irreducible; resection invaginatum (Barker's method).		
117	Bush, 22	1893	4	..	....	"	3	.....	Enemata	Resection; artificial anus.	1 day.	
118	Carless, 78	1895	5	..	....	Double ileo-cæcal.	2	Vomit, blood; felt in rectum.	Enema under anæsthetic before operation.	Incision of sheath; reduction of inner invagination; artificial anus in colon.	6 hours.	Shock.
119	Cave, 29	1893	..	06	M.	Ileo-colic	4	.....	.....	Artificial anus in lower ileum	1 day.	Diabetic coma.
120	Cartledge, 40 ...	....	..	21	M.	Enteric.	....	Vomit, tenesmus.	.....	Gangrenous; general peritonitis; resection 8 inches, E.-E., Czerny.	1 day.	Pre-existing sepsis.
121	Dalton, 7..	...	..	42	M	Enteric (?).	Some days; acute.	Vomit.	..	Ileum gangrenous; operation incomplete.	3 hours	
122	Drobnik, 44 ...	1892	..	18	I	.....	..	Felt in rectum.	..	Gangrenous; colotomy, ascending colon.	4 days.	Septic peritonitis.
123	Erdman, 73.....	1895	8	..	M	Enteric.	4	.....	Enemata	Gangrenous; resection, anastomosis, Murphy button.	1 day.	Pre-existing peritonitis
124	Gussenbauer, 44..	1894	..	12	I.	Ileo-cæcal	4	.....	.....	Gangrenous; resection.	.....	Septic peritonitis.
125	Goode, 12	....	18	..	M.	"	2	Felt by rectum.	Enemata (air and water) under chloroform first day, tumor almost disappeared.	Irreducible; artificial anus in ileum.	1 day.	
126	Harrington, 60 ..	1889	..	..	....	Ileo-colic.	3	Not felt by rectum.	Enemata under ether third and fifth days.	Gangrenous; artificial anus; gut found perforated by injection (4½ feet pressure).		
127	Horsley, 27..	1890	..	11	M.	Enteric.	3	.....	.....	Gangrenous; general peritonitis.	Operative	
128	Hofmokol, 95....	.....	..	36	M.	Colon.	...	....	... ...	Resection	1 day	
129	Korte, 44.....	1892	4	..	M.	Ileo-cæcal		.....	.....	Gangrenous, artificial anus	1 day	Post mortem, peritonitis; beginning gangrene of gut.
130	Lockwood, 91	1889	..	4	F.	Enteric	5	Vomit, no blood.	.... ..	Resection, L.-E. anastomosis, Czerny-Lembert.	3 hours	Post mortem, beginning peritonitis; anastomosis perfect.
131	Makins, 24.....	1888	..	4	F.	Enteric (?)	3	Not felt by rectum.	.....	Irreducible; excision 2 cm. ileum, with ends in wound for artificial anus.	2 hours	Shock.
132	Meek, 75	....	..	8	M.	Enteric.	4	Vomit, no blood.	....	Irreducible; resection 7 inches; L.-E. anastomosis, Murphy button.	1 hour	
133	Milton, 63.....	....	14	..	....	Ileo-cæcal.		.....	Enemata (soda water).	Resection; E.-E. anastomosis, Czerny-Lembert.	18 hours	
134	Nelson, 15	1893	..	8	M.	Enteric.	6	Vomit, blood; not felt in rectum.	.....	Gangrenous; artificial anus, 8 days later, resection; E.-E. anastomosis with Senn's plates.	3 days	Exhaustion after second operation.
135	Obalinski, 44	1888	..	..	M.	Ileo-cæcal	3	.....	....	Resection, L.-L. anastomosis.	18 hours	
136	Obalinski, 44	1892	..	26	M.	"	10	.....	.....	Gangrenous; resection, E.-E. anastomosis.	18 hours.	
137	Obalinski, 44	1895	..	60	M.	"	1	....	...	Gangrenous; artificial anus.	1 day.	
138	Obalinski, 44	1894	..	40	M.	"	4	....	.....	Resection, L.-L. anastomosis	3 days	No post-mortem.
139	Obalinski, 44 .	1895	..	5	M.	"		.....	.....	Resection; cæcum and transverse colon; E.-E. anastomosis, Murphy button.	3 hours	Shock; post mortem, anastomosis perfect.
140	Rydygier, 44	1893	..	42	M	"	4	.....	.....	Gangrenous and general peritonitis; resection.	3 days	
141	Rydygier, 44	1894	..	90	F.	"	4	....	....	Resection; artificial anus.	3 days.	Croupous pneumonia.
142	Rydygier, 44	1895	..	36	I	"	8	....	....	Gangrenous; resection (Rydygier's method).	3 days.	Pre-existing peritonitis.
143	Sick (Schede), 44 .	1892	..	27	M.	"		.....	....	Resection and anastomosis, artificial anus.	3 hours.	Shock.
144	Sick (Schede), 44	1892	2	..	M	"	1	....	.....	Irreducible; artificial anus.	1 day	
145	Strong, 40	1895.	6	..	M	"	3	Blood, vomit, blood.	.....	Resection 3 inches ileum, L.-L. anastomosis, Lembert.	1 day	
146	Stutsegaard, 44 ..	1894	..	27	M.	Enteric	....	....	....	Resection.	1 day	
147	Usoglio, 87.....	....	..	3	M	Colon.	2	.....	.....	Gangrenous, operation abandoned	2 hours	
148	Wyeth, 60 ..	1897	..	10	M	Ileo-cæcal	12	Blood; felt by rectum.	... .	Artificial anus	3 hours	Shock.
149	Walsham, 85	1895	..	3	M	...	3	Blood, mucus; felt by rectum	Enemata (air and water).	Irreducible; artificial anus, small intestine.	....	No post-mortem.

* Correspondence; number of bibliographical index.

plan of treatment according to the pathological condition existing in any given case.

TABLE III.*

	Vomit.	Blood.	Feces per Rectum.	Mucus per Rectum.
One symptom	8	16	6	1
Two symptoms	13	26	2	4
Three symptoms	7	2	2	1
All symptoms one case	1	1	1	
Total	29	45	11	6

* Compiled only from cases contained in Table II.

As regards diagnosis, little, therefore, need be said, as nothing new or important has been evolved from these researches. Attention is called to the table of symptoms (unfortunately quite incomplete); it will be seen that the presence of a bloody discharge from the rectum is the most constant symptom, and certainly, when present in a young child and accompanied by the sudden onset of abdominal symptoms, must be considered pathognomonic. Its absence, or in fact the absence of any one of the typical symptoms, does not imply that intussusception does not exist. The infrequency of fæcal vomiting is important to note, as some practitioners obstinately refuse to entertain a diagnosis of intestinal obstruction unless this symptom is present.

Notes on the finding of a tumor by abdominal palpation have intentionally been omitted, lest misleading deductions be drawn from them, the value of such observations depending largely on our knowledge of the observer's individual characteristics.

It may be stated, though, that in general palpation of the abdomen yields definite signs of greater value and more frequently than in other forms of acute intestinal obstruction. The lesser and more localized distention usually permits us to palpate the outlines of the intussusception, according to its classical description, as a sausage-shaped tumor. Absence of a clearly recognized tumor is not, however, a proof that intussusception does not exist.

Predisposing Causes.—The writer has no comment to make concerning the usual causes believed generally to be exciting factors in the development of intussusception. The greater frequency of this condition in male children leads him to speculate whether the straining due to a tight phimosis or to a contracted meatus may not have here the same etiological value as is ascribed to these conditions in favoring the development of hernia and prolapse of the rectum. He has unfortunately no notes relative to such conditions, and does not remember to have seen any allusions to the possible causal relationship.

Mortality.—The mortality as collected in the literature is by no means thought to represent that of actual practice; as a rule, the latter is usually considerably higher. It is believed though that the mortality given in these tables (fifty-three per cent.) will perhaps not show so great a discrepancy as in other conditions. Operations for intussusception are not so very frequent, and the great interest attached to them makes it probable that a greater number of the cases is put on record irrespective of the final results. The large number of cases of purely acute intussusception here recorded, occurring in modern times, should give a fairer estimate than previous publications based on a smaller number and dealing with cases operated on before the development of abdominal surgery. Moreover, these cases are all pure forms of intussusception, not due to the presence of or subject to the complications of the attending new growths.

The condition of acute intussusception is one of intestinal obstruction, and its mortality, like that of intestinal obstruction, is due essentially to the duration and cause of the obstruction. Also to be considered are, the site of the obstruction, the degree of the pathological changes of the intestine, the age (and sex). Another important factor having a particular bearing on the condition under consideration is the influence on the mortality of the variety of treatment employed, for it is believed that in no other form of intestinal obstruction is there a better opportunity for the exercise of good judgment as to what special procedure is indicated in any given case.

Results of operations alone are here based solely on Table II. Table I. and Table II. have been utilized in such observations as mortality according to age and sex, and site of obstruction.

TABLE IV.—Mortality and Operations Necessary According to Duration of Symptoms.*

Day.	Died.	Cured.	Total.	Mortality. Per Cent.	Reduction.	Artificial Anus.	Resection	Various.	Per Cent. Not reducible.
First	9	13	22	41	22	..	..	.	0
Second	11	18	28	39	24	3	1	.	14
Third	15	11	26	62	18	4	0	1	8
Fourth	14	4	18	77	6	3	5	..	57
Fifth	11	4	14	72	6	5	2	1	57
Sixth	2	1	3	66	2	..	..	.	0
Seventh	5	4	9	55	5	1	3	.	0
Eighth	1	4	5	.	.	2	1	.	
Tenth	3	0	3	.	.	2	1	.	
Eleventh	0	1	1	.	1	.	.	.	
Twelfth	1	1	2	.	1	1	.	.	
Fourteenth	1	.	1	.	1	.	.	.	
Third week	1	1	2	..	2	.	.	.	
Fourth week	2	1	3	..	1	..	1	1	
No date	8	6	14	..	8	1	4	1	
Total	79	77	149	53	99	22	24	4	33

* In these tables fractions of 0.6 or more are counted as a unit.

A glance at Table IV. shows that the total mortality for one hundred and forty-nine cases is fifty-three per cent. The first and second days show a mortality rate inferior to the general mortality, while the four succeeding days show a steadily increasing mortality, in each instance greater than the average. The end of the week shows a beginning decrease of the mortality, which it is to be hoped no one will undertake to explain by showing that better results follow delayed interference. After the first week we encounter the class of cases that merge from the acute into the subacute variety of symptoms.

The statistician working to prove that the mortality is in reverse ratio to the duration, would prefer that the mortality rate of the first and second days could be reversed; but on sober reflection the proportion can only appear natural, for these cases occurring on the first day are those in which the symptoms and their underlying condition may be properly called hyperacute. The writer found the same ratio of mortality some years ago when studying the fatality of appendicitis, when it appeared that the mortality rate of operation performed the first day was greater than that of operations performed on several days following. To the clinician of larger experience such conditions are well known and appreciated at their true value.

TABLE V.—Mortality According to Condition of the Intussusception.

	Number of Cases.	Died.	Mortality, Per Cent.
Reducible	97	58	59
Irreducible	31	16	51
Gangrenous	11	8	72
Irreducible or gangrenous	29	15	51
Total	149	79	53

As showing the acuteness of the process, it may be mentioned that in the nine fatal cases occurring on the first day, two died with symptoms of recurrence; one

died on the first day in collapse (eight months old); two died on the first day, autopsy showing general peritonitis; one died from intestinal paralysis; one on the first day with beginning sloughing of the gut and general peritonitis.

The mortality, according as the condition was found to be reducible or otherwise, is in direct proportion to the duration of symptoms. Of ninety-nine reducible cases thirty-eight died, mortality of thirty-eight per cent., while in the remaining fifty cases, in which reduction could not be performed, the mortality was eighty-two per cent., or more than double. As Table IV. shows how the proportion of non-reducible cases rose steadily after the first day, it requires no further demonstration that an early intervention is necessary for reduction and cure of the intussusception by virtue of its being reducible.

TABLE VI.—Mortality According to Procedure Employed.

	Number of Cases.	Died.	Mortality, Per Cent.
Reduction	99	38	38
Artificial anus	22	19	86.4
Resection	24	19	79.1
Various	4	3	

The mortality, according to procedures employed, is virtually only a check on the accuracy of the last-mentioned conditions, showing necessarily the same mortality for reduction—eighty-six per cent. for artificial anus, and seventy-nine per cent. for resection, or for both procedures eighty-two per cent. The significance of these figures will be further considered in another part of the paper. Under the heading "Various" are included three operations that were either abandoned or hopelessly incomplete, and one entero-anastomosis (cure).

TABLE VII.—Mortality According to Anatomatical Variety.

Variety.	Died.	Cured.	Mortality, Per Cent.
Enteric	20	11	64
Ileo-cæcal	45	22	33
Ileocolic	1	5	20
Colon	12	12	50

As regards the mortality according to the location, Table VII. shows that the ileo-colic variety heads the list with a mortality of seventy-two per cent., while the colon has the lowest—fifty per cent. These deductions, however, the writer believes to have only a relative value, as they are drawn from only one hundred and fifty cases out of two hundred and thirty-nine, and because doubts must in many instances arise as to the correctness of the classification, owing to the incomplete or loosely recorded details. The ileo-colic and enteric varieties have always been regarded as particularly

TABLE VIII.—Mortality According to Age.

Age.	Died.	Cured.	Mortality, Per Cent.
Three months or under	14	3	82
Six " "	31	17	64
Twelve " "	17	11	58
Five years or under	13	5	72
Ten " "	6	10	37
Fifteen " "	11	5	68
Adults	38	23	62

Under 1 year, 65 per cent. mortality
" 15 years, 61 " "
Adults, 62 " "

fatal, and it is rather remarkable that the latter does not show even a greater mortality. An explanation may perhaps be found in the considerable number of recent cases recorded, for in this class, when reduction cannot be effected, the improvement in the technique of reunion of the intestine after resection should prove of the greatest practical value, as in former times an artificial anus was the only resource, and this procedure, as we have seen, is necessarily attended by the highest mortality.

The mortality, according to the age, is of great importance. The observations are based on two hundred and eleven cases, their relative proportions being indicated in the accompanying table. The latter shows so remarkable a distribution of the mortality that doubts might well be raised against the value of such statistics, were they not derived from such a large number of cases. Dividing the age into three classes —infants (one year or under), children (fifteen years or under), and adults—we find only four per cent. difference between the highest and the lowest death rate. (It must be borne in mind that the mortality is represented by the sum total of the two tables and not by the one hundred and forty-nine cases since 1887). The writer believes that these figures have a value in calling attention to the fact that the mortality in intussusception is due not so much to the tender age of the majority of the patients but to the condition; also that this latter circumstance should prevent us from being sceptical of the possibility of improving our results, and lead us to discard the prevalent belief that we are dealing mainly with a class of patients whose age alone necessarily precludes a favorable result. While the tables certainly emphasize the terrible mortality in very early life, the improvement of eighteen per cent. in the second quarter of the first year is certainly gratifying and believed in all fairness to be sufficiently pronounced to justify such a conclusion.

TABLE IX.—Mortality According to Sex.

	Died.	Cured.	Mortality, Per Cent.
Male	53	24	67
Female	36	13	73

Mortality According to Sex.—For reasons which are in general sufficiently accepted and fairly constant, the female sex is supposed to show a larger proportion of recoveries after operations in general. The favoring elements generally ascribed as influencing the lesser female mortality would not seem to apply here, where the larger proportion of the cases was in children.

The mortality according to the method of relief employed will be more appropriately discussed under treatment.

It may be timely here to contrast the mortality of intussusception with that of intestinal obstruction in general. The writer has collected nearly six hundred cases of acute intestinal obstruction from causes other than intussusception, occurring within the same period of time (1888–1896) as the table of one hundred and forty-nine cases here recorded. They have been chosen with the same care relative to the exclusion of cases due to new growths, etc., and more rigidly as regards duration, none being included in which the time is not definitely stated, whereas, for the sake of completeness in these tables, a few cases, believed from their histories to be acute, have been included. In addition to the usual etiological causes of intra-abdominal obstruction, these cases include a large number of operations for gangrenous hernia, and yet the mortality in these cases, giving rise to a very large number of complicated and extensive operations, is only 42.01 per cent., while intussusception under the same conditions shows a mortality of fifty-three per cent. May not these figures, contrasted with each other, be taken to show that either we are dealing with a more serious

form of intestinal obstruction or that our methods of dealing with intussusception need improvement? The writer is strongly impressed with the reality of the latter possibility. The age alone of the subjects should not give so wide a variance Moreover, a reducible intussusception certainly appears to offer for speedy and simple operation conditions that do not exist in the majority of cases of intestinal obstruction. The intussusception, however, is not always reducible, hence the difference. Our figures show that the mortality of the reducible intussusception is inferior to that of other forms of obstruction, as thirty-eight is to forty-two. Therefore, if we aim to reduce the mortality of intussusception to the level of or below that of the general figures of intestinal obstruction, we must operate while reduction is possible. To accomplish the latter purpose we must operate at the earliest possible moment, and that means refraining from wasting precious time in attempts at reduction by inflation per rectum, except in a very limited class of cases, and such an attempt to be made only with the determination to resort to abdominal section immediately, if such inflation does not at once accomplish its purpose.

Treatment by Inflation of the Bowel by Enemata of Fluids (or Air).—It is probably not an exaggeration to say that if all cases of intussusception were treated at the onset, or say within forty-eight hours, by abdominal section, without any previous attempts at reduction, the mortality, while still considerable, would in all probability be very much less than the present figures. The writer is far from believing that mechanical distention should be altogether discarded, but would very much limit its application.

The vital argument against treatment by enemata of fluids or air is that such a procedure, should it not entirely succeed, delays operative measures. Also that it is uncertain, in that it may give rise to the deceptive impression that the invagination has been entirely reduced, while an unreduced intussusception, no matter how small, is still an obstruction of undiminished danger. A glance at the general tables will show how many instances occurred of deceptive successes following inflation, before resort was finally had to abdominal section. The records of such cases show that recognition of the success of the reduction must be very difficult from physical signs alone. To allow the patient to recover from the anæsthetic and to wait for symptoms is contrary to the indications of treatment of intestinal obstruction, which should consist in immediate and certain action.

Enemata are distinctly dangerous. The literature of intussusception in general is full of reports of cases of perforation or rupture of the intestines by the various agents used to reduce the invagination. Moreover these accidents are not invariably the result of what is unmistakably too great force or pressure. A striking instance of rupture from a hydrostatic pressure of only four and one-half feet is Case 126, Table II., reported by Harrington, that of a child five years old. The ileum was found perforated as the direct result of a fluid enema administered on the fifth day. Another typical example of perforation is reported by Mr. Fenwick,[82] where an intussusception in a six-months old child was apparently successfully reduced on the second day by an enema. Death occurring almost immediately afterward, the autopsy showed ulceration and perforation of the gut, which had not been reduced. This case shows plainly that the danger of perforation is not limited to interference in those cases that have lasted for a considerable period of time.

Another disadvantage of reduction by enemata is to be found in the tendency of the intussusception to recur; a number of such instances are to be found in the tables. Case 48, Table II., is an interesting example: the invagination was twice reduced and recurred twice before abdominal section was performed. While it may be rightly advanced that such recurrences are sometimes seen after abdominal section, they are undoubtedly rarer. Moreover, abdominal section permits of the employment of prophylactic measures against such recurrences, many surgeons having recently recognized the necessity of "anchoring" a newly reduced bowel, and in all probability such a procedure will become the rule when its necessity becomes more generally recognized.

Under what conditions then, if any, shall we make a trial of high injections before resorting to abdominal section? It seems to the writer that to attempt to reply to this question dogmatically would be a confession of inability to appreciate the complexity of the circumstances under which intussusception may be encountered. His feeling is that a single attempt (in a manner to be described elsewhere) may be made in the first twenty-four hours. If the condition is one of very great intensity of symptoms, it will perhaps be wisest to refrain from making such an attempt, for the reason that even on the first day reduction alone will not always be a sufficiently effective treatment of existing pathological conditions. A study of the analysis of the mortality of the first day (see above) will show that in at least three of the cases further procedures were called for. The case of beginning sloughing of the colon found at the autopsy is a sufficient proof of this contention.

In the second twenty-four hours, while a certain proportion of cases will in all probability yield to mechanical treatment, its usefulness becomes still more restricted, as exampled by the twenty-eight cases occurring on the second day (Table IV.), when in four instances other procedures than reduction were found necessary.

After the second day the writer believes that the possibility of relief is so small and the probability of doing harm so great that a preliminary trial of the enemata should be omitted, unless there are some specially good reasons for yielding to the temptation of resorting to them; for the tables show that after the third day, even after the abdomen was opened, a non-reducible condition was found in proportions varying from fifty-seven to eighty per cent.

A small percentage of cases, which may be called the subacute variety, may in the later days, say in the second week, offer conditions which might justify a preliminary trial of distention. These are the cases whose symptoms are a pretty accurate reflection of the lack of severity of the general or local condition, showing neither shock nor sepsis. Such cases, however, would from their excellent condition in all probability do well if subjected to the more radical and certain operation of abdominal section, if performed under favorable circumstances.

The pressure which can be used with safety has been shown to be limited. The same restriction applies to the amount. Mr. Pick[81] would limit the amount in a child under one year to a pint and a half, and the pressure to three feet. Parker cites a case in which an injection of one pint in a three-months-old child caused perforation, the autopsy showing a small rent in the lower part of the intussusception. It may be said that such fatalities are rare, and that in many instances larger amounts and greater pressure have been successfully employed and are usually necessary for success. The writer would reply that what has happened can, and in all probability will, occur again: likewise that dead-house experiments on non-morbid intestinal tissues are so little in relation to the conditions one meets in actual practice that their possible value cannot be discussed here.

The writer would therefore recommend that in those

cases in which he has tried to show the justifiability of a preliminary trial of inflation the attempt should be made as a stage preparatory to immediate opening of the abdomen, if the inflation does not at once overcome the obstruction. All preparations for operation having been made, the patient should be anæsthetized and the outlines of the intussusception carefully studied. A rectal tube should be passed, care being taken that it does not double up on itself. The injected fluid (preferably warm to avoid shock) should then be allowed to run in by gravity, the pressure being gradually raised. It is probably best to have the patient's pelvis well elevated. The operator should meanwhile keep accurate track by the sense of touch of the resulting distention and its influence, if any, on the intussusception. His perceptions of these results should guide his judgment as to the necessary pressure, rather than actual amount, but he must remember that after attaining a hydrostatic pressure of four feet, and even less with infants, he is treading on dangerous ground. Still, even here the conditions pertaining to the individual case must be his chief guide.

If, as a result of the enema, the operator can absolutely recognize by the sense of touch that the intussusception has entirely disappeared, the operation may

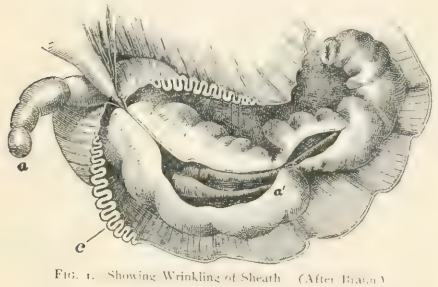

FIG. 1.—Showing Wrinkling of Sheath. (After Braun.)

be *postponed*. The latter term is used advisedly, for the operator should take the attitude that, while he is certain that he has so far been successful, the conditions are likely to recur within the next few hours or days, and all preparations must be kept in readiness. Should the intussusception recur after successful reduction, the writer believes that the abdomen should then be opened at once, lest by further delay the "golden moment" be allowed to pass.

(Braun[92] has called attention to a frequent source of mistaken belief in the sucessful performance of reduction, in that the wrinkling and stretching of the sheath (Fig. 1) allows of extensive variations in the length of the intussusception; for instance, one may have the impression that the intussusception extends only three or four centimetres into the sheath, while direct examination will show that the portion of the sheath involved measures twenty-five centimetres).

The writer declines to discuss means of inflation other than by the force of liquids acting under gravity. Such procedures, while attractive by reason of their ingenuity, are dangerous and less suited to the purposes of accurate observation of results.

Can a comparison be drawn between the relative value of treatment by enemata alone, by enemata prior to laparotomy, and by immediate laparotomy without recourse to preliminary measures? It would seem to the writer as impossible to obtain fair deductions from such a comparison as in any other class of diseases which present varying conditions, calling in some instances for medical, *i.e.*, bloodless procedures, in others for surgical or operative relief. No clinician of wide experience would to-day attempt to show such a contrast between surgical and non-surgical cases of diphtheria, cholelithiasis, appendicitis, etc. Our aim should be to obtain the greatest diminution of mortality, and it would seem preferable to expose one's self to the reproach of having done a needless operation than to that of having sacrificed a life from non-intervention. Therefore it would seem preferable to yield to an excessive desire for certainty, as illustrated by Case 61*a* (Table II.), in which the surgeon, not feeling absolutely certain that the attempt at mechanical reduction had been perfectly successful, performed abdominal section only to find that the intussusception was already reduced.

Treatment by Abdominal Section.—The writer hopes to be pardoned if he takes the liberty of giving a few hints as to the preparations for operations not conducted in an institution. A sufficient number of assistants should be obtained, if such are available, and the duties of each one clearly defined. The house need not be turned topsy-turvy, nor carpets, drapery, curtains, etc., removed except for direct economy. In fact, it is better not to do anything to stir up a dust in the room where the operation is to be performed. The best-lighted room should be chosen, provided it can be well heated if the weather be cool. Sheets, towels, etc., can be properly sterilized by boiling half an hour. It is well to remember that in an emergency even five minutes' boiling gives a tolerably high degree of sterilization. Among other methods of sterilizing the patient's skin is the simple one of scrubbing with green soap and washing off in ninety-five per-cent. alcohol. For the hands * a simple and very effectual method is scrubbing with hot water and soap, rinsing off, and then rubbing the hands and arms with a paste made by taking in the palm of the hand a teaspoonful of washing-soda, adding a crystal of chloride of lime about half the size of the terminal phalanx of the little finger, and adding a few drops of water. Rubbing this mass produces a paste, which becomes smoother with the prolongation of the rubbing. The nascent chlorine thus given off has been proven one of the most powerful germicidal agents in its action on the skin yet discovered. Some boiled water should be used to wash off the paste after three or five minutes' use. The instruments should be boiled for half an hour; a teaspoonful of washing-soda added to the water increases the efficacy of the sterilizing process and keeps the metallic instruments from rusting. Once properly rendered aseptic, neither the hands nor the instruments should be contaminated by touching anything that has not been similarly disinfected. The failure to observe the latter rule is to-day probably responsible for the greater part of the fatal results from sepsis, which has not yet been eliminated as a source of death as a sequel to operation.

Every preparation requisite for the possible performance of intestinal resection and anastomosis should be in readiness, all intestinal sutures properly prepared and at once available if needed.

Choice of Anæsthetic.—The writer could wish that the recorded cases might have furnished some details regarding the choice of the anæsthetic employed, but only few records could be found. Even in the United States, where ether is generally given the preference, chloroform is very largely used to anæsthetize children, and will probably be found the best agent when operating for intussusception in children. The writer believes that not sufficient attention has been given to the temporary stimulant effect following substitution of ether for chloroform, after the latter has been given some time. Usually such a change is made if the chloroform narcosis is not satisfactory, but the writer would urge a trial of a routine mixed anæsthesia, the first half under chloroform, the second under ether.

* [illegible] details [illegible] by R. J. Wel[illegible] on this subject.

Operation.—The incision should be in the median line, and from the onset should be generous, and extended without hesitation if sufficient space is not obtained for ready and speedy handling of the intestines. If no point of definite location of the invagination is known, and the first comprehensive sweep of the fingers over the abdomen reveals nothing, the ileo-cæcal valve should be sought for, and the intestines systematically examined from that point in either direction. If the cæcum is collapsed we know then that our search must be directed upward in the small intestine. The intussusception having been located, it should be examined by direct inspection of its whole extent. The first glance may show that reduction is impossible or unwise. Attempts at reduction are best made in the direction of working away the sheath from the invagination rather than pulling the latter out, such a procedure often causing extensive tears of the gut at some adherent point. To guard against extravasation of fæces, the rest of the intestines and the abdominal cavity should be protected by large gauze pads. If the intestine has been successfully reduced, a close examination should be made of it to determine if any portion is so injured as to impair its vitality. If there is a little doubt as to its integrity, one may employ Hahn's method of surrounding that portion by a gauze packing, over which the sutures of the abdominal wall may be provisionally tied. By such a precaution the general peritoneal cavity is shut off from absorption of septic material from possible sloughing of the intestinal walls, and if perforation takes place it does so under the conditions of an extraperitoneal lesion. Twenty-four hours' observation under such conditions will usually suffice to determine the ultimate fate of the intestine, whether it can safely be returned into the belly or whether further procedures are indicated. The writer was a witness of this treatment in the case reported by Curtis, Case 69, Table II., and can add his testimony to the efficacy of the procedure. While the gut was so isolated, the patient had a free movement of the bowels, showing that the skilful disposition of the gauze, while accomplishing its purpose, had formed no impediment to the free passage of intestinal contents.

Lindemann's case (No. 37, Table II.) is another example of the wisdom of this procedure.

If the intestine cannot be safely or effectively reduced, what shall be our attitude?

The first point to decide is whether the irreducible intussusception is free from septic conditions or sloughing. Great care, experience, and judgment are required to be able to answer this question in the affirmative.

An acute intussusception that cannot be reduced is in all probability rarely solely an irreducible condition—that is to say, it is usually accompanied by lesions of a septic nature, which endanger life both by septic infection *per se*, and secondarily by permitting extravasation of the fæcal contents. If the conditions are such that doubt exists, the wisest course is to treat the intussusception as of the gangrenous variety, for which, as will be shown later, only one broad line of conduct is permissible.

Having determined then that we have to deal with a purely irreducible condition, we have the choice of the following methods:

1. Artificial anus.
2. Entero-anastomosis.
3. Partial resection.
4. Typical resection.

(1) A purely irreducible intussusception presents the only condition in which a primary artificial anus (as a sole measure—see below, combination of resection and artificial anus) is ever permissible. Even here its use must necessarily be limited. In all forms of intussusception not exclusively limited to the large intestine (and such cases are infrequent) the artificial anus is necessarily made in the small intestine. Except for the lower portion of the ileum, an artificial anus in the small intestine is incompatible with the preservation of life except for a very brief period of time. Even in the lower ileum nutrition is seriously impaired and much suffering results from the excoriating character of the fluid intestinal contents. The procedure should therefore be reserved for those cases whose general condition is so desperate that any further procedures must necessarily be followed by death. For the large intestine the indications are much more favorable, and in some cases will constitute the most judicious form of treatment. A decision to limit one's self to an artificial anus, even under these circumstances, must be undertaken with the full appreciation of the after-history of these cases. In these tables only three cures after artificial anus are recorded, and all three required more or less extensive operations to effect such a cure. Among the fatal cases are included three in which life was prolonged for a variable period of time, but these patients succumbing after resection, etc., of the fistula, they are properly classed among the fatal cases. That is, in six cases of artificial anus, in which subsequent operations were found advisable or necessary, the mortality was fifty per cent., and these facts should be given due consideration by the operator before his decision to make an artificial anus is reached.

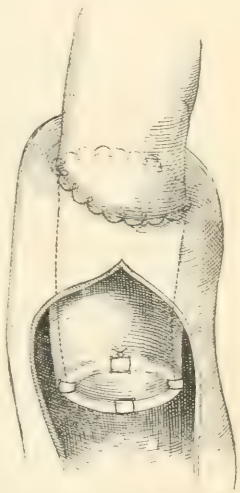

Fig. 2.—Sheath Opened and Invagination Resected. (After Rydygier.)

(2) Entero-anastomosis. By this term we mean the formation of an anastomotic communication between the segments of the gut above and below the intussusception, thus side-tracking the affected portion. This operation may compete with the next two to be described, but not with artificial anus, the latter being reserved for the desperate cases.

Entero-anastomosis may be performed by means of sutures alone, an operation requiring for its proper and speedy performance considerable technical skill, but constituting more nearly the ideal of intestinal anastomosis, or by means of some mechanical device. The Murphy button will here give a very speedy and simple means of reunion, and should doubtless be preferred when time is a very important element. It is to be borne in mind that anastomosis by any mechanical device that must eventually perform the rôle of an intestinal foreign body is not an ideal method.

(3) Partial or atypical resection, or resection of the intussusception through an incision in the sheath.

Various procedures, differing chiefly in minor or technical details, have been described, and to them several operators' names have been appended (Jesset, Barker, Rydygier).

The following may be described as the essential steps of the operation (Fig. 2): Circular running suture securely uniting the invaginated gut to the sheath at the neck; longitudinal incision of the sheath; cross section of the invaginated portion; sutures of

varying nature and extent of the proximal cut edge, especially of the mesenteric portion for the arrest of hemorrhage; extraction of the (now) free portion of the resected intestine either through the longitudinal incision, or, if long and accessible, by the rectum from below; suture of the incision; closure of the abdomen.

For the successful performance of this operation, absence of firm adhesions within the sheath is desirable. The operation under favoring conditions is simple, speedy, and sacrifices less intestine than a typical resection, as the sheath is preserved intact. In one of Mr. Barker's[57] cases the whole duration of the operation was only half an hour.

(4) Resection of the entire intussusception. The performance of this operation for irreducible intussusception will probably occur less frequently with the further familiarity with the last described procedure, the latter being a comparatively recent operation. Before it is undertaken, the reasons for preferring it to the last two operations should be established. These may be briefly stated to be: for entero-anastomosis, hesitation at leaving a considerable portion of the gut to "take care of itself," or (rarely) technical difficulties in performing entero-anastomosis; for resection of the invagination, failure to separate firm adhesions; for either procedure, if there is any suspicion relative to the intestine's non-septic condition.

Treatment of Gangrenous Intussusception.—The writer believes that here the conditions requiring relief are so urgent and so clearly defined that there can be little choice in the methods of operating. The patient must be relieved of the obstruction and of the infection attending gangrene. Remedying the first condition without remedying the second is equivalent to doing nothing at all. To make an artificial anus under such conditions is simply an act of mercy intended to mitigate the sufferings attending dissolution. We are face to face with a desperate condition and one doubly sad, in that in many instances the responsibility for this condition is on the shoulders of some one who ought to have known better. To operate in such a manner and so extensively as to meet the requirements of the condition is nearly always certain to be followed by death; not to do so is to abandon the patient to his fate. It may be objected that death is inevitable in most cases from the existing general peritonitis, which of course no amount of exsection of the intestine can deal with. To this objection the writer would say that cases of diffuse purulent peritonitis do sometimes end in recovery. That they are rarities is freely acknowledged, and the writer's scepticism about many alleged cures of general peritonitis is well pronounced, as many such cases are more probably forms of extensive localized peritonitis. Still, if by operating even only one in a hundred lives is saved, shall we not make the attempt? The chances are not so desperate, however, as the question might lead one to judge. The present methods show a gain in saving of life that could not have been conjectured two decades ago. In 1885 that very careful observer, Braun, could find no record of cure by operation of non-reducible intussusception. The records of these one hundred and forty-nine cases here appended, beginning in 1888, show that nine such cases have been cured by the improvements of modern surgery, whose progress is nowhere more marked than in intestinal operations.

While the experience with the antistreptococcus serum is still too limited to allow of more than a hint as to its possible usefulness, and while realizing that any unduly enthusiastic views may lead to delusions which so easily took possession of the profession regarding other possibilities in the line of antibacterial remedies, the writer nevertheless believes that we should not fail to make use of this or any similarly devised principle of treatment that holds out hopes of supplementary aid in so grave a condition as gangrenous intussusception.

As regards operative treatment the writer recommends only:

1. Resection with immediate union of divided intestine; or,

2. Resection with utilization of divided ends for a temporary artificial anus.

(1) It is thus evident that any method that does not provide for removal of the gangrenous area is rejected. The removal should not be niggardly, the healthy area should be encroached upon to a sufficient extent to insure radical cure. The writer has collected numerous instances in which an apparent hesitation to follow the above recommendation has destroyed the chances of what would otherwise have been a good operation. An example of necrosis of the anastomotic edges is shown in No. 110, Table II. Moreover, resection of a large portion adds comparatively little to the time or difficulties of the operation. Astonishingly large amounts have been successfully removed with little or no influence on the general health. Cases 103 and 104, Table II., are instances of the truth of this assertion. Other examples are to be found in the following:

Rocci and Fantino[58]	310 cm.	ileum.
Köberle	205 "	small intestine.
Hinterstossier[59]	186 "	ileum.
Kocher	160 "	small intestine.
Braun	137 "	" "
Schlange	135 "	" "

TABLE X.

Results of Resection.	No. of Cases.	Cured.
End-to-end suture	12	2
Partial resection	3	0
End-to-end anastomosis (Murphy button).	6	3
Lateral anastomosis and method unknown.	3	0
	24	5

Mortality, 79 per cent.

The cases are too few to venture on any significant claims for the advantages of any one method. The proportion of recoveries (fifty per cent.) with the Murphy button is encouraging, and should certainly warrant a further trial of this method. Undoubtedly the time-saving element is its chief advantage, and the operator with limited experience in intestinal work will in all probability often get the best results with this simple device.

A record of Maunsell's method does not appear in these tables, but his simple device can well compete with the Murphy button. It takes the least time of any of the methods by suture alone, and is free from the disadvantages attending the use of any mechanical aid.

The writer is compelled, though somewhat regretfully, to refrain from a further prolongation of this paper by the consideration of the indications for the employment of the several methods of typical resection.

(2) If after the excision of the gangrenous area we feel that the patient's failing strength will not permit further measures, we can bring the ends of the bowel into the wound (or if preferred into a separate wound), as a temporary artificial anus. These ends should be so placed with relation to the external wound and to each other as to permit ultimately of the easiest methods of repair.

Before closure of the abdomen the operator should convince himself that no second intussusception or other form of obstruction exist. Cases 79, 91, and 112, Table II., show the necessity of such precautionary measures.

As rapidity of operation is desirable, the following method of closure of the abdominal wound is given, as this part of the operation is often less in keeping with the desired end than the rest of the operation. Transfix all the layers with a Peaslee needle, entering in the skin on one side (the fascial layer being drawn well forward by the assistant) and passing through the peritoneum. The needle then transfixes the opposite side in reverse order, emerging at the skin. A piece of silkworm gut is threaded in the eye and the needle withdrawn. Should the condition allow the expenditure of more time, the peritoneum may be sutured separately with catgut, and not included in the other sutures. Should the condition be very good, the fascial layer may be united separately to guard against hernia. In aseptic cases, interrupted buried silkworm sutures have given the writer most gratifying results, both immediate and remote.

Shock—After-Treatment.—The writer does not believe that the degree of shock exhibited by children is so intense as usually supposed. We must differentiate between the shock resulting from the condition necessitating operation and that from the operation proper. Children bear serious operations on the osseous system with no more depression than is exhibited by adults, on condition that the amount of hemorrhage is small. While an explanation of the source of shock does not banish the condition as we have to meet it, it emphasizes the importance of prophylaxis—not to let the morbid conditions exist or progress to a condition of shock which *per se* is hopeless.

Much can be done, however, to tide over a condition of shock, and attention to minor details may prove the turning-point in obtaining a successful result after operation. The chief stimulants in their order of importance are heat, alcohol, and drugs. Loss of heat at any stage must be zealously guarded against, and in the operation contact with moist cloths, irrigating fluids, etc., avoided, owing to the cooling effects of evaporation. In very pronounced shock alcohol should be given hypodermatically, as the state of the circulation will probably allow but little absorption by the rectum. Of drugs, strychnine hypodermatically is probably the most efficient. Camphor dissolved in olive oil is a most valuable subcutaneous agent. Stimulation by drugs requires the exercise of great judgment and accurate observation of their action. The writer feels quite sure that a not insignificant proportion of operative cases terminate fatally from the injudicious administration of dangerous stimulants.

The injection of warm saline solutions into the circulation, either directly into a vein or subcutaneously, is no longer limited to the treatment of shock dependent on hemorrhage. While never having had occasion to resort to it in children, the writer would urge that a trial of this procedure be made in combating the shock in operations for intussusception in children. It should not be used as a last resort, nor should its accomplishment interfere with the operator; to some competent assistant should, if possible, be delegated the sole duty of performing it whenever called for. In the first few hours after recovery from the anæsthetic the pain and restlessness may compel one to give some form of opiate, but in general it is best withheld in order not to confine the bowels. The profession is now very nearly a unit on the advisability of obtaining early and free movements of the bowels after abdominal operations, and the treatment is of especial value if there is any suspicion of peritonitis. Dr. A. J. McCosh,[78] of New York City, is so convinced of the wisdom of the above that he has adopted a radically certain method of obtaining the desired result. Before closing the abdomen he injects an ounce or so of a saturated solution of Epsom salts directly into the intestine, a large antitoxin syringe being used. The puncture is closed with a Lembert suture. On recovering from the anæsthetic the patient is furthermore given ten grains of calomel.

46 West Thirty-Third Street

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HYSTERICAL APHONIA.

By SANGER BROWN, M.D.,

CHICAGO, ILL.,

PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM, POST-GRADUATE MEDICAL SCHOOL; PROFESSOR OF MEDICAL JURISPRUDENCE, RUSH MEDICAL COLLEGE; ATTENDING NEUROLOGIST, ST. ELIZABETH HOSPITAL; ATTENDING NEUROLOGIST, ST. LUKE'S HOSPITAL; MEMBER OF THE NEUROLOGICAL SOCIETY, LONDON, ENG.; NON-RESIDENT FELLOW OF THE NEW YORK ACADEMY OF MEDICINE; FELLOW OF THE CHICAGO ACADEMY OF MEDICINE, ETC.

My apology for calling atention to a mere symptom is that hysteria presents such an endless variety of symptoms that one can hardly attempt to take them all together within the compass of one short paper. I invite attention to hysterical aphonia because, while it is not one of the most frequent symptoms of hysteria, it is one of the most conspicuous when present, and though in a large majority of the cases no very great difficulty is met with in attempting to diagnose it, yet there are cases which have baffled the general practitioner successfully for a number of years. I hope I may be excused if I briefly discuss this symptom somewhat as I would do if it were regarded as a disease, because I am accustomed to discuss medical topics in somewhat of a stereotyped way.

Hysterical aphonia has been pretty clearly recognized and described for a century at least; its etiological conditions are practically the same, of course, as are those of the disease of which it is a symptom, namely, hysteria.

In quite an extensive search of the literature of the subject, the youngest case that I have encountered was one occurring in a girl of nine, while the age of the oldest was that of a woman of seventy-four years.

In regard to the symptomatology and etiology, at least two fairly distinct types are found; first may be considered that type in which aphonia is merely an accompaniment of many other pronounced stigmata of hysteria, such as hysterical pains, hemianæsthesia, vomiting, etc., occurring either with or without any apparent exciting cause. In such cases it frequently happens that the aphonia is not entirely pure; that is, for hours together, when the other symptoms are most complained of, the patient may be unable to raise the voice above a whisper, but in the intervals may be able faintly to phonate now and then a word or syllable. The second or pure form of aphonia, however, is that in which this symptom occurs suddenly with or without an exciting cause, continues for a longer or shorter time, and constitutes the sole evidence of hysteria.

In the impure type the aphonia may be among the first symptoms to appear, or it may show itself only after other symptoms have been present for weeks or even months. It may commence as a transient hoarseness, worse when the other symptoms are worse, or as hoarseness associated with an ordinary cold; finally, complete or almost complete aphonia supervenes, which may last from several days to several weeks or even months.

In the pure type, as already stated, the aphonia usually develops suddenly, with or without exciting cause. For instance, the patient comes down to breakfast in his usual health and spirits, and finds, much to his surprise, that he cannot raise his voice above a whisper, or very rarely he may be entirely mute; or the symptom may develop suddenly as the result of a severe emotional shock. The influence of an emotional shock will vary directly with the susceptibility of the individual's nervous system at the time of receiving the shock. This point is of the utmost importance in estimating the influence of emotion in producing disturbance of any function of the nervous system.

Many of these cases recover spontaneously and even suddenly after a few weeks or months, with or without treatment; others remain uninfluenced by treatment, the symptom persisting steadily for years. To be sure there are many mixed cases.

A great many methods have been enthusiastically put forward as successful in the treatment, more especially of the pure types above referred to, but in the last few years it has been pretty clearly demonstrated that they owed their success entirely to the influence of the suggestion with which they were accompanied; and in my opinion any method depends for its success upon the facility which it affords the patient for concentrating his efforts upon an attempt to phonate. Hypnotism has been successful in a number of instances, but not more so than the various forms of electricity, more particularly faradism, applied to the larynx, sometimes by a peculiarly shaped electrode applied internally, and at other times simply applied externally

A method advocated by Oliver a few years ago attracted considerable attention and became known as his method, and has given excellent results. His plan was to pinch the posterior part of the arytenoid cartilages between the thumb and index finger, and thus produce an approximation of the vocal cords, at the same time vigorously shaking the larynx and calling upon the patient to make an attempt to phonate, assuring him positively of his ability to do so. At first only vowel sounds were attempted, and gradually the pressure and shaking were diminished, until the patient was able to phonate without assistance. In case any particular sound was not satisfactorily produced, the pressure and shaking were reapplied.

A third very ingenious and successful method consists in first getting the patient to cough, which in nearly every case can be accomplished; having done this, then have him cough and at the same time pronounce the different vowel sounds, and thus convince him of his ability to phonate. It is probable that in all pure cases any of these methods, if applied with suitable suggestion on the part of the operator, would be successful; but in the cases in which the aphonia is associated with other marked symptoms of hysteria, it is doubtful if complete and lasting success will be attained until the other symptoms have in a great measure subsided, and to this end it is often necessary to improve the patient's general health.

I will now describe some cases which fairly well illustrate the different types which I have alluded to above.

As representing the first type, I will quote the case of a policeman, aged forty, of good habits, robust physique; his family and personal history are good, and he could not fairly be regarded as a man of nervous temperament. Though he received some quite severe flesh wounds in the Haymarket riot, in the main his duties have not been severe, neither have his personal or family relations been of such a nature as to cause him much anxiety. About three weeks before admission to the hospital, while travelling his beat, he felt a peculiar sensation, something like numbness but difficult to describe to his satisfaction, commence in the radial side of the hand, extend to the thumb and index finger, and thence at times shoot up the shoulder. He continued his work until about five days prior to ad-

mission, when he suffered frequent paroxysms of severe pains in the left side and chest, accompanied by nausea and vomiting. During these attacks he could not speak above a whisper, and during the intervals he was very hoarse. Finally, when admitted he was pretty constantly and completely aphonic, though occasionally a syllable would be faintly phonated. Movement of the legs was normal, knee jerks were very lively indeed, and there was severe general jerk of the body when the patellar tendon was tapped; vision and the visual fields were normal, but there was complete absence of pain reaction to pin pricks and pinching over the entire left half of the body, including the tongue, gums, and inner surface of the cheeks, while sensation in the right half of the body was normal. Positively assured that a strong current of faradism would restore his voice and relieve his pain and vomiting, after the first application he phonated clearly and was for the time entirely relieved of the pains in the chest and nausea. After a few daily applications he said he felt entirely well, with the exception that occasionally he had slight pain through the chest and still a little numbness in the radial side of the hand. He returned to the hospital several times for treatment after resuming his duties, but in the course of two or three weeks from his admission he had entirely recovered. This, then, was a case of an impure hysterical aphonia occurring in connection with other well-marked symptoms of hysteria, without any apparent exciting cause.

The next case is that of a woman, thirty-one years of age, the wife of a professional man. She has had one healthy child, has correct habits, a good family history, and had always enjoyed excellent health up to two years ago, when a railway train upon which she was a passenger ran into a culvert while going at a high rate of speed, and was stopped so suddenly that all the seats were torn loose and bunched in the forward end of the car. The patient was quite severely bruised on the posterior aspect of the left hip and thigh, and received several slighter bruises on various parts of her person. No one was killed, or in fact more severely injured than herself, so the mental shock was only such as was incident to the sudden confusion and temporary anxiety for the welfare of her child, who was with her but sustained no injury. Almost immediately after getting out of the car she felt weak and dizzy, and vomited. The accident occurred at about 1 P.M., and a few hours later she again boarded a train without assistance and rode several hours till she reached her destination. She had in the mean time suffered intense and increasing pain in the legs, and had been able to walk only by putting forth a great effort. She slept several hours after a full dose of morphine, but when she awoke the pain in her legs was as severe as ever; she felt greatly prostrated, was unable to stand both on account of pain and weakness in the legs, and was unable to speak above a whisper. She continued in this condition for two weeks, when she was seized with severe hysterical convulsions lasting several hours, with unconsciousness and opisthotonos. It was six months before she could walk without support, and about six weeks before she spoke above a whisper. Her recovery from aphonia was not then sudden and complete; at first only a word or syllable was phonated, the remainder of her speech being whispered; then she gradually improved so that her voice only sank to a partial or complete whisper when she was tired. She had suffered many attacks of complete or partial aphonia, always associated with pain and weakness in the legs, and lasting from a few days to a few weeks, between the date of the accident and my examination several months ago. At that time she had been suffering several days from an exacerbation of symptoms like those already described, which she thought had been brought on by overwork and taking cold. For several weeks previous to this exacerbation she had been better than at any other time since the accident, was comparatively free from pain, could walk alone in the street, and her voice was comparatively clear and strong.

When examined she was in bed, complaining of pain in the legs, back, and head; of vertigo and nausea on movement, and inability to walk. She conversed entirely in whispers at first, but later, when her interest became aroused, now and then a word or two were phonated weakly and hoarsely. She said she felt no pain, and showed no signs of feeling any when pricked with a pin ever so deeply or pinched in any part of her body. The field of vision for white was reduced to the fixation point. The knee jerks were very lively, and when the tendon was tapped the whole body responded with a violent jerk. The body was well formed and well nourished, loss of appetite and nausea notwithstanding. In bed the arms and legs could be moved voluntarily in any direction, though she declared she was entirely unable to walk, both on account of pain and weakness. I saw this patient only once and then in consultation, and cannot say anything regarding the results of treatment, but it illustrates a type in which an impure form of aphonia is associated with very marked symptoms of hysteria developed by an exciting cause.

The next case may be regarded as illustrating the most common type of pure hysterical aphonia, not associated with any other hysterical stigmata. Miss A. A——, aged twenty-nine, attendant in hospital for insane; nervous temperament, very competent, good general health. She had been employed several months in convalescent ward, and was not under a strain of any kind, when on rising one morning after sleeping well and feeling in her usual health, she found she could only whisper. She declined treatment and the attack lasted five weeks without mitigation, when it suddenly and permanently disappeared, the patient having attended to her work as usual in the mean time and remained in her good general health. She had previously suffered two similar attacks at intervals of several years, from which she had recovered spontaneously, and for which she could assign no cause.

The next case is that of a young man, aged twenty, farmer's son, intelligent, industrious, of correct habits, fond of company, and not notably nervous. His family history is good, and he has always enjoyed excellent health, rarely having even a cold. When he was eleven years of age his father called him as usual one morning to rise, but for some reason he went to sleep again, so that his father called him a second time, speaking somewhat sharply. From that moment until he entered my office, nine years later, according to his own testimony and that of his family and numerous friends and acquaintances, he had never uttered a sound of any kind; in fact, had been absolutely mute. His playmates, when he was still a child, would throw him down and tickle him, trying to make him laugh; his face on such occasions would undergo the usual contortions, but no sound was emitted. On still more careful inquiry, it appears that occasionally a very slight sound had been emitted when he was in the act of clearing his throat, but so far as I could learn he had never been heard to cough so that he could be heard more than a few feet distant, and some members of the family in which he had lived for years were positive that they never heard him utter a sound of any kind; his communications were all made by writing. His hearing was quite acute. Movement, the reflexes, the visual fields, vision, and sensation were all entirely normal.

I had a laryngoscopic examination made by my distinguished colleague, Prof. E. Fletcher Ingals, who

succeeded in getting a satisfactory view of the vocal cords only after the use of cocaine; they were found to be normal in every respect, and in making the manipulations necessary to secure a satisfactory examination the patient coughed slightly. After thoroughly arousing his interest and attention by a rather minute and spirited dissertation upon the mechanism of speech (which of course he could not comprehend, but which convinced him none the less of my great skill), I assured him, with as much dramatic force as I was able to assume, that I could cure him entirely by the use of electricity, and very speedily too. I then proceeded to apply a strong faradic current to the larynx, only for a few moments, by placing a disc-shaped electrode, about one and one-half inches in diameter, on each side of the organ, assuring him beforehand that after I had done this he could phonate the vowel sounds, and that as these were the basis of articulate speech, it would be necessary for him to learn to phonate them first in regaining his ability to speak. Immediately after this procedure he was able to phonate the vowel sound "e" after me; to be sure it was very weak, nevertheless distinct; whereupon I terminated the *séance*, assuring him that the victory had been won. After this I gave him a daily treatment, and the progress was very rapid. He was soon convinced that if he said "e" he could say "eat," and if he said "o" he could say "go," and so on; in less than a week he could carry on ordinary conversation in rather a low tone of voice. He was then assured that in the course of a week more his voice would gradually strengthen until it would finally be as strong as that of the ordinary individual, and this he found to be the case. This was six months ago, and he has continued well ever since.

This case deserves some comment on account of the youth and sex, perhaps, of the individual in whom it occurred, but more particularly on account of nine years' duration of unbroken mutism. He had seen a great many practitioners, none of whom, so far as I can learn, had made a correct diagnosis, probably because it was so difficult to get a satisfactory view of the vocal cords, and after the case had lasted two or three years without interruption a practitioner might naturally assume that it was not one of hysterical aphonia; but really, with the history of the onset that I was able to get, the excellent state of general health ever since, and especially when the vocal cords were found to be entirely normal, there was no difficulty in making the diagnosis.

A somewhat careful examination of the literature has not enabled me to find a case that was anything nearly parallel to this in point of degree or duration. I found several cases of hysterical mutism which had lasted for several weeks, and one—that of a young woman of twenty—which had begun as simple aphonia and continued as such for several months, when it lapsed into a condition of mutism likewise lasting several months, and which finally recovered by suggestive treatment. In my opinion the efficacy of the treatment in my case was due entirely to suggestion.

The pathology of the disorder is, of course, the same as that of the other manifestations of hysteria. It is hypothetical, but most pathologists are substantially agreed upon the hypothesis, which is this: The parts of the cerebral cortex which normally preside over the various disordered functions become inactive, to the extent that they no longer respond to the behests of the will as before; accordingly in aphonia the cortical centres from which in health the motor impulse proceeds to the muscles concerned in phonation are no longer excited to activity by the volition of the patient.

Within the last year or two Lepine and Duval—each claims priority by several months—have elaborated a hypothesis to the effect that neurons, when in a state of functional activity or potentiality, are expanded so as to be in physiological contact with such other neurons as properly participate in any particular function. During rational sleep or hysterical paralysis they are contracted, and physiological contact is broken. This theory assumes that the neurons, which are in fact protoplasmic cells, undergo amœboid movements, and experiments have been made upon frogs which appear to demonstrate the possibility of such movements on the part of neurons.

The effect of suggestion in the treatment of hysteria according to this theory might be rationally accounted for by assuming that it enabled the patient to exert an extraordinary amount of will power, resulting in the necessary expansion and contact of the neurons concerned.

A W[illegible]

Progress of Medical Science.

Skiagraphing the Arteries. — At a recent meeting of the Pathological Society of Manchester, Dr. Raw explained to the society a method he had adopted for skiagraphing the arteries. He said that, when trying to examine a fracture which was enveloped in a thin layer of plaster of Paris, he found it quite opaque to *x*-rays. The idea then occurred to him that the vessels (arteries) might be reproduced in the skiagraph by injecting them with a somewhat similar substance. Accordingly, when the next opportunity occurred, he injected post mortem a solution of calcium sulphate and carmine into the femoral artery and then took skiagraphs of different parts of the body. He illustrated his remarks by exhibiting several pictures showing the arteries perfectly, even to the most minute anastomoses. In fact, so opaque was the substance that the arteries actually showed through the bones. Dr. Raw also exhibited a twenty-four by eighteen inch bromide print of a child, showing all the arteries of the body injected.

Recovery from a Large Dose of Silver Nitrate. —At a recent meeting of the Leeds and West Riding Medico-Chirurgical Society, Drury (*Lancet*, May 15, 1897) related that while pencilling the throat with a stick of silver nitrate in the course of an attack of tonsillitis, the stick became detached and slipped into the œsophagus. There were localized pain in the gastric region and a strong conviction that death must soon follow. Immediately a frothy foam welled up in large quantities, forcing its way through the mouth and nostrils, staining handkerchiefs and the bed linen. There was an irresistible feeling that the pencil was lying impacted in the gullet. Upon the urgent request of the patient a probang was passed. Mustard was given in large quantities and vomiting induced. Some time afterward common salt was given. Careful search in the vomited matter failed to disclose the presence of any of the pencil that might have remained undissolved. Collapse and great exhaustion followed. For some days a milk diet was rigidly observed. All food, especially if sweetened, had a salty taste. There was no further vomiting, but constipation was pronounced. The temperature became subnormal and the earlier symptoms disappeared. During the following two weeks there was well-marked desquamation over the whole of the skin. In the subsequent twelve months there were many indications of dyspepsia, but some of these had been present in a milder degree previously. The pencil was composed of four per cent. of potassium nitrate and the remainder silver nitrate. There was little fluid or food present in the stomach at the time of the accident.

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PTOMAIN POISONING.

THE recent wholesale poisoning from the eating of ham sandwiches at a picnic in Wappinger's Falls calls attention to a source of danger in similar gatherings which should not be lightly considered. Although it is currently reported that the cause of the trouble was the creation of soluble salts of copper, due to the use of an unclean copper vessel in which the ham had been cooked, it is nevertheless quite evident that ptomain poisoning was at the bottom of the trouble. It may sound strangely to such as have not given the subject serious attention to say that copper utensils are not specially dangerous for culinary purposes, but such we believe to be the fact. For ages this particular metal has been used without markedly detrimental results, and many authorities have gone so far as to maintain that as yet no well-authenticated cases of copper poisoning have been recorded. "It is a curious fact," says Professor Brouardel, of Paris, in his interesting and instructive book on "Death and Sudden Death,"[1] "that this idea of poisoning by copper owes its origin to Jean Jacques Rousseau. You know how fashionable his ideas were for a certain period; you know the infatuation they created. It is not very wonderful, therefore, that the opinions he professed on the injuriousness of copper should have gained acceptance. Nevertheless, it has not been forgotten that the ancients did their cooking in copper vessels. The tinning of copper saucepans was only introduced, into the west of Europe at any rate, by the gypsies, who were the first to line the interior of copper vessels with tin more or less pure. Lastly, at all times and even to-day, certain culinary preparations are made only in untinned pans. Such is the case with preserves, which have never poisoned anybody yet, and yet which are capable—for example, when preserves of currants are made—of producing soluble salts of copper. We know now that copper utensils are quite harmless, so long as they are kept in good order." From these facts we are led to infer that the alleged cause of the food poisoning in the Wappinger's Falls outing was in all probability founded more on popular belief than on scientific fact.

On the other hand, cases of ptomain poisoning from tainted food ingredients are very common. The numerous instances of severe prostration, vomiting, and high temperature after partaking of picnic ice cream are instances of this sort. It is much easier to understand that the ham, either before or after it had been cooked, might have become partially decomposed during the preparation into sandwiches, than that the copper kettle should have been the leading factor in producing the results. Then, again, it is not positively stated that all the meat was cooked in the same vessel; neither, so far as can be learned, was the presence of copper salts demonstrated in the food product or in the vomited materials of the patients.

It is well known that under certain conditions of high temperature, increased humidity, and disturbed electrical tension albuminoid foods are apt to take on rapid chemical changes, resulting in the production of numerous well-demonstrated cadaveric alkaloids. It is not necessary that disagreeable odors should be evolved in all cases to verify the existence of such changes, neither is the presence of the latter always manifested by the sense of taste. Another fact of great importance is the transitory and volatile character of different ptomains during different stages of decomposition. The same meat which may poison one day may be relatively harmless the next. A very interesting verification of this fact is given by the same author, Brouardel: "Two pork butchers (in Lille) had purchased a pig, but whereas the customers of one all fell ill after eating sausages made of the flesh of one-half of the carcass, the customers of the other remained absolutely free from anything of the sort. It could not, therefore, be the previous condition of the pig that was to blame; the shop, the stall, and the workshop of the butcher were clean and in good order. It was necessary to search farther. The pig had been killed on a Friday, a day on which pork-butchers' shops are closed in Lille. The meat had been exposed for sale on Saturday, May 19th, and Sunday, May 20th, and none of the buyers suffered at all. Those, however, who bought sausages on Monday and Tuesday (May 21st and 22d) were all taken ill, and four of them died. The law interfered and the sausage meat was withdrawn from sale on the Wednesday. On that day and the day following, the pork butcher, not wishing to lose his goods, fed himself and his household on the remains of the pork, and no mishap followed." Certainly these are significant facts as bearing on the probable cause of poisoning in Wappinger's Falls.

[1] "Death and Sudden Death," by P. Brouardel. New York, Wm. Wood & Co., 1897.

CYCLING FROM THE STANDPOINT OF HEALTH.

ANOTHER note of warning has been sounded in regard to the possible evils of cycling. Under the somewhat ambiguous title of "The Hidden Dangers of Cycling," an alarmist article recently appeared in the *National Review*, pointing out some of the risks of injury to health to which bicyclists are liable, and darkly hinting at others likely to be incurred. The chief novelty of the article lies, however, in its suggestion as to cause. The author, Dr. Shadwell, has written

on the subject at various times, so that his views carry a certain amount of weight. To him also belongs the distinction of originating the term "bicycle face," which has been so generally adopted to express the anxious, strained look many bicyclists wear. The hidden dangers of the exercise, in the opinion of Dr. Shadwell, threaten women, and more particularly young women, and the prediction is made that in the course of a year or two quite a different story will be heard concerning the health-giving properties of cycling. Dr. Shadwell says: "Sufficient time has not elapsed since it became a general practice to bring the disadvantages to light—to the light, that is to say, of public recognition. Medical men have been kept studiously in the dark on the subject. They always are in like cases. The successes are blazoned forth, the failures concealed. So with bicycling. The fortunate persons who have derived benefit as well as pleasure from it volubly recount their experiences to the largest audience they can command, and the chorus of praise waxes louder by reiteration. Those who have suffered conceal the fact as far as possible, and especially from the doctor, for fear of being forbidden their beloved 'bikes.' That is noticeably the habit of young women, who are the chief sufferers."

A few cases of serious breakdown that came under the author's notice are cited, one of a girl who developed exophthalmic goitre as the result of a long ride, and which became chronic. Appendicitis and internal inflammation are also laid to the charge of the wheel. But the complaints to which the writer in the *National Review* chiefly wishes to draw attention are the various forms of ill-defined nervous effects resulting from even a moderate use of the bicycle. The contention is made that the harmfulness of the exercise does not consist so much in excess as in the strain on the nervous system. The proposition is laid down that overexertion is quite inadequate to explain the effects from which many cyclists suffer. The symptoms are essentially nervous, and point to a cerebral and not a muscular origin. The theory brought forward as to the cause is not the saddle, the vibration, or mechanical defects of the machine, but its instability and the constant strain required to keep it in an upright position. Dr. Shadwell holds that this incessant tension is that which tells upon the nerves.

The arguments introduced in this article are not sufficiently definite, however, to be of use in drawing any conclusions. Taking into consideration the immense number of persons who nowadays ride a wheel, it would be remarkable if among the number there were not some whom cycling did not suit and some to whom it was decidedly harmful. Unless statistics can be given clearly showing that to a fair proportion of riders the exercise is pernicious, a vague statement of hidden dangers will deter but few. That the nervous system is affected by the exercise is perfectly true, but here again the question of constitution and temperament comes in. Some can ride and experience no nerve trouble, some suffer slightly, while there are others to whom continued riding means a complete shattering of the nervous system. The anticycling idiosyncrasy does exist, but those with whom it is present must be aware of it, and if wise will use corresponding caution. The question of harm resulting from nervous tension has been greatly exaggerated; cases of complete or even partial breakdown from this cause are comparatively rare, probably fewer than in the old cycling days. In bicycles as they are made now, with better saddle springs and the pneumatic tire, vibration has been reduced to a minimum and the tremulousness that used to exist after riding one of the earlier machines has practically ceased to occur. It should not be forgotten that the effect of bicycle exercise on health has already been very fairly tested as regards men. In England cycling has been in vogue for twenty-five years; ten years ago there were thousands of riders in that country, and if the consequences had been as disastrous as its opponents endeavor to prove they must be, the truth would have been brought to light ere this.

Various theories have been advanced to account for cycling affecting the nervous system in the way it does, but none of these explanations is quite satisfactory. That it lies wholly in the action of balancing is certainly not the case. Naturally with an unpractised rider the effort to keep in an upright position will produce considerable nerve tension; on the other hand, to the expert balancing has become as automatic an action as walking or running, and the strain will be infinitesimal. Riding in crowded streets, on a rough road, down a steep hill, or under any circumstances when the senses of sight, touch, and hearing must be continually on the alert, would seem more likely to have a harmful effect than the act of keeping the equilibrium to one who is a master of the machine. Cycling with women has not yet received the test it has undergone with men, but the time has been long enough to prove that on the whole the exercise is decidedly good for them, and the bogy of hidden dangers need spread no alarm among their ranks. A woman organically sound can, under proper conditions and using ordinary precautions, cycle with as little dread of bad results as a man, and so long as she keeps strictly within the limits of her endurance, for pleasure and health and not for emulation, will certainly benefit. Long rides and century runs can do no good and probably may do harm. Hill climbing should be avoided as much as possible, as it puts too great a stress on the large abdominal muscles, and a woman, with her physiological peculiarities, should not submit herself to an undue strain. In the case of anæmic girls cycling usually acts like a charm. The general tonic effect of an outdoor life and the change of thought and scene have an invigorating action on the entire system, and all the organs of the body participate in this beneficial result.

The fact that there are dangers connected with cycling cannot be denied; these, however, are not hidden ones, but are more or less palpable to every observer. It may be said that there is danger in teaching the practice to the quite young. Properly cycling should not be carried on to any extent while the body is undergoing development. Any valvular disease should be an absolute bar to cycling, as the heart is the organ principally exercised. Acute inflammation

of the genital organs should forbid the use of the machine to women, although the exercise is often beneficial in chronic cases of uterine disease. The question finally resolves itself into one of moderation or excess, and the personal equation in this respect is variable. A healthy man may be able to do one hundred or one hundred and fifty miles without exerting himself, while another to all appearances equally healthy should not do more than forty or fifty. Cyclists are too apt to be carried away by the spirit of emulation, and when they do so with riders of a superior capacity they must expect to suffer. Each cyclist should be a judge of his or her own capacity.

THE DOCTORS PUZZLED.

No headlines to a column in the daily newspapers describing a rare disease, a complicated operation, a girl with scleroderma, or a boy with hiccough, is complete without the large-type announcement that the doctors were perplexed and all at sea. This must delight the reader or the reporter would not put it in. He knows nine times out of ten that the physicians understood the case perfectly, and that there was nothing very puzzling about it. Indeed it almost always happens that in the interview with the chief physician, which comes at the end of the story, it is shown that he has frequently seen such cases and knows all about them. Now it is not pleasant for a physician to read every day in his morning journal that his colleagues are being "puzzled" over something or other. It is a reflection which he mentally resents. Lawyers and ministers don't get puzzled. At least the papers never say they do. It is clearly the duty of the physician interviewed, in the interest of the profession at large, to make it a *sine qua non* that if his views are published there shall be no caption indicating that he himself or any others connected with the case were puzzled.

A CRAZY WORLD.

If the crazy Diogenes were alive to-day, he might well light his lantern and set out in quest, not of an honest man, but of a sane one; and if we may believe all who venture to pronounce upon the subject, his search would be a laborious one indeed. We all know, of course, for the masters have told us, that most great geniuses are insane; and the great geniuses, if questioned, would not hesitate to tell us that the inappreciative vulgar herd is mentally incapable of comprehending their sublime flights. Nordau has proven beyond question, to himself at least, that nearly every one of any rank in letters or art is a degenerate, and the degenerates have answered with a *tu quoque* argument which is entirely satisfactory to themselves. The antivivisectionists have asserted that those who experiment upon animals are really sexual perverts, and a writer in one of our contemporaries has retorted that these intemperate opponents of scientific progress are downright insane. The learned, we dare not say sane, editor of another of our contemporaries has ventured the opinion that a writer in the MEDICAL RECORD is mentally unsound because he mildly criticised the action of the Society for the Diversion of Public Funds to Private Uses. The German Emperor has been called insane because he pinches the legs of his guests or trips them up with his sword. The Sultan is insane because he has a harem and seems to favor the killing of his Armenian subjects, and Gladstone is in his dotage because he thinks the so-called Christian powers of Europe ought not to approve of such diversions. Bryan is insane because he wants a silver standard, and the majority of the voting population in the country is insane because it doesn't want it. And we are acquainted personally and by reputation with a great many people who do not think as we do, and are necessarily insane for that reason. We are getting discouraged, for what can we, the only mentally sound in this vast bedlam of degenerates and maniacs, do to prove to these lunatics that we *are* the only sane!

News of the Week.

Obituary Notes. — REV. J. B. MACOOL, M.D., of Elizabeth, Pa., died on July 3d, of congestion of the brain. He was a graduate of the Western Pennsylvania Medical College.—DR. WILLIAM C. WEY, of Elmira, N. Y., died at his home in that city on June 30th, at the age of sixty-eight years. He was a graduate of the Albany Medical College in the class of 1849.

"The New Orleans Medical and Surgical Journal" announces in a few modest words the completion of the first half-century of its existence. The journal was established in 1844, but, as its publication was suspended during the civil war, it only now celebrates its semicentennial. We congratulate our esteemed contemporary, and wish it many more jubilees.

A Scientific Explanation of a Lamentable Occurrence.—Probably the change of climate from the seashore to the more relaxing and debilitating atmospheric conditions at Poughkeepsie had much, though not all, to do with the collapse of the Harvard crew in the late university boat race. An exposure of three weeks to such a change is either too long or not long enough.—*The Boston Medical and Surgical Journal.*

The New Jersey State Board of Medical Examiners.—Drs. G. F. Wilbur, of Asbury Park; A. K. Baldwin, of Newark; and Edwin De Baun, of Passaic, have been reappointed members of the State board of medical examiners of New Jersey for a term of three years. At the annual meeting of the board the following officers were elected for the ensuing year: *President*, Dr. G. F. Wilbur, of Asbury Park; *Secretary*, Dr. E. L. B. Godfrey, of Camden; and *Treasurer*, Dr. A. Ubelacker, of Morristown.

Street Cleaning in Rochester.—The Pathological Society of Rochester, N. Y., has taken action on the condition of the streets in that city. It urges the paving of streets with brick, stone, or asphalt, laid over cement or concrete foundation. In the matter of

cleaning it has adopted a resolution that the method of cleaning by constant manual sweeping and gathering of accumulated dirt and refuse in bags is the most sanitary, and that the use of sweeping machines which raise a cloud of dust should be discontinued. It urgently requests the city officials to inforce the ordinances against the littering of streets with ashes, garbage, etc.

The Wisconsin State Medical Board.—Governor Scofield, of Wisconsin, has appointed the following seven physicians to compose the new State medical board created by act of the legislature last winter: Drs. Walbridge, of Milwaukee; Bell, of Beloit; Ourrens, of Two Rivers; Dale, of Oshkosh; Forsbeck, of Milwaukee; Ludwig, of Richland Centre; and Quigg, of Tomah.

The Southern Empire State Medical Association of Georgia.—The fourth annual meeting of this flourishing association of colored physicians and surgeons was held in Macon on July 1st and 2d. The following officers were elected for the ensuing year: *President*, Dr. E. E. Green, Macon, Ga.; *First Vice-President*, Dr. A. L. Falkner, Macon; *Second Vice-President*, Dr. R. E. Grier, Albany; *Treasurer*, Dr. J. R. Porter, Atlanta; *Secretary*, Dr. H. R. Butler, Atlanta; *Board of Censors*, Drs. C. McCarthy, Macon, A. H. Harris, Athens, and J. T. Shuften, Macon; *Executive Committee*, Drs. G. S. Burrus, Augusta, W. A. J. Mosley, Thomasville, W. H. Harris, Athens, S. P. Loyd, Savannah, and H. R. Butler, Atlanta, chairman. The meeting in 1898 will be held at Americus.

Laryngological Section of the Moscow Congress.—Dr. J. W. Gleitsmann writes that at a special meeting of the Oto-Rhino-Laryngological Society of Moscow, held on the 21st day of June, 1897, it was decided that a bureau should be instituted for the convenience of members of the twelfth section of the Twelfth International Medical Congress (otological and rhino-laryngological section). The object of this bureau will be to give all information needed, not only as to matters concerning the congress, but as to all other matters where our visitors may require assistance or information. This reference bureau will be open from 7 to 9 P.M., from the 13th to the 19th of August, in the Doctors' Club (Bolshaya Dmitroffka), and during the meetings in the room of the twelfth section (*b*, laryngo-rhinology).

The Medical-Charity Abuse in Iowa.—Drs. E. F. Clapp and C. M. Hobby, of Iowa City, have issued a circular relative to an appropriation by the board of regents of the University of the State of Iowa, of nearly $150,000, for the construction and equipment of a hospital, the use and control of which is to be restricted to members of the faculty of the medical department of the State University. It is said also that any persons will be received for treatment in the hospital provided they pay their board and reasonable fees to the physician or surgeon in charge. "Thus," the circular reads, "the State, in behalf of a few individuals connected with the faculty of the medical department of the university, enters into competition with every general practitioner and every hospital and sanatorium in the State; also offering to furnish a set of operating-rooms and all special appliances to the members of the staff without expense to them, thereby giving them great advantages in competition with the large body of the medical profession who have no such extraneous aid." The writers ask for legislative enactment forbidding the admission of any patient who is able to pay for his or her treatment at home or in a private institution; and also providing that no member of the hospital staff shall receive any compensation for his services or receive any pay or gratuity from any patient admitted to the hospital.

The American Association of Obstetricians and Gynæcologists will hold its tenth annual meeting at Niagara Falls, Tuesday, Wednesday, Thursday, and Friday, August 17, 18, 19, and 20, 1897, under the presidency of Dr. James F. W. Ross, of Toronto. The scientific work of the association will begin on Tuesday morning at ten o'clock, and end Friday at one o'clock, and it is expected so to arrange the programme as to afford the members opportunity to visit the places of interest each day on the adjournment of the afternoon session. The secretary of the association is Dr. William Warren Potter, of Buffalo.

A Lost Opportunity.—The jubilee exercises proper on the third day might have been worse and there was abundant room to have made them better. The occasion afforded ample opportunity for hero worshippers to display their enthusiasm, and otherwise it was a restful break in the routine. Dr. N. S. Davis read his address in good voice and the subject matter was an interesting bit of history. The opportunity was here afforded to invite the president of the Medical Society of the State of New York to participate in the proceedings, at least by his personal presence; but it was lost, more's the pity. To ignore completely a great medical society, that was founded in 1806 and was the first organized body to give direction to medical education in the United States, in which also the American Medical Association had its birth and after which its form of government was modelled, was in our view an error, if not a misfortune. These jubilee exercises were distinct and apart from the ordinary work of the association, and during their conduct it would have been a graceful act for Dr. Davis to have welcomed the president of that society, nor would it have diminished the renown that is so justly accorded to the "father of the association" had he displayed a magnanimity that was worthy his exalted position and the occasion.—*Buffalo Medical Journal.*

The Statue of Charcot, by the sculptor Falguière, is nearly finished, and will soon be erected at the Salpêtrière.

Government Doctoring.—From Queensland comes a proposition that the principle of lodge practice be widened out so as to be made a State institution. The *Medical Press* says that the president of the local branch of the British Medical Association has made the startling suggestion that the medical care of the

people should be part of a public-health department, and it is said that a large proportion of the members of the branch was charmed with the idea. He proposes that the whole country be divided into districts, with a senior and two junior medical officers to each, together with relieving officers and inspectors. Every person is to be taxed two dollars per annum to pay for his or her doctoring. This is a distinct improvement on the dollar-a-month dispensaries and fifty-cent hospitals. It also solves the dispensary-abuse problem, by extending the benefits of pauperism to the entire community without any property qualification whatever. We regret we are unable to publish the name of the president of the Queensland branch of the British Medical Association. He is a genius.

The Passing of the Parrot.—If the parrot in his tropic home could say what he thinks, he would thank his stars for psittacosis, that form of bronchopneumonia from which his captive brethren suffer in European cages. In Genoa fourteen persons, of whom eight have died, recently contracted the disease from two parrots brought from Brazil. The alarm has spread over the continent, and the parrot is in much less request than formerly.

The Pedic Society of New York, composed of the registered chiropodists of the State, held its annual meeting in this city on July 10th. The society has one hundred and seventy-one members.

An Incredible Accusation and its Refutation.—One of the most unfortunate, uncalled-for, and disgusting spectacles which men sometimes make of themselves occurred recently in St. Louis, at the close of a three-days' session of an auspicious medical society. A so-called "smoker," one of the social features of the occasion, which had been widely advertised and to which men of prominence had been invited, degenerated from a pleasant social gathering to a most disgusting, vulgar, and vile exchange of lewd jokes and foul, reeking stories, at which even the untaught, unpractised, barbarous men of the time of Molière would blush.—*The Medical Fortnightly.*

A medical journal which claims to be a St. Louis publication, but which is printed and mailed at St. Joseph, Mo., and edited at Jacksonville, Ill., criticises the "smoker" given the Tri-State Medical Society at its recent meeting in St. Louis—probably because the leaders in the entertainment were Drs. James Moores Ball and Emory Lanphear, each generally understood to be *persona non grata* to the Jacksonville editor. The gentleman wrote the criticism upon "general principles," quite evidently, for he was not present, and none of the frightful things pictured by his heated imagination actually occurred. — *American Journal of Surgery and Gynecology.*

High Potencies Come High. — An American was taken down with pneumonia last winter in a Paris hotel, and was attended by the hotel physician. The doctor was a homœopathist and treated his patient on strictly homœopathic principles, but did not furnish the remedies. These were obtained on his prescription from a neighboring pharmacy, and the bill for those consumed in the few days of the victim's illness came to $150.

The Medical Inspectors of Schools. — The first quarterly report since the appointment of medical inspectors of schools in this city has just been made by Dr. Blauvelt, the chief medical inspector. The report includes a table showing the different kinds of diseases for which children were excluded from the schools. Parasitic diseases of the head appear to have been the most prevalent, 2,627 cases having been discovered among the children examined. Contagious diseases of the eye come next on the list, over 700 cases being reported. Skin diseases claimed 175 victims, and diphtheria 91. Measles was responsible for the exclusion from school of 51 children, and 20 cases of genuine scarlet fever were discovered. Croup was of comparatively rare occurrence, but 26 scholars were compelled to forego school attendance for a short time on account of whooping-cough. The report gives the number suffering from mumps as 117, and from chicken-pox as 93.

International Association of Railway Surgeons.—At the session in Chicago of the National Association of Railway Surgeons, out of compliment to the membership in Canada and Mexico, the name of the society was changed to the International Association of Railway Surgeons. The next meeting will be held in Toronto, in May, 1898.

Beds for Sick Americans in London.—As a memorial of the Queen's diamond jubilee the Americans residing in England have endowed a bed in perpetuity in each of the five leading London hospitals, each bed being endowed with the sum of £1,000. The beds will be especially for the use of Americans, but other patients may be received if all the Americans are well.

Mississippi Valley Medical Association.—The next meeting of this association will be held in Louisville, on October 5, 6, 7, and 8, 1897. The railroads will offer reduced rates. The president is Dr. Thomas Hunt Stucky, and the chairman of the committee of arrangements Dr. H. Horace Grant. Titles of papers should be sent to the secretary, Dr. H. W. Loeb, 3559 Olive Street, St. Louis.

Pathological Society of Philadelphia.—A stated meeting of the Pathological Society of Philadelphia was held on June 24th, Dr. Charles W. Burr occupying the chair. Dr. John M. Swan exhibited an aneurism of the aorta at the junction of the ascending with the transverse portion of the arch, together with an enormously enlarged heart. Dr. William G. Spiller exhibited microscopic preparations of giant cells of the cerebral cortex. Dr. C. W. Burr exhibited a subcortical neoplasm of the precentral lobe of the left cerebral hemisphere. During life there had been evidence of suppurative inflammation of the middle ear of the same side, and the nervous phenomena were attributed to abscess of the brain. The mastoid cells were trephined and pus was afforded exit, but no improvement in the nervous phenomena followed.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

SECTION ON ANATOMY AND SURGERY.

First Day—Tuesday, June 1st.

President's Address.—The chairman, DR. R. H. SAYRE, of New York, in his opening address, recommended that papers be fewer in number and well prepared, in order to allow more thorough discussion, which was of great importance. It was not always easy to discuss a paper on the spur of the moment. He thanked the section very heartily for the honor conferred upon him in calling him to act as its presiding officer.

Ligation of the Carotid.—"(*a*) Ligation of the Common Carotid Artery for Trifacial Neuralgia, with Experiments and Observations on Dogs. (*b*) Specimens and Charts of the Arterial and Nervous Systems Illustrating the Paper." DR. B. MERRILL RICKETTS, of Cincinnati, Ohio, read a paper with this title, in which he stated that only experimental work had been done, and that as yet but few conclusions could be drawn. The anatomy of a dog was thought to be different from that of a human being, but he did not concur in that opinion. Sir Astley Cooper ligated the vertebral and common carotid arteries in a dog, but the object of the operation was not known. In 1866 Ehrman ligated the common carotid for trifacial neuralgia. The operation had also been done by Gross in 1883, Hutchinson in 1885, and Horsley in 1887. The cases operated upon had not been reported in detail. The speaker wished to mention a case operated upon one year ago. The patient was ninety-six years of age, and since the operation he had been entirely free from pain. The question arose as to the reason for this relief. It was supposed that changes took place in the Gasserian ganglion, but the microscope proved that such was not the case. The experiments extended over three months; twelve dogs were chosen, their common carotids were ligated, and the dogs were killed at different times afterward. From these experiments he concluded that pain results from one of two conditions: first, anæmia; and second, congestion. He referred to the pain of local meningitis. In case of congestion, ligation of the common carotids will relieve the pressure and blood tension. Specimens were shown of the brains of dogs killed on different days; the injection material used was composed of starch, carbolic acid, and aniline.

DR. J. B. MURPHY, of Chicago, asked what percentage of cases of ligation showed degenerative changes in the hemispheres; he also inquired of the author what his theory was as to the pathology of trifacial neuralgia.

DR. RICKETTS, in closing the discussion, said that there were no changes in the hemispheres, so far as he was able to discover. Congestion seemed to be a prominent factor, as also did anæmia. The speaker then referred briefly to Rose's and Langenbeck's operations for the cure of trifacial neuralgia.

The Nerve Element in Surgical Pathology.—DR. J. MCFADDEN GASTON, of Atlanta, Ga., read a paper with the above title. He said that the interlacing of the nerves with the different structures of the body gives energy to every vital organ in health, and aggravates their disorder in disease.

Neuralgia in all its protean forms is not a mere functional derangement of the nerve centres, but depends in most cases upon local modifications resulting from inflammatory action in the neurilemma or parenchymatous structure of the affected nerve. It may also exist in a spurious form connected with compression upon the trunk, or from cicatricial adhesions after operations. The impression that contraction of the nerves gives rise to painful development has led to nerve stretching, but little advantage has attended this procedure, thus showing that nerve shortening is not pathognomonic.

Rheumatic complications involving various regions of the body are dependent upon the nerve supply to the part, and the acute sensibility of such structures renders anodynes of the greatest importance in the treatment of such disorders. Inflammatory processes are accompanied by pain from the entrance of sensory branches of the nerves into the organs, and the means adopted for the relief of inflammation must include the control of the neurotic disturbances by combating pain. It is fair to infer that all agencies for the mitigation of pain have a curative effect upon the structures involved in disease.

The reciprocal influence of body and mind in the progress of most physical disorders depends upon their connection through the nervous system.

Our deficient knowledge of the etiological factor involved in shock inclines the speaker to the view that a continuous baleful influence is propagated to the nerve centres from the disintegration of the structure involved, and that this may be modified by amputation with a clean incision through sound tissues above the point of injury, soon after such violence to the parts. The injury inflicted upon the superficial cutaneous nerve fibrils is extended to the internal organs by the correlation of nerves and capillaries with the viscera. The notable effects observed from cups, sinapisms, and blisters upon the skin are due to the sympathies established through this channel of the nerves. The eruption of teeth in children is attended by neurotic disturbances of a marked character. The various manifestations of the intimate relations of the nerves with the different structures of the body open the way for comprehending the rôle of the nerve element in surgical pathology.

The development of traumatic neuritis is the most common complication of surgical cases, and there is rarely any extensive lesion which is not accompanied by more or less pain, dependent upon inflammation of the nerve or its neurilemma. The irritation of the peripheral branch of a nerve may set up a train of disorders terminating in tetanus or lymphangitis, and the serious consequences of these affections are notorious. In the latter condition ganglions as well as lymphatics become involved in the inflammatory process, and suppuration is set up in the course of the lymphatics with the characteristic features of pyæmia.

The subcutaneous use of simple distilled water has been resorted to with apparent effect upon the nervous system, and this proves a delicate response of the nerves to the action of agents introduced hypodermically. The transmission of cutaneous modifications to the internal organs becomes in numerous instances simply the expression or delivery of a dynamic influence which operates through the nerves. Instead of local irritation there is a general influence upon the organism corresponding to the special property of the agent employed, and we must attribute the effect to the conduction of medicinal powers from the point of introduction through the various channels of communication with the dependent structures.

The chief features in the relations of the nervous system to other structures involved in surgery lead to the following deductions:

1st. The cutaneous development of the minute branches of the cerebro-spinal system of nerves, and the ganglionic ramifications of the great sympathetic, are so related to the capillaries as to establish a recip-

rocal action and reaction between them and the great nerve centres.

2d. The vasomotor nerves are so intimately linked with the excito-motor and excito-dynamic system of nerves that impressions made through the superficial afferent nerves are conveyed to all the corporeal structures and tissues, so as to produce their effects upon different organs.

3d. Reflex phenomena depend upon a complex interchange of local pathological conditions with the nervous ramifications to remote parts of the body.

4th. The fountainhead of energy for all the functions lies in the nerve centres, and by controlling emanations from this source the vital forces will be propagated with regularity and uniformity to all the remote parts of the physical organization. On the contrary, a hurtful influence disseminated from the nerve centres entails disease upon the different organs.

5th. The means to be adopted for averting injurious impressions upon the nerve centres, and the measures to be used for the correction of their derangement, make up the whole prophylactic agency of hygiene, and include all the therapeutic appliances in the treatment of diseases, as well as the application of surgical measures.

6th. Close observation of the various modifications of the nerve element on the physical organism should reveal its direct influence in surgical pathology, and lead the surgeon to the adoption of proper means of relief.

Operative Procedure for the Relief of Occlusion of the Jaws.—Dr. J. Ewing Mears, of Philadelphia, read a paper on this subject. With regard to the procedures which have been used, Mr. Heath, of London, in recording a case in which he had operated, made the statement that English text-books contain very little. Drs. Kocher and Valentine Mott both refer to a case of a sloughing cheek which was accompanied by closure of the jaws. The most complete account of this condition is to be found in Gross' "Surgery." This surgeon had opportunity to study cases in the Southern section of this country, where this condition is more often found. He recognizes two forms —the temporary or spasmodic, and the permanent. Among the many causes of the temporary or spasmodic form, the speaker mentioned delayed eruption of the molars, alveolar abscess in connection with the teeth, and tonsillitis. The treatment of this form depends entirely upon the cause. If it is due to a wisdom tooth, the tooth should be extracted. In regard to the permanent form, this is due to cicatricial tissue or to osseous bands which result from the use of mercury. The speaker here showed a cast illustrating the absence of development of the lower jaw. Closure of the jaws may result from inflammation, which is more often rheumatic in character. It may result from blows or concussions, but is most frequently due to an unrecognized fracture involving the neck of the condyle. The diagnosis of these cases may offer great difficulties. A complete history should be obtained. If a deviation of the lower jaw to the affected side exists, it will aid the diagnosis. The prognosis is favorable. In considering the treatment the speaker stated that cicatricial-tissue deposits tax the skill of the surgeon. Different operations for forming false joints have been advocated. The speaker then briefly described his method of treating these cases. A long curved needle, armed with strong silk, is introduced in such a way that the silk encircles the cicatrix. The ligature is then drawn backward and forward day by day, and thus inflammation is set up. The jaws are separated and a gag is placed between the teeth. The use of the gag is kept up until the patient is able to open the jaw without it. The speaker then showed photographs of patients operated upon.

Dr. McLain, of Detroit, said that the subject of jaw closure was very interesting and important, especially because of its rarity. He had had some experience with this trouble. He thought it was difficult to imagine anything more annoying than an ankylosis of the jaw. He referred particularly to the ankylosis following scarlet fever, that being a frequent cause, in his opinion. He related the brief history of the case of a patient who was entirely unable to move the jaw There was absolute ankylosis on both sides. He tried to relieve the condition by what he thought to be an original operation. He dissected off part of the muscles of the jaw at the angle, and resected a V-shaped piece from each side; he kept up passive movements until false joints were formed on both sides.

Dr. Lewis A. Sayre, of New York, hoped that Dr. Mears would speak of the operation first described by Dr. Schmidt, of New York, which consisted in prying open the jaw and constant use of the joint.

The Chairman thought that each case must be dealt with according to its merits. Bony ankylosis must be treated on different lines. He related the case of a patient, six years of age, who had ankylosis of the jaw for several years before his parents noticed any trouble. Treatment consisted in prying apart the jaws by means of a strong wedge, which was covered with lead to engage the teeth.

Improvement of Brain Function by Surgical Interference.—Dr. Ernest Laplace, of Philadelphia, read a paper with this title. Sepsis has practically been eliminated from brain surgery. Relief depends upon ability to remove the transient cause, which is either chemical, psychical, biological, or mechanical. He thought too much importance had been placed upon the purely functional troubles of the brain. In brain surgery the technique must be perfect. We should guard against shock, hemorrhage, and sepsis. Death from shock is due usually to faulty technique. The treatment of this condition should be by strychnine hypodermically, hot-water bottles, head in the dependent position, high enemata of hot water, etc. The most frequent indication for operation is concussion following trauma. The sequelæ dreaded are insanity or epilepsy. If consciousness is lost we must relieve this condition by blood-letting, thus reducing the tension of the parts and also swelling, which may exert pressure. The latter condition Dr. Laplace relieves by transverse craniectomy, beginning the operation in the temporal fossa and going through the thick portion of the skull. One sometimes finds the middle meningeal artery running through the skull and not through a groove. He showed an instrument which he uses to separate the adhesions under the skull, especially over the longitudinal sinus. This instrument is no larger than an ordinary wire, and as it advances does not tear the dura. The knife is then plunged through the surface of the dura; the brain tissue bulges through this opening, but not enough to do harm. Then he proceeds to pack the wound with gauze fresh from the sterilizer. For purposes of packing the speaker said he did not favor iodoform or other gauzes, but only gauze taken directly from the sterilizer after it has been subjected to a heat of 230° to 260° F. He packs this well into the groove he makes, and this gives support to the brain. The strip is left eight days *in situ*, and then removed. In this operation there is no shock or loss of blood, and there is no vibration through the brain. He reported twenty-two cases treated after this method with good results. In acute meningitis this method of drainage has been applied with advantage. Fifteen epileptic patients operated upon gave evidence of improved mental condition, and in no case was the patient worse after operation. In idiocy due to microcephalus—operation at the coronal, sagittal, and frontal sutures, done at three months' intervals—some cases showed marked improvement both physically and men-

tally, and here again no case was worse after operation. The speaker then referred briefly to a class of cases of arrested development of the brain, in which this operation had been performed. In a few cases the mental condition was certainly improved.

Demonstration on the Cadaver of a New Surgical Engine.—Dr. M. H. Cryer, of Philadelphia, read a paper on this subject. He exhibited a modified dental engine, which differs from the ordinary dental engine in that it is much more powerful and can make more revolutions to the minute. He laid particular stress on the fact that the parts are detachable and can be made aseptic, and that the instrument can be used in all bone operations. Another advantage that it possesses is that it will not cut the flesh unless the flesh comes between the bone and the burr. The speaker then demonstrated the use of his new surgical engine on the head of a cadaver.

Dr. Wyman, of Detroit, believed that the ideas of Dr. Laplace were with us to stay. Without drainage the majority of cases terminated in death. All cases were improved by surgical interference. In regard to the apparatus shown, he asked how it worked in the living subject. Bloody fluid, bone dust, etc., choked up the burrs of the saw now in use, and he asked how this new machine stood the test. He had long wished for some such instrument.

Dr. De Velbris, of Toledo, spoke in regard to the removal of the skull bone, as demonstrated by Dr. Cryer. He thought the instrument worked admirably. The great difficulty that he had experienced in instruments that he had used was that he could not cut a circular slit.

Dr. White, of Philadelphia, said that he was not so fortunate in his cases as was Dr. Laplace. He was of the opinion that the mortality of all operations of opening the cranium was considerably above two per cent. He did not believe that the whole brain could be drained through an opening in the dura mater. The temporary effect of an operation should be considered. He reported cases in which operation had been performed for epilepsy. Some cases apparently gave something to guide in operation, but when the part was cut down upon nothing was found. Occasionally the opening of the cranial cavity was followed by the disappearance of the so-called organic disease; it was not understood why this was so. The speaker thought that in insanity following trauma operation was rational and justifiable.

Dr. Lewis A. Sayre, of New York, spoke of the spiral conical trephine. One could not possibly injure the dura mater with this instrument, and he was surprised that this fact had not been mentioned. The speaker related a case in which convulsions and other symptoms led him to believe that an exostosis was pressing upon the brain. An operation was performed, but nothing was found. Since the operation, which was done many years ago, the patient had not had a convulsion and was perfectly well.

Hernia of the Cæcum.—Dr. J. H. Gibbon, of Philadelphia, read a paper with this title. He spoke of acute and chronic partial intestinal-wall herniæ, giving the theory of the manner of their production, symptoms, diagnosis, and treatment. The usual symptoms of acute hernia might be present—inflammation, gangrene, and perforation. Littré's hernia was a hernia of Meckel's diverticulum. The object of the paper was to prove that acute partial intestinal-wall hernia does occur, and also that acute partial enterocele must be differentiated.

Second Day—Wednesday, June 2d.

Two Hundred and Fifty Bassini Operations for the Cure of Hernia, without Mortality.—Dr. W. B. De Garmo, of New York, read a paper with the above title, it being largely one of statistics of his own cases. Two hundred and fifty operations had been done on 216 patients; 34 operations had been done on both sides. There were 164 males and 86 females; 55 were under the age of fourteen years, 43 between the ages of fourteen and twenty-five, and 118 had passed the age of twenty-five years; 8 were between the ages of sixty and seventy, and 2 were over eighty. The youngest patient was five months old and was operated upon for strangulated scrotal hernia; he recovered in ten days. The oldest patients got well apparently as readily as the youngest. There were 93 scrotal hernias, 55 irreducible, and 16 strangulated. The largest hernia was about two feet in circumference, composed of large and small intestines, omentum, and bladder. In 4 cases cysts were found in the canal; in 1 case it was a form of multiple cyst; 207 cases healed by primary union. Suppurative cases started beneath the skin in all cases, and one was from gonorrhœal infection. In only one instance did a recurrence take place in a suppurative case. All double operations were done at the same time. In one case there was a direct inguinal hernia on the left side and a femoral hernia on the right side; both were operated upon at the same time. In regard to suture material, he used none but kangaroo tendon. He had had no deaths. The permanence of cure was a very important thing to consider. He thought that ninety per cent. of permanent cures was too low, and advanced his percentage to ninety-five. One hundred and fifty of his cases had gone over one year without recurrences. He had had only three actual recurrences up to the present time. The real cause of failure was known in every case and was reported by the speaker.

Dr. Marcy, of Boston, in opening the discussion, thought the subject too large to be treated in detail, but wished to speak of one or two points which he considered to be essential. He demonstrated by drawings on the blackboard the causes of hernia. He asked why all were not subjects of hernia; the opening in the abdominal wall was at right angles to the abdominal pressure. He pointed out that anatomical defects caused a large proportion of the cases, such as pathological conditions and lack of closure at an early period of life. In treating these cases, questions arise as to the reconstruction of these parts. The speaker then briefly related a history of his researches and publications on this subject. He had operated upon subjects of three months and upon those past eighty years of age. In making up the mortality list he did not think that strangulated cases should be included in the percentage; ninety per cent. had remained cured. He used no truss after operation. The young should be operated upon as well as the older subjects. All persons in the category of truss-bearing subjects are susceptible of certain cure.

Dr. Ochsner, of Chicago, wished to discuss the age limit. It was apparent to all those who saw many cases of hernia that they did well with a truss until they got an enlarged prostate, when difficulty began. He had done castration and ligature and section of the cord on the side of hernia. As a result urination was made easy and the trouble disappeared. The increased pressure on the hernial ring was diminished. This was a principle worthy of consideration. He had seen several hundred children suffering from hernia, and had found that in many cases these children had a phimosis, and as a consequence strained during urination. Circumcision, followed by placing the patient in bed with feet elevated to an angle of forty-five degrees for four or five or six weeks, would result in a cure. He did not think it justifiable to operate in children under twelve years of age. His experience

had been that practically all children recovered without operation.

Dr. Ricketts, of Cincinnati, asked in reference to dealing with the testicle, if any operator had met with a hydrocele accompanying an undescended testicle.

Dr. De Garmo closed the discussion. He stated that to Marcy, of Boston, and not to Bassini, should the credit of the so-called Bassini method be given; that Marcy was the first to attempt to restore the canal to its normal condition. None of the cases Dr. De Garmo operated upon had enlarged prostate. Phimosis he had studied, and had arrived at the conclusion that few children had phimosis so marked that they strain to force urine through the urethra. Examination of children in Hebrew institutions showed that just as many hernias occurred there as elsewhere. He certainly did not believe in elevating the bed, as advised by Dr. Ochsner, but preferred to operate. In regard to hydrocele occurring with an undescended testicle, he had seen one case, in which the tumor was as large as a hen's egg. In two cases of undescended testicle the cord was so short that he could not bring it down. If the cord was long enough, he believed it was best to bring down the testicle. He looked upon the aponeurosis of the external oblique muscle as tendon, and in his operations for hernia treated it as such. He was perfectly satisfied with kangaroo tendon.

Treatment of Abscess of the Lung.—Dr. Carl Beck, of New York, read a paper with this title. Abscess of the lung is not a rare condition. Its attempted cure should be by purely surgical principles. The diagnosis is much easier than its localization. The absence of tuberculous manifestations and exploratory puncture point to this condition. The principles of treatment consist of thorough evacuation of the pus and drainage. Particular care should be employed in rendering the skin aseptic, twenty-four hours being devoted to this purpose. The speaker then described the operation for entering the pleural cavity. If no adhesions exist the lung may collapse. Palpation of the lung area and the introduction of the needle into the lung may locate the pus focus. The Paquelin cautery thrust into the suspected portion is a useful aid in diagnosis; then one should introduce a director and watch for the pus. After the cavity is exposed, no irrigation is necessary. Iodoform gauze should be packed into the cavity. The speaker advised blowing with the mouth frequently to increase the discharge. After the operation small doses of morphine may be given. At the end of a week strophanthus and caffeine are advised. Anæsthesia should be given only when the patient is able to stand it. Even cocaine has its dangers. His experience was obtained from four cases, all of which terminated in recovery. In only one of these cases was the diagnosis of lung abscess made before operating. The history of this one case was given in detail.

Dr. Manley, of New York, said that purulent formations were often difficult to deal with, and it would seem to him that in empyema it was a difficult matter to determine whether it was due to a transformation of a serous fluid or whether it was an interstitial abscess. He believed that it was impossible to decide whether it would be better to trust to the exploratory needle or to aspiration. He asked Dr. Beck if, in the case of a child, it would not be better to spare the ribs as much as possible.

Dr. Beck said that if pus was present the ribs should usually be resected, and then one could readily find a way to the pus cavity. He advised the employment of the *x*-ray in all cases of resection of the rib.

The Diagnosis of Minor Personal Injuries and their Relation to Accident and Insurance Associations (with Illustrations).—Dr. Liston H. Montgomery, of Chicago, Ill., read a paper on the above subject, in which he called attention to declarations made by policy holders which were followed by unwarranted legal proceedings. He reported several cases showing what basis claimants had for demanding damages. He referred to the decisions of courts in regard to certain injuries and the possible errors of judgment which may occur. He brought up the question of the liabilities of companies in septic infection.

Anchoring the Kidney.—Dr. R. Harvey Reed, of Columbus, Ohio, read a paper on this subject. He stated that hydronephrosis and pyonephrosis are of frequent occurrence, due often to closure of the ureters from a calculus or other obstruction which prevents the flow of urine. Hydronephrosis may exist for from ten to fifteen days without breaking down the substance of the kidney. A kidney absent from its natural position, may be replaced sometimes by taxis, but it is liable to return to its former position. When this does occur we are justified in doing a radical operation. The speaker then showed by diagram the futility of attempting to replace a kidney in its natural position and hold it there by means of a tight bandage. The bandage could not be made tight enough to effect this object without interfering with the circulation; one could get only general and not local pressure by this means. He called attention to the objections made to the radical cure of floating kidney and showed pictures illustrating his method of anchoring. He uses the abdominal incision over the normal position of the kidney. The incision is made just large enough to introduce the fingers into the cavity and push the intestines to one side, so as to give a clear field for observation. A long curved needle with a strong handle, and armed with one thread of silk, kangaroo tendon, or other material, is passed through the upper border of the kidney between the eleventh and twelfth ribs and on through the muscular wall out to the back. The needle is unthreaded and withdrawn. The other end is threaded and introduced at a short distance from the point traversed by the first; the threads are then tied over a piece of gauze in a manner similar to the fastening of a staple stitch. The speaker thought that in going in through the lumbar region one would experience greater difficulty in introducing the needle. This was a radical operation rather than a palliative one. The sutures were left in for from ten to fourteen days. In two instances it was his good fortune to be called upon to operate for ovarian trouble in patients on whom he had once performed this operation. One of these operations was performed at an interval of six months after the first operation, and the other at an interval of one and a half years. In both instances he found the kidney in the normal position, the same as the one on the other side. The speaker thought there were objections to the lumbar incision. One does not always find the kidney where it ought to be and is sometimes compelled to hunt for it. By the abdominal route a greater field for observation is obtained.

The Comparative Merits of Different Operations for Stone in the Bladder.—Dr. J. B. Deaver, of Philadelphia, read a paper with this title, in which he said there are two operations which are quite popular: first, suprapubic lithotomy, and second, litholapaxy. Litholapaxy is applicable in nearly all cases of stone. The most important condition which would interfere with this operation is stricture in the anterior or deep urethra; still, with Otis' urethrotome, this difficulty can be obviated. Stricture of small calibre in the deep urethra is no contraindication for the operation of litholapaxy, but if the deep urethra cannot be restored the operation is then out of the question. If the stone is large, perineal lithot-

omy is the operation. In speaking of enlargement of the prostate gland, the reader of the paper said that no enlightened surgeon of the present day would recommend castration. Cystitis is not a contraindication in litholapaxy; it is essentially present in stone in the bladder. Almost all senile cases improve under litholapaxy, and this operation does not seem to aggravate the condition of senile cystitis. When the stone is large, litholapaxy is difficult, because to crush a large stone one must use a large lithotrite. In these cases it is better to do a suprapubic lithotomy. Experience is the factor which must decide the operation. For success in this operation it is essential that it be done at one sitting. A large stone with an irritable bladder makes litholapaxy inadvisable. If one is not skilful in manipulation, one had better do the cutting operation. Sometimes the stone is so large as to necessitate a cutting operation. In case of an encysted stone one should not perform a litholapaxy. If the pelvis of the kidney is diseased, the gravity of the operation is increased. Litholopaxy is by far the safer operation, as statistics show. Cutting operations must be made whenever indicated. As regards children under thirteen years of age, this operation should not be done on account of the high mortality, and again the urethra is rarely so large as to permit the passage of an instrument; cystitis is frequently set up by the operation. A great advantage of litholapaxy is that the patient can resume work after ten or fifteen days. In operating upon a child one should bear in mind that the first two inches is the smallest portion of the urethra. The speaker advised the use of a lithotrite which does not become clogged; a fenestrated lithotrite is the better instrument. Suprapubic lithotomy is the operation that should be done by those who deal with stone in the bladder but occasionally. For old men, in whom stone is associated usually with enlarged prostate, suprapubic lithotomy is the operation. One should remember that in pelvic deformities, ankylosis of the hip-joint, etc., one may not be able to place the patient in the lithotomy position. The great advantage in the operation of litholapaxy is that it lessens the sojourn in bed, and the sequelæ of cutting operations are not present.

Demonstration of the Technique of the Roentgen Rays with the Practical Application to Surgery, Illustrated by Stereopticon Views.—Drs. De Forrest Willard and A. W. Goodspeed, of Philadelphia, presented a paper on this subject.

Dr. Goodspeed demonstrated to the section the technique of the Roentgen rays.

Dr. De Forrest Willard exhibited upon the screen a number of skiagraphs taken for him by Professor Goodspeed, illustrating the advantages of this process in fractures of the bone, especially those in the neighborhood of the joints, as regards both diagnosis and treatment, the process being especially valuable when the displacement is concealed by excessive swelling. In regard to deformities following fractures and cases of non-union, he warned surgeons against placing too much faith in delineation; it should be employed only as an adjuvant to existing clinical symptoms. Errors are possible, as has been demonstrated by various practical workers. The benefit of the skiagraph in diseases of bones, tuberculous joints, ankylosis, exostosis, etc., is beyond question. In distortion of the bones, knockknees, bowlegs, etc., it is useful. Foreign bodies in the superficial tissues, œsophagus, chest, abdomen, and even pelvis are often easily demonstrable, but the exact location and depth cannot be accurately disclosed except by various processes of angulation, marking, etc. The fluoroscope is very helpful. The wandering habit of needles makes their location a matter of considerable difficulty. Localization of gall stones, stones in the bladder, stones in the kidney, etc., while still somewhat difficult, is a matter that will be easily accomplished as the method and technique of the process advance month by month. Many interesting radiographs were shown by Dr. Willard.

Third Day—Thursday, June 3d.

Some Additional Facts Relating to Skin Grafting, Technique, etc.—Dr. Z. J. Lusk, of Warsaw, N. Y., opened the day's proceedings with a paper on this subject. He referred briefly to his own experiments and writings, and the results he had obtained, relating in detail five cases. He emphasized the fact that great care must be taken in separating the cuticle, and that it should be kept free from moisture. He obtained his cuticle from blisters produced by heat.

Dr. George M. Sternberg, of Washington, D. C., thought it remarkable that a temperature high enough to raise a blister did not destroy the cuticle. He thought that experiments should be made to find at what temperature the cuticle is destroyed. He would advise that some such experiments be instituted.

The Chairman said that he had been surprised to note the resistance of the living tissues to dry hot air. He had used this treatment in chronic arthritis, and exposed joints to a very high degree of heat. Skin will endure from 350° to 400° F., which he had thought hardly possible. Some can stand not more than 180° or 220° F., but many can stand much higher than 400° F. He had noticed that after a few days had elapsed ulcerated spots, etc., sometimes appeared, which ulceration was difficult to heal.

Dr. Manley, of New York, said that Dr. Lusk's plan was not true skin grafting, but was epidermal grafting. He could not recommend this manner of grafting in the class of cases described by Guermonprez, in which he covers in a large surface, as of the whole limb. He thought Thiersch's method a very good one. When extensive destruction had not been done, he thought the reader's plan a very good one, especially when motion was not great.

The Traumatic Fevers.—Dr. E. W. Holmes, of Philadelphia, read a paper on the above subject. He classified traumatic fevers into:

(*a*) Primary fever.

(*b*) Secondary fever: 1, Suppurative fever—acute, chronic; 2, true septicæmia; 3, sapræmia; 4, pyæmia.

(*a*) Primary fever: Primary or aseptic fibrin-ferment fever appears usually within forty-eight hours after a traumatism of any magnitude, being due to the absorption of an aseptic fibrin-ferment substance from the seat of injury. It follows conditions in which the aseptic precautions or unbroken skin preclude infection, and is due to the absorption of pyretogenic substances formed from the products of the aseptic microbiosis.

(*b*) Secondary fever: Secondary fever, which comes on after the fifth day, is due to the absorption of pathogenic germs, either the pyogenic, the saprophytic, or their products. Under secondary fever he considered:

1. Suppurative fever, which may be acute or chronic.

Acute suppurative fever follows infection with the products of pyogenic micro-organisms, and is manifested by chill, fever, and sweat, usually coincident with the formation of pus. These symptoms usually disappear when the pus is thoroughly evacuated and the cavity drained. Acute suppurative fever is believed to be due to the products of the pus and not to the actual presence of the pus organisms themselves: (1) because the actual presence of the pus germs has not been demonstrated in the blood; (2) because the symptoms disappear so quickly after thorough cleansing and drainage.

The chronic form of suppurative fever, with characteristic rhythmic temperature chart, "up at night and down in the morning," with flush of cheek and wasting of flesh, is called hectic.

2. Septicæmia (true septicæmia, septic infection) is due to the absorption of the saprophytic germs or micro-organisms of putrefaction, with their actual presence in the blood in enormous quantities. The symptoms are an initial chill (one only), a continued fever, rapid pulse and respiration, coma, sordes on the lips, a dry cracked tongue, mental hebetude, muttering delirium, with enlargement of the spleen and of the superficial lymph glands. The wound, if upon the surface, will often appear gangrenous and emit a foul odor. Treatment consists in rigid local asepsis and the most vigorous supportive measures.

3. Sapræmia (toxæmia, septic intoxication, ptomain poisoning) is due to the absorption of the products of micro-organisms (ptomains) from the seat of infection. It is evident that while true septicæmia emphasizes the actual presence of bacteria in the blood itself, sapræmia depends largely upon their limitation to the point of introduction and the destruction of tissue there, and is due to the absorption of the products from the original point of infection. Sapræmia is often ushered in with a single chill, followed by fever and sweat, tenderness and pain at the infected spot, or, if the wound be under observation, it will appear swollen, with inflamed edge and covered by unhealthy granulations. The skin is hot, the pulse and respiration are rapid, the tongue is dry and thickly coated, the urine scanty and highly colored; the patient is restless, with a mild delirium. This condition lasts four or five days, and the symptoms gradually subside. It is in obstetric practice that this form of disease is too often found. The whole course of sapræmia emphasizes the local element, and to local treatment we must look for its removal. The constitutional treatment consists of stimulating and supportive measures.

4. Pyæmia: Few terms in surgery are so confusing as pyæmia. It seemed to the speaker that we can safely restrict the term to a distinct disease characterized by a state of depression common to all typhoidal conditions, but distinguished by the formation of pus cavities in different and widely separated parts of the body. No tissue can be exempt. There is here surely a double infection, the micro-organisms of putrefaction and of pus both being introduced directly into the blood, and the latter proliferating wherever they happen to lodge. The symptoms appear about the second week after the injury. They are repeated chills and colliquative sweats, the temperature rising synchronously with the chill, the pulse and respiration rapid and weak, with icteroid skin, anorexia, more or less diarrhœa, great prostration, great pain at the immediate seat of the abscess, hyperæsthesia of the cutaneous surface, and erythematous rashes and ecchymoses; the mind is clear, unless metastatic abscesses lodge in the brain. We can differentiate it from true septicæmia by the mental clearness, the hyperæsthesia, the repeated chill (half a dozen a day) and excessive exhausting sweat, and the localized abscess. The treatment is supporting and stimulant, with early evacuation of the abscesses where accessible.

Arterial pyæmia, so-called, is an entirely different condition, being non-infective, depending upon the lodgement of an embolus in some distant organ, detached from a fibrinous white thrombus in the left ventricle. The term should be abandoned.

Cicatricial Stenosis and Valve Formation as a Cause of Pyloric Obstruction, with a Report of Five Cases Relieved by Operation.—Dr. W. J. Mayo, of Rochester, Minn., read a paper on this subject. Non-malignant forms of pyloric obstruction are not infrequent, and have been confused with cancerous disease; the subjects have usually been left to die without surgical intervention. Stricture of the pylorus following upon the healing of gastric ulcer is the most common form of non-malignant obstruction, and four out of five cases upon which the speaker has operated have been of this variety. The production of valve formation at the pylorus is similar to the valve formation of the ureter at the pelvis of the kidney as a cause of hydronephrosis and pyonephrosis, so graphically portrayed by Fenger. Enteroptosis favors such obstruction. A few cases of congenital stricture have been reported. The diagnosis of marked pyloric obstruction and the consequent dilatation of the stomach are not difficult. The gastroscope and the gastrodiaphanoscope are of little practical value to the surgeon. The differentiation between malignant and non-malignant forms of obstruction is often difficult, and may be impossible without exploratory incision. Examination of the stomach contents is of value. When the meal test of Ewald and Boas shows the absence of free hydrochloric acid with Günsburg's test, and at the same time develops lactic acid by Uffelmann's method, the indications are for cancer. After all, the chief factors in the differential diagnosis will be obtained from a careful examination in connection with the personal history of the patient. He called attention to the significance of enlarged glands in the greater and lesser omenta as evidences of malignancy. Bull states that fifty per cent. of pyloric cancer cases prove fatal before glandular infection takes place.

Operation: The median abdominal incision, between the ensiform cartilage and the umbilicus, has proved to him the most satisfactory. Pyloroplasty is the operation of choice. The incision should be in healthy tissue rather than in scar tissue, as the latter is stiff and does not nicely coapt, and atrophy necrosis often results from suture pressure. Out of five cases he was able to do pyloroplasty in but two. Pylorectomy will be seldom done for non-malignant stricture.

Gastro-enterostomy for non-malignant disease is an operation of expediency and not of choice. Extensive contractures of the pylorus, the presence of tissue unsuitable for the security of suture union, and inaccessibility of the field of operation by reason of the presence of dense adhesions to important structures, indicate its use. Taking all facts into consideration, he believes the suture method of Wölfler offers the fewest objections.

The speaker then gave a detailed history of his five cases.

The Present Status of the Injection Treatment of Hemorrhoids.—Dr. L. H. Adler, Jr., of Philadelphia, reviewed briefly the injection treatment of hemorrhoids, quoting largely from Agnew's work on surgery.

Transperitoneal Ligation of the Iliac Artery, with Report of Cases.—Dr. T. S. K. Morton, of Philadelphia, made a report on twenty-eight cases operated upon, of which number twenty-one ended in recovery. Deaths that occurred were due to abdominal complications.

The Etiology and Classification of Tumors.—Dr. S. H. Friend, of Milwaukee, Wis., read a deeply scientific paper on this subject.

Serum Therapy in Acute Surgical Infectious Diseases.—Dr. Howard Lilienthal, of New York, read a paper on this subject.

The Differential Diagnosis of Surgical Lesions in the Right Half of the Abdomen and Pelvis, with Especial Reference to the Diagnosis of Appendicitis.—Dr. George Ryerson Fowler, of Brooklyn, N. Y., read a paper on the above subject. There can be no

question that the inflammatory conditions of the vermiform appendix constitute the most important surgical lesions of the abdominal cavity in both sexes. The difficulties of diagnosis are greatly increased in the female, owing to errors arising from the presence of neighboring organs that take on suppurative inflammation. All conditions which may be mistaken for appendicitis in the male, with the sole and rare exception of an inflamed right undescended testicle, occur likewise in the female. Some occur with greater frequency in women; such are cholelithiasis and impaction of gall stones and resulting dropsy and empyema of the gall bladder, etc. Gall stones occur nearly five and floating kidney six times more often in women than in men. One should bear in mind that the right kidney is affected four times as frequently as the left. Appendical affections rank first in importance among the surgical affections of the abdominal and pelvic cavities.

Appendicitis clinically is divided into acute, subacute, and chronic. The speaker then briefly called attention to the principal points to be borne in mind in the objective and subjective symptoms of these clinical forms.

In acute appendicitis points to be noted are: (*a*) Sudden onset; (*b*) colicky or cramping abdominal pains, which in the majority of cases are referred to the region immediately above the umbilicus, and later become diffused; (*c*) vomiting; (*d*) localized pain and tenderness—this is finally referred to the right iliac region; (*e*) rigidity of the right rectus muscle at its lower part; (*f*) the presence of a tumor in the ileo-cæcal region, which makes its appearance after the first or second day; (*g*) fever, which is not marked at the commencement, and some acceleration of the pulse. Variations from the usual and typical characteristics of an acute attack consist in: 1st. Occurrence of primary general abdominal pain, rather than the localized pain. 2d. Absence of vomiting, due to the fact that the stomach is quite free from ingesta. 3d. Localized pain usually abated and right iliac tenderness diminished by the administration of opiates. 4th. Opiates may so modify respiratory movements as to render rigidity of the right rectus muscle of no service in diagnosis. 5th. Tumor is not usually to be found until after twenty-four hours; it is often delayed until after forty-eight hours. The speaker referred to the various positions in which the tumor may be found. 6th. The pulse rate may be but slightly affected in the beginning, and during an exceptionally mild attack ulcerative perforation of the organ may occur at any time with no rise of temperature.

In subacute appendicitis the onset is less stormy, and the affection is often regarded as indigestion or intestinal colic. Tenderness at the site of the appendix can generally be elicited, but usually there is no tumor. These cases, if permitted to continue, will certainly eventuate in an acute attack.

Chronic appendicitis may be chronic from the beginning. In the vast majority of cases it either eventuates from repeated subacute attacks or follows a well-defined acute attack. The characteristic clinical picture is marked by tenderness in the ileo-cæcal region, with or without the presence of tumor.

The differential diagnosis will be between lesions of gall-bladder origin, those originating in the intestine and not of necessity involving the appendix, and tubo-ovarian disease. The passage of a stone along the ductus communis choledochus may simulate the commencement of an acute appendicitis. A gall stone impacted in the cystic duct and followed by dropsy of the gall bladder may give rise to some of the symptoms of chronic appendicitis.

An acute obstruction or a perforation of the bowel in the ileo-cæcal region must be differentiated. Of less importance are the chronic obstructions and neoplasms, because they do not require such prompt diagnosis and celerity of action as do cases of acute appendicitis.

The following points should be borne in mind: Frequency—males, eighty per cent.; females, twenty per cent. History of an attack is usually that of an acute onset. Pain is usually acute and radiating. In subacute and chronic appendicitis the pain may be dull and localized. Vomiting is exceedingly common in appendicitis. Tenderness in the great majority of cases is located over the site of the appendix. Chill or rigor is of infrequent occurrence in appendicitis. Fever is present in appendicitis, although its grade does not indicate the severity of the attack. Muscular tension is almost invariably absent in adnexa lesions. Tumor is rarely present before the third day in appendicitis. It is rare that a tumor of appendical origin can be felt by the vaginal touch. The course is usually an acute one, while lesions of the adnexa are usually subacute or chronic.

The speaker called attention to the fact that one should remember that great difficulties may present themselves in establishing a diagnosis of appendicitis in the male sex under circumstances of a long appendix passing deeply into the lesser pelvis.

Fourth Day—Friday, June 4, 1897.

(*a*) **The Treatment of Colles' Fracture; (*b*) The Passing of Plaster.**—Dr. E. A. Tracy, of Boston, Mass., discussed the above subject. In 1814 Colles published his observations; previous to this time he had reported a case of this condition under the belief that it was a dislocation. The nearness to the wrist-joint and the absence of characteristic signs of fracture served to make the diagnosis of fracture difficult. The speaker then quoted the views of eminent surgeons in reference to the treatment of Colles' fracture. The views of Sir Astley Cooper, John H. Packer, Swinburne, Bright, McClellan, Agnew, and others were mentioned. The stiffness of the wrist and fingers is due to a fibrinous exudate about the tendon sheaths. The writer believes that passive motion should be employed about the fifth day. Fracture, if reduced, has no tendency to separate. The hand is placed in the semiprone position, and a splint applied which needs only moulding and no padding. In the treatment of Colles' fracture we must, first, reduce; second, protect; and third, employ passive motion of the fingers from the first day, and of the wrist from the fifth day. Dr. Manley some time ago stated that plaster of Paris is doomed. The speaker thought that plaster of Paris will be soon relegated to its proper position. Plaster of Paris is dangerous, and sometimes deadly. It does not immobilize the inclosed parts. Passive motion is important in the treatment of these fractures, and immobilization is not indicated. Splints should be applied daily and removed daily, so that the surgeon may know the condition of the fracture. He related a case of fracture which was put up in plaster-of Paris splint; after the removal of the splint, the parts were bathed in pus and the bone protruded. He wished to call the attention of the section to the wood-fibre splint, specimens of which were shown. A few facts relative to wood fibre were then given. This material can be applied to a fracture of any limb. No cotton batting is used. It is simply retained by a bandage. Swelling does not interfere with the keeping of the wood fibre in position. The splint can be readily removed, in order to conduct passive motion. He emphasized the fact that passive motion of joints should be employed at the earliest possible time. The material is porous, light in weight, clean, and can be used for months. Wood-fibre material permits of the intro-

duction of antisepsis. It is also pervious to the *x*-rays. Mastery comes to any one who possesses ordinary mechanical skill.

Dr. McFarland, of Pittsburg, said that he thought great ability was necessary in applying the splint. He could not coincide with the reader of the paper in reference to the baneful influence of plaster of Paris. He laid great stress on the use of the cotton batting. In compound fractures it is possible by the use of the fenestra to do good work with plaster of Paris. One should become accustomed to its use. Plaster of Paris does not interfere with the *x*-rays. It is now a well-recognized procedure to treat fractures by the ambulatory method—secure the limb in plaster of Paris and allow the patient to walk about—and so permit a business man to attend to his duties.

The Chairman thought that a great deal of blame had been unjustly placed upon plaster of Paris by the reader. In the instance reported by the reader of the paper, in which the plaster was said to have caused sloughing of a limb, he thought the fault was with the surgeon who applied the plaster rather than with the plaster itself; it was lack of intelligence in applying the plaster that caused the slough. Plaster of Paris did immobilize a limb if placed on properly. He thought the objection to the splint shown was the lack of good application.

Dr. Gaston, of Atlanta, Ga., said that in the restoration of bone we must have inflammatory action. If there is no inflammatory action bone does not grow together well. He has had to grind ends of bone together in order to get enough inflammatory action, and he then reapplied the plaster of Paris. He has used pasteboard splints with good results.

Dr. Fowler, of Brooklyn, stated that three-fourths of all malpractice suits against practitioners were brought about by the bad results following fracture treatment. He had used plaster-of-Paris material at one stage, and pasteboard at another stage. Wolff, of Berlin, attempted to make a spinal jacket of silicate of sodium and plaster of Paris in the same splint. This device could be applied to both extremities. The silicate of sodium was used first, then dry muslin, and lastly the plaster of Paris was applied. Later the plaster of Paris was cut away and the silicate of sodium was left. This was particularly useful for weak women, with whom the light silicate could be used instead of the heavy plaster.

Dr. Tracy closed the discussion. He stated that he had used wood-fibre splints in his practice for many years. He also stated that he now used more than ever plaster of Paris and other material. He had seen bad results follow the use of wood fibre as well as that of plaster. He agreed with the chairman that the fault was more with the surgeon than with the dressing.

Officers. — The following officers were elected: *Chairman*, Dr. W. Rodman, of Louisville, Ky.: *Secretary*, Dr. H. O. Walker, of Detroit, Mich.

Appendicitis and Typhlitis.—Dr. Storch (*Journal of Practical Medicine*, April) concludes as follows: 1. The term typhlitis as applied to diseases in the region of the iliac fossa is erroneous, misleading, and dangerous. 2. An active cathartic assisted by enemas will most always dispel all doubts as to whether we have to deal with a case of strangulation of the bowels or with appendicitis. 3. Foreign bodies are not always the sole cause of appendicitis. 4. The pathogenic intestinal microbes are pus producers and sole agents of ulceration and perforation, and as such play the active rôle in appendicitis. 5. Surgical interference at an early period is the only rational safe procedure in appendicitis.

Surgical Suggestions.

Resection of Lung.—Resection of lung, or pneumectomy, would appear at first glance to be a rational method of procedure in tuberculosis of the pulmonary structure. Surgeons who are accustomed to practise resections of the articular extremities in tuberculous osteoarthritis and extirpation of the synovia in tuberculous synovitis, and who have witnessed the gratifying results following these operations, are at once impressed with a desire to institute radical operative methods in a disease which counts its victims by thousands yearly. The pulmonary structure, however, differs from all other structures in the body in its susceptibility to infection by means of the bacillus tuberculosis, and its anatomical peculiarities are such as to favor extension of infection and reinfection of parts whose vital resistance has been lowered by disturbances of nutrition from any cause.—Dr. George R. Fowler, *Annals of Surgery*, November, 1896.

Abdominal Contusions with Visceral Lesions.—Dr. Gilliam (*Columbus Medical Journal*, March 16th) says that, in order that we may guard against such wholesale interference and still include as many as possible of the cases demanding operation, he has formulated the following rules. Explorative section should be made: 1. When blood is found in the ejecta of the stomach or bowels or in the urine. 2. When abdominal rigidity, tympanites, or other inferential signs of visceral lesion exists. 3. When the patient complains of burning pain or a sense of grave internal injury. 4. When there is profound, remittent, or recurrent shock. 5. When from the nature of the injury it is probable that visceral lesion has resulted. And finally the patient in all cases should be watched closely for forty-eight hours, during which time any untoward manifestation should be the signal for exploration.

Trephining.—Dr. Estes states that his experience leads him to believe that one should never use the trephine in depressed compound comminuted fractures. The instruments usually necessary are a knife, a pair of blunt-pointed scissors, a chisel, a good sharp Hopkins rongeur, two or three bone forceps with different curves, an elevatorium, two thumb forceps, one "rat toothed," a half dozen hæmostatic forceps, small and medium-sized curved needles and a good needle holder, small and medium silk, silk gut and catgut for sutures and ligatures. The small needles should be previously threaded and ready for instant use.

Acute Osteomyelitis.—Deep, rapidly increasing pain in an arm or leg, accompanied by swelling without redness or fluctuation, together with high fever or chills, is the typical picture of acute osteomyelitis. The disease at this stage, which may be a few days or only a few hours from its onset, is indeed one of the emergencies of surgery. The diagnosis must be carefully but fearlessly made and the treatment speedily instituted, for delay may mean death or lifelong deformity. No temporizing should be permitted once the diagnosis is clear, but free incision to the bone, with chiselling into its marrow, should be at once performed. You will not find pus, as a rule, in these early cases, but a periosteum which is easily peeled from the bone and a cortex which bleeds but little. Immediate relief of symptoms will show that you have not struck amiss. The frequency of necrosis of bone would be greatly reduced if these timely operations were more common. Unfortunately, the procrastinating poultice or the ice bag too often has its day, and in the mean time local tissue destruction and general sepsis may

compromise the case. Remember that any bone may be the seat of acute osteomyelitis, although it is oftenest encountered in the long bones.—*International Journal of Surgery.*

Enlargement of the Prostate.—In the ordinary cases of prostatic enlargement, of however long standing, in which the obstruction is not great and the power of the bladder is fair, in which there is not an excessive amount of residual urine, in which catheterism is easy and painless, and in which cystitis, if it exists, is not severe and can be controlled by aseptic washings and regular catheterism, operative treatment is not indicated.—SAMUEL ALEXANDER.

Torticollis.—Dr. Gillette (*Pediatrics*) reports three cases of torticollis due to adenoid vegetations and chronic hypertrophy of the tonsils. One case was cured by the removal of the local trouble and the others were greatly benefited.

Massage and Movements in the Treatment of Fractures.—Dr. Davis (*Annals of Surgery*, December, 1896) summarizes his views as follows: "It is my belief that massage and passive motion are not used to the extent that they should be in the treatment of fractures; that immobility of the fractured ends favors quick union with little deformity; that there are some cases in which, owing either to peculiarities of the fracture or the impaired constitution of the individual, the tendency to the formation of callus is marked. Motion in these tends to the formation of exuberant callus and deformity. There are others in which bony union is unduly delayed; disturbance of the fractured ends in these hinders union. It is wise to wait until the fractured parts are glued together, usually eight or ten days, before attempting any except the lightest massage, and any extensive passive motion after that time should be used carefully but diligently. Passive motion and massage, when first attempted, should be of the most gentle character, and not so violent as to disturb the relation of the broken bones. Any marked pain and inflammatory reaction following passive motion and massage are evidence that they have been too violent. The limb should receive massage and manipulation at each inspection or change of dressing, often daily. In some cases it is advisable to administer such massage as is possible without removing the splints. Persistent stiffness, particularly in fractures or injuries of the wrist, is often due to a rheumatoid affection locating itself in the injured region. Massage is valuable in the treatment of such, and should be given to that part of a limb beyond the seat of fracture to preserve it in a normal condition. Such dressings and methods of treatment should be adopted as will allow of the greatest use of massage, and passive and active movements consistent with proper retention of the fragments."

The Treatment of Injuries to the Gall Bladder and Biliary Ducts.—Drs. Terrier and Auvray (*Rev. de Chir.*, January, 1897) recommend operative interference in doubtful as well as in positive cases of injury of these parts. Laparotomy should be performed even though the question may arise whether a wound of the abdominal wall be a penetrating one or not, and also in cases of contusion when one suspects a rupture of any of these parts. Peritonitis caused by the effusion of bile is usually restricted and of a mild character, provided the fluid be aseptic; still there can be no doubt that bile, when in contact with the peritoneum, may act as a poison. Loss of bile resulting from the effusion of this fluid into the peritoneal cavity leads to exhaustion and emaciation, which will sooner or later threaten the life of the patient. Therefore in a case of abdominal contusion in which there is the least doubt as to the existence of a lesion of the biliary passages and in which there is pain localized in the epigastric or right hypochondriac regions, one should resort to prompt exploratory laparotomy. This operation, when performed with strict antiseptic precautions, is quite free from danger, and consists in a simple incision through the abdominal wall over the region in which the presence of effused bile is revealed by dulness and in the evacuation of the fluid. Caution must be taken not to wound any adherent intestine or any false membrane that may have formed about the seat of rupture. If the gall bladder be found torn through, one has to decide between cholecystorrhaphy and cholecystectomy, the former being practised for slight wounds and the latter when there has been much laceration. Rupture of the cystic duct should be treated by a ligature of the canal at its peripheral end and subsequent cholecystectomy. Rupture of the hepatic duct can be treated only by evacuation and temporary plugging and drainage, with a view of preventing further effusion into the abdominal cavity and the formation of protective adhesions. In case the common duct be opened it should be closed by a double ligature, and then a communication should be established between the gall bladder and the small intestines.

Silver as an Antiseptic in Surgical Practice.—Dr. Credé (*Centralbl. f. Chirurg.*, No. 43, 1896) advocates the use of silver and silver salts as safe antiseptic agents in the treatment of wounds. Gauze impregnated with finely divided silver may be used to cover the incision made in a surgical operation. If this is placed over ulcerated or freely secreting parts the silver is converted into the lactate of silver by means of the products of decomposition; this substance is very irritating. An open surface, therefore, is first covered by powdered citrate of silver and then silver gauze is placed over it to exclude the air. Credé states that this method of treatment does not require such strict precautions as other methods of antiseptic treatment. The results of this treatment have been very good and he regards the silver dressings as being the most reliable in the treatment of all forms of wounds.

The Best Method of Suture after Laparotomy.—La Torre (International Congress in Geneva) says: A good abdominal scar depends upon three main factors: the location of the incision, the suture material, and the method of suturing. Bantock: Bacteria take no part in the production of pus. They are the result and not the cause of the condition. Suppuration of the abdominal wound or the suture tract does not originate from the introduction of germs or adult bacilli into the wound, but is the sequence of necrosed tissue in the wound and excessive tension of the sutures. The ordinary interrupted suture suffices in most cases, but in very fat subjects it is advisable to close the peritoneal cavity with continuous sutures, while the rest of the wound is united by two layers of interrupted sutures. Silk is the best material for interrupted sutures, while for the continuous, catgut (not chromic-acid gut) is preferred. Byford: Avoidance of wound infection and injury to the tissue during operation is of prime importance. A median incision is advised. First unite the peritoneum, next fascia and muscles, and finally the skin. Use interrupted sutures of silkworm gut. Edebohls: The resistance of the abdominal scar depends upon a broad surface of contact. Divide the fibrous covering of the recti and in the subsequent closure of the wound the peritoneum is first united, next the two recti muscles are sutured together, and the suturing of the fascia and skin completes the operation. Use chromic-acid catgut for all

but skin sutures. Wylie: Hernia in the linea alba is frequently the result of abscesses, often caused by an excessive tension of the sutures. An exact suturing of the fascia is necessary; this should never be done by continuous sutures which would carry infection throughout the whole wound. Pozzi and Engström also lay great stress upon an accurate union of the same anatomical structures. Coelho considers deep silk sutures the best method, while Latzko demonstrates a series of microscopical sections of the abdominal scar which show that deep sutures unite many structures not anatomically related to each other, while a careful suturing of fascia to fascia and muscles to muscles, etc., leaves a hardly distinguishable scar.—*Indian Medical Gazette*, February, 1897.

Pyloric Obstruction of Hepatic Origin.—This rare sequel of cholelithiasis has been mainly acquired by exploratory operations. MM. Tuffier and Marchais record two cases and give a digest of those recorded by others. The calculous origin was clearly demonstrated in the whole series, except when the obstruction resulted from the mechanical pressure of an hepatic abscess or of a biliary cancer. An impaction of a calculus, whether in the bladder or in the ducts, may be followed by an ascending infection resulting in the formation of adhesions, with cicatricial contraction following, at times complicated by the development of fistulous openings between the gall bladder and the pylorus or duodenum. Symptoms of pyloric obstruction develop insidiously and may not appear until a long time has elapsed since the impaction of gall stones. The clinical features are somewhat the same as those met with in pyloric obstruction resulting from stricture and cancer. The vomited matter is very abundant, always containing free hydrochloric acid, and there may be a large amount of bile and even gall stones. In a small number of cases hæmatemesis is present. Dilatation of the stomach is pronounced. As the stomach gradually dilates, the pyloric obstruction may become complete and the patient dies of inanition, although recovery has occasionally followed upon the vomiting of a number of gall stones. The authors recommend washing out the stomach and other measures which may be conveniently described as medical; if no definite improvement follows, an exploratory operation is to be undertaken. The belly is to be opened in the median line rather than in the area of possible adhesions. The dilated stomach is to be displaced upward, which allows the region of the pylorus, the duodenum, and gall bladder to be explored; the latter may be found small, contracted, and united to the pylorus by adhesions, or there may be an ill-defined mass formed by the fusion of pylorus, duodenum, gall bladder, pancreas, etc., so firmly matted together that it is dangerous to attempt to separate them from each other; but if it is possible to separate these adhesions, it should be done with a proper sense of the risk involved. If, however, the obstruction at the pylorus is not relieved, a gastro-enterostomy, which affords the best means of relieving the symptoms, is to be performed.—Fevier, *Rev. de Chir. de Paris*, 1897.

Moribund Intestine.—Dr. Power (*British Medical Journal*, February 27, 1897), in an article on "The Pathology and Surgery of Intussusception," writes in regard to moribund intestine as follows: "When the surgeon has opened the abdomen and finds that the intussusception is greatly congested and has lost its gloss he must not too hastily assume that it is dead, yet it is often a matter of no slight difficulty to decide whether or not the bowel is capable of recovery. A piece of intestine which is only congested will bleed if it be pricked, even though it has lost its lustre, and if it be gently stroked until its vessels are emptied the blood will be seen to pass along the vessels again as soon as the pressure is taken off them. A piece of intestine in such a condition must be handled very tenderly. It is unnecessary to remove it, and the patient is often so collapsed as to render any prolonged operation impossible, even if enterectomy were advisable. The wisest thing to do in such cases is to wrap a layer or two of gauze round the injured intestine as soon as the invagination has been released. One end of the gauze is left hanging out of the abdominal wound, the intestine is laid inside the peritoneal cavity, and the incision is lightly closed with temporary silk sutures. If the bowel ruptures, the intestinal contents may then find their way out of the abdominal cavity, while if it recovers the gauze can be removed and the wound will close by granulations."

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

JUBILEE HONORS FOR DOCTORS—HOSPITAL SUNDAY FUND—MERCER'S HOSPITAL—HEALTH OF LONDON—COLLEGE SURGEONS—DEATH OF DR. RAMSKILL—THE HOSPITAL FUNDS—FILARIA LOA—CHARCOT'S DISEASE AND RHEUMATOID AFFECTIONS—ANTITOXIN IN DIPHTHERIA—HEALTH OF LONDON AND DUBLIN.

London, June 25, 1897.

Jubilee, jubilee all the week. It is over now so far as London is concerned, and the centre of its interest is the naval review.

Doctors have not been altogether omitted from the honors conferred on the occasion. No second medical peerage has been created, but some baronetcies and knighthoods are conferred and promotions in their orders of several who had already obtained such distinctions. These of course were largely represented by our military and naval brethren. The presidents of the two colleges receive baronetcies. Dr. Wilks, of the College of Physicians, was of course in every one's mouth as the one certainty, and we are all glad we were right. In fact, his claims could not be exceeded. Sir Wm. MacCormack had already been knighted and less could not be offered. The presidents of the two Irish colleges, Dr. Duffy and Mr. Thomson, receive knighthoods. A baronetcy is conferred on Mr. T. Smith—Tom Smith of Barts, as his friends have so long called the amiable and skilful surgeon. I wonder if they will drop the familiarity now he is Sir Thomas Smith, Bart. Dr. Gowers is knighted. His work has been worthy of even higher distinction. Dr. F. Semon attains the same honor. This is the surprise of the list, as he is a German, though some say that is the reason. He holds the German Red Eagle Order and founded a German periodical devoted to his specialty.

Among those promoted and admitted to orders are Dr. Thorne Thorne, C. B., who naturally receives the K.C.B. So do Inspector-General Norbury and Surgeon-General Gordon. In the case of the latter the distinction has been too long delayed. Dr. C. A. Gordon served through the Indian mutiny and in China with distinction and had been principal medical officer of Madras. He was sent to Paris with Surgeon-Major Wyatt, and they remained through the siege and felt all its horrors. The ambassador did not remain, but fled to Lyons, leaving there two surgeons as our representatives. The wretched government of that day never recognized their service—it is said for fear of reflecting on the ambassador. At length the present government repairs the neglect

as to the survivor, and Dr. Gordon, C.B., becomes Sir C. A. Gordon, K.C.B., but poor Wyatt has long been in his grave. Mr. Burdett of hospital fame and Professor Crookes also get K.C.B., and as their work is so related to ours they may be included in our congratulations. Dr. Grimshaw, registrar-general for Ireland; Dr. Nicolson, visitor in lunacy; Major-General Jameson, director-general; Sibthope, Indian medical service; and MacNalty, army, receive the C.B. Among the other orders the medical names are Mackie, Egypt; Bushell, Pekin; Brown, colonial office; Rowland, Lagos; Hooker, Kew; Hooper and Cleghorn, India; Husband, Ajmere; and Inspector of Fleets H. C. Woods. Dr. Haffkine's labors in India are recognized by a C.I.E.

The Hospital Sunday Fund up to this date has amounted to only half as much as in the corresponding week last year. But probably the suspension of business proceedings through the jubilee has prevented the remittance of the collections and they may be larger next week.

As was to be feared, there are several candidates for Mercer's Hospital, who are ready to fill the vacancies on the condition of being equally ready to be dismissed whenever the non-medical board may please. Sad to say, some whose assured position should make them equal to refusing such terms are willing to "bow the knee" to the gods in possession. Will not the Irish profession boycott them?

The health of London just now is a source of congratulation. Last week the mortality rate fell to 13.4 for 1,000. The previous week it was only 14.8. We may take the average of the whole country as about 19, though in many places it is only 16, in others 14, and in some it has touched 12. Our present figures have been well contrasted with the 80 per 1,000 of Queen Elizabeth's time.

Lister declines the projected nomination for the Council of the College of Surgeons.

The death is announced, on Jubilee Day, of Dr. Jabez S. Ramskill, many years physician to the London Hospital, a member of the College of Physicians from 1853, and from some strange prejudice never made a fellow. He was long physician to the Hospital for Paralysis and Epilepsy, and contributed many papers on nervous diseases.

London, July 2, 1897.

The Prince of Wales' hospital fund has done well this week. Yesterday checks for £5,512 15*s.* 6*d.* were received from the Freemasons of England as the result of a great meeting of the order lately held at the Albert Hall, under the presidency of the prince as grand master of Freemasons in England. These contributions from the grand lodge are in addition to many gifts from different lodges and chapters, as well as from individual Freemasons. This morning it is also announced that the annual subscriptions promised to the fund amount to £2,449 10*s.* 3*d.*; donations, £132,598 14*s.* 9*d.* Commuted subscriptions, to be invested, £20,554 2*s.*

The Hospital Sunday fund has much increased during the week, but still lags behind the amount received in the same period last year. It is hoped that this is only on account of delay in remitting, caused by the interruption to business of every kind during the jubilee week.

Filaria Loa is rare enough to excite continuous interest in any case. Two years ago Dr. Argyll-Robertson reported one, and he has lately related to the Ophthalmological Society its subsequent history. The patient went back to Old Calabar, and forthwith her symptoms returned. Itching behind the eyes and swellings in the arms were prominent, and are said to be almost universal in the Gaboon. Once the patient felt a bite in the night, and immediately extracted a portion of the worm. Movement of a parasite was felt under the conjunctiva. On two occasions the knuckles were incised in search for one felt moving. As lately as last May one was felt near the umbilicus, but could not be secured. When the parasites are felt moving, headache, nausea, and puffy swellings of the arms are troublesome. All parts of the body seem affected, especially the scalp. The blood, saliva, nasal mucus, and excreta have been searched unsuccessfully for embryos. I hear that two cases were lately under Dr. Manson's care. The life history of this parasite has yet to be made out.

The relation of Charcot's disease to chronic rheumatic arthritis seems still uncertain—some holding it to be merely a variety, others regarding it as in no way related. The question was lately before the Royal Academy of Medicine in Ireland, *à propos* of a case exhibited by Dr. Conolly Norman, with skiagraphs showing the condition of the bones. He thought perhaps some nervous affection is in such cases associated with the rheumatic disease. This would be an approach to the view of those who look upon chronic arthritis as altogether a neurosis.

Dr. Norman said he had seen only one case of Charcot's disease in Dublin, but had examined his specimens at the London congress. He thought the destruction of bone was much greater than in rheumatic arthritis, but nevertheless the disease was pathologically the same, except that there was more effusion in rheumatism in these islands, but he said this was not so in France, as shown by the term *arthrite sèche*. I fancy, however, this term only belongs to one stage of the disease, for great variety in respect to effusion is observed in different cases, and the majority are characterized by a dry stage at some period of their long course. Dr. Finny thought Dr. Norman's case must remain at present in an unknown category. The degree of effusion in the joints and the backward movement of the leg differentiated it from the very few cases of Charcot's disease he had seen. It was not easy to test the knee jerk, and the mental condition was against tabes. The patient was not affected in the upper limbs, but they might become involved later. It was afterward remarked that the only symptom of tabes present was the Argyll-Robertson sign, and there was much anæsthesia of the legs, which is suggestive of alcoholic neuritis. Altogether the case is interesting, and, considering the prevailing confusion respecting the relation of various diseases to the rheumatic group, well worth watching.

In the Harben lectures at Kings College, Dr. Sims Woodhead has discussed the antitoxin treatment of diphtheria. On Wednesday he exhibited specimens of degeneration of tissues produced as early as the third and fourth day of the disease, and observed that when such changes have taken place we cannot expect rapid restoration. This accounts for the necessity of early treatment, as the serum decreases in power with every day of delay. In the presence of both toxin and antitoxin, these destructive changes do not occur. He held that the serum is preventive as well as curative, and would recommend its use as a prophylactic to persons exposed to infection. He enforced the necessity of early treatment by statistics showing great differences in mortality according to the day on which it was begun. Even in cases which had been neglected until the fifth day, there is a reduction in the mortality of 6.2 per cent., and he declared that those who oppose the use of the serum "assume a tremendous responsibility."

London is maintaining its exceptionally low rate of mortality. The health of Dublin has undergone a remarkable improvement. It is not long since I mentioned the epidemics there and the terrible mortality rate of 42 per 1,000. It has now dropped to 19.7.

OUR BERLIN LETTER.

(From our Special Correspondent.)

HOT WATER IN DISEASES OF THE SKIN—EXCESSIVE TREATMENT IN DISORDERS OF INFANTS—HOSPITALS FOR INFANTS—NUTRITION AND PUTREFACTIVE PROCESSES IN THE INTESTINES—A UNIVERSAL ANTISEPTIC FOR INFECTIOUS DISEASES—MEASUREMENT OF PUS IN THE URINE—TRAUMATIC DISORDERS OF THE HEART.

June, 1897.

A FURTHER proof of the tendency to abandon the purely medicative treatment of diseases for hygienic and dietetic methods has been recently furnished to us by Rosenthal in a paper upon "The Therapeutics of Hot Water, Especially in Diseases of the Skin," read before the Verein für innere Medicin. The physiological effect of hot water upon the organism consists principally in an increase of the waste products, brought about by the stimulation of the circulation, an increased exchange of the gases, etc. This effect points out to us the indications for its employment. Contraindications are heart disease, angina pectoris, atheroma, etc. Good examples of its beneficial effects are seen in hot forehead baths in migraine and hot douches in uterine hemorrhages. Observing that a soft chancre in feverish patients always heals quickly, Rosenthal was led to employ hot water in the treatment of this affection. *Per se*, it will not heal, but it aids the healing very remarkably. It has been further suggested to employ hot water in the treatment of gonorrhœa, but thus far no reports have been handed in. The bactericidal working of hot water is especially noticeable in favus and stinking abscesses of the feet. Of great benefit is its employment in pruritus, chronic urticaria, various forms of eczema, and notably in acne vulgaris and acne rosacea.

Neumann, the well-known pædiatrist, has come out strongly against the too zealous employment of water in the treatment of infants. He maintains in his article upon "Excessive Treatment in Disorders of Infants" that the early removal of the vernix caseosa is a wrong procedure, because it is aseptic. The first bath should therefore be given after the navel wound shall have healed. Neumann also speaks against too active cleansing of the mouth, too much rubbing and scrubbing; also against the loosening of the frænum linguæ, which is so often unnecessarily done. He protests especially against scarification of the gums in the belief that dentition is the cause of many diseases. He deserves our thanks in thus combating the abuses in infant therapeutics, and in thus lending weight to the maxims "Ne nimis" and "Primum nil nocere."

The subjects of "Infantile Feeding" and "Hospitals for Infants" have been recently taken up by Professor Huebner. He warns against too much dilution in artificial milk feeding, as the infant thereby receives too few calories. He takes stand against hospitals for young infants; in them the mortality is considerably higher than in families. He found the cause to be an infection of the children through the nurses, under the fingernails of whom he demonstrated the presence of large numbers of the bacillus coli communis. He ordered thereupon that those nurses who cleaned the children should not feed them, with the result that the mortality receded from eighty per cent. to sixty-five per cent. He therefore views in the establishment of hospitals for suckling infants a great danger; but, as their establishment is a social necessity, he believes the dangers may be minimized by having smaller wards, dividing the nursing-service, admitting the mothers, etc. In the discussion to which his article gave rise the foremost pædiatrists of Berlin participated, and all conceded the justice of Huebner's stand against these institutions. Especial attention was called to the large mortality among the illegitimate children of Berlin. The cause is to be found in the want of attention and the lack of care in the preparation of the food, as a result of which the children fall victims to intestinal catarrh.

Albu has recently shown in a paper read before the Verein für innere Medicin, entitled "Relationship of Intestinal Putrefaction to the Nutrition," that in disorders of this nature prophylaxis is the chief thing. Intestinal antiseptics and intestinal disinfection, in the true sense of the word, do not exist: all attempts to prevent intestinal decomposition and putrefaction by means of internal medication have proven futile. This applies to enemata as well. The best results are obtained from laxatives which remove decomposing contents, or at least the greater part. Albu made two series of investigations: first, the influence of sterilized food; secondly, the influence a strict milk diet. He found that only after good previous catharsis would the intestinal decomposition during a sterilized diet become decreased from that resulting from an ordinary diet. Of course this is not adapted to ordinary living. The decomposition after a milk diet, on the other hand, was markedly diminished. A variety of experiments showed that this result was owing to the sugar of milk present in the milk, working either as a laxative or as a specific intestinal antiseptic. This antiseptic action finds its explanation when we consider that the milk sugar, together with the albumin and fat of the milk, is brought into intimate contact with all parts of the intestines, and splits up into the strongly disinfecting lactic acid. Still the milk sugar cannot prevent the intestinal decomposition, as the latter is dependent upon a great variety of circumstances (quantity, composition, and quality of the nutrition, frequency of meals, number of stools, etc.), and also because the addition of other food stuffs interferes with the working of the milk sugar. In practice we must therefore refrain from any attempt to disinfect the intestines through medication.

Professor Posner, who believes it necessary to make quantitative tests for pus in the urine, has devised a method for this purpose. He estimates by means of the transparency of the urine. The urine is placed in beakers, each beaker being placed upon or before a paper with writing or printing upon it; each glass is filled with the urine under examination until the writing or printing can no longer be read. An empirical scale has been devised and is used as a standard of comparison. As a second method of estimating pus, Posner employs the Thoma-Zeiss apparatus for counting the pus cells.

It is also of interest to note a case reported by Litten which illustrates the possibility of a traumatic heart disease. A soldier in active service received a kick from a horse in the region of the heart and was brought into the hospital, where he was found to have an acute endocarditis. He convalesced. Nine months later Litten examined him and found an increase in size of the right and left sides of the heart and systolic mitral and aortic murmurs. He made the diagnosis of mitral regurgitation and endocarditis. Litten has no hesitation in pronouncing this case as one of indisputabe traumatic endocarditis. As a result of the kick either the valves were torn or the endocardium was loosened, and thrombi formed at the place of laceration; these last organized and thus produced the vitium cordis. Of course the patient was entirely well prior to the accident, having passed the military examination.

Kossmann recommends the injection of a drachm of glycerin within the cervix to induce labor.

MEDICAL EDUCATION IN AMERICA AND GREAT BRITAIN.

To the Editor of the Medical Record.

Sir: I have just read your editorial in the Medical Record of July 3d, and am astonished that you seem to consider New York the sole State having interest in advanced education. You evidently have forgotten the battle made by the University of Pennsylvania for this high standard, and, as I am very familiar with both your New York schools and those of Philadelphia, I unhesitatingly say that, should any be singled out for conspicuous leadership, that one should be the University of Pennsylvania. Your article is most unfair to Pennsylvania schools in general and to the University of Pennsylvania in particular. Having had opportunity to see something of English schools, too, I am forced to conclude that it is not of inferior standard compared with any of them.

I trust you will see your way clearly to present your readers these proper objections to your editorial position.

S. S. Koser, M.D.

Williamsport, Pa.

[Our correspondent is in error in supposing that we intended any reflection upon the University of Pennsylvania. We merely stated in passing that New York was well in the front in medical education reform. We made no invidious comparisons, and are perfectly willing to admit the good work of the university in question, and also of the Harvard Medical School, for that matter. It strikes us that our correspondent is a trifle too sensitive to be reasonable.—Ed.]

FORT'S LINEAR ELECTROLYSIS.

To the Editor of the Medical Record.

Sir: At a meeting of the New York County Medical Association on March 15, 1897, a paper was read by Dr. Newman, on the application of electrolysis in the treatment of stricture of the urethra. The paper in question was called forth by what occurred during my visit to the United States toward the end of the year 1895, when in the clinical practice of Dr. R. W. Taylor, at Bellevue Hospital, I performed a number of electrolytic operations for urethral strictures. In view of the success attending my treatment, Dr. Taylor procured for me the privilege of reading a paper before the New York Academy of Medicine, the members of which declared themselves distinctly in favor of the methods adopted by me.

It is with the statements made by Dr. Newman in his communication above referred to that I now purpose to deal.

Dr. Newman, first of all, contests my right to be considered the true inventor of my electrolytic instrument, which he says is exactly identical with that of Dr. Butler. (It is described in the *American Journal of Electrology and Neurology*, vol. i., No. 2, October, 1879, p. 95.) Butler's instrument is a hollow tube with a slot, in which are two wires that may be brought together by means of a screw, or separated in such a manner as to form an ellipse. This ellipse, owing to the great flexibility of the wires, adapts itself to the shape of the stricture.

I will not enter into further details of Dr. Butler's electrolyzer, since those who are acquainted with mine will see from the above that the two instruments are altogether different.

Dr. Newman criticises my electrolyzer adversely on the ground that it possesses only one blade for different-sized strictures. This is a serious error, for I have electrolyzers of different sizes, large and small. Furthermore, I will add that my own experience teaches me that a small blade may be used to dilate the canal just as well as a large one, because the muscular fibres of the urethra contract when the blade touches them, so that it is the stricture which is electrolyzed on the blade and not the blade which acts upon the stricture.

Dr. Newman does not consider that the current which I use—ten milliampères—is sufficient to break down the stricture. To this I will reply by using the argument which Dr. Newman himself puts forward in defence of his process: "The success of electrolysis in urethral strictures is so well established that simple negations cannot undo affirmations." From the objections made by Dr. Newman, it is evident that he does not understand my process and has never seen it applied.

In regard to Dr. Newman's question as to the maximum intensity of current that may be used, I will say that I have not experimented with a view to elucidating this point; but the intensity depends upon the patient's power of resistance, and in our current operations I have seen the galvanometer register as much as forty milliampères, and this without ill effects. The operation is effected just the same, while the pain is not sensibly increased.

If Dr. Newman understood my *modus operandi*, he would not accuse me of practising divulsion; for I always recommend the operator not to force or push the instrument, but simply to hold it steady. If divulsion occurred, there would be pain, tearing, and hemorrhage; but there is neither pain nor hemorrhage, and consequently no tearing.

"Now," says Dr. Newman, "the question arises, Can a current of ten milliampères for thirty seconds enlarge a stricture eleven numbers, or even less, by electrolysis; or is the enlargement due to the force used, thereby being a divulsion?" To this question I will simply reply that I enlarge not only eleven numbers, but up to eighteen or nineteen, and without using any force. I have a considerable body of notes relative to patients with almost impassable strictures, through which, after the operation, I was able to pass a No. 22 bougie, and even a No. 24, French scale.

Dr. Newman claims to test the effects of my process by means of chemical experiments, but I will not enter into the discussion thereof, because they are altogether negatived by the facts. In my work, "Traitement des Rétrécissements par l'Electrolyse Linéaire" ("Treatment of Stricture by Linear Electrolysis"), I have published a large number of observations which effectually silence the objections made by Dr. Newman against my *modus operandi*.

To sum up: Dr. Newman's objections to my operative methods have no value, because they are theoretical and in complete contradiction of facts, and also because he does not appear ever to have performed my operation.

In its action my instrument resembles to some extent Maisonneuve's urethrotome, which was so universally recommended. It differs from this latter only in that it does not cut and does not tend to produce any of the accidents so frequent after urethrotomy.

The success of the operation depends upon the form of my instrument, which acts upon one single line and with great swiftness, like the urethrotome of Maisonneuve. But the tightest strictures may be operated upon, provided the guide bougie can pass through.

Any soft stricture may be managed with a current of ten milliampères, and without the slightest forcing. In order to prevent relapses, it is necessary to pass a bougie along the canal from time to time. Up to date I have operated upon some thirty-five hundred patients, and my record cannot be affected by a simple statement.

J. A. Fort, M.D.

Paris, [illegible]

REPORT ON HYDROPHOBIA.

To the Editor of the Medical Record.

Sir: Dr. Charles W. Dulles, in his report on hydrophobia, writes to your journal under date of June 26, 1897: "The accumulation of these cases has required a great deal of labor, and I have taken pains to verify, as far as possible, the facts, and to correct the errors of published accounts by correspondence with the physicians who have had the care of the cases." Dr. Dulles has had a number of personal interviews with the writer during the past year, and yet he says, in his description of an "interesting case": "The opinion was positively given by the bacteriologist and by the coroner's physician that the dog was rabid and that the child was in great danger. The father was advised to send the child to New York." These three statements require contradiction. I never saw the dog, never performed any experimental inoculations, and never even examined the child. In my talk with the father pending a consultation, the danger was minimized and the child was advised to go not to the Pasteur Institute at New York, but to the country or seashore. The reader will readily decide between the high professional standing of an experienced bacteriologist, such as Dr. Bolton, and the veterinary surgeon who says the dog was suffering from hydrophobia and the pound keepers who say the dog had "fits."

Henry W. Cattell, M.D.

Philadelphia.

TREATMENT OF TIC DOULOUREUX.

To the Editor of the Medical Record.

Sir: *À propos* of the letter to Dr. Charles L. Dana published in the issue of June 26th, I would say that I have used large doses of strychnine, hypodermically and by the mouth, for some time, with gratifying results in the treatment of tic douloureux. It may be worth recording that one of the most marked cases is in an old lady, at present under treatment for the second time in the past three years. She is seventy-nine years of age, and has had attacks for fifty years up to the institution of treatment. She had been free up to this spring for the past two years, but during my absence for post-graduate work her attacks recurred but not with old-time violence, but their severity was increasing. Previously I had never exceeded one-twentieth grain *ter die*, but owing to the seeming urgency I gave her one-twentieth grain by mouth morning and noon, and one-fifteenth hypodermically in the afternoon. This was followed for one week without any toxic symptoms and with marked decrease of pain after the second day and entire freedom now for four days, this being the thirteenth day since my return. Previously she had not slept for weeks except an hour or two at night. In her old-time attacks she could neither eat nor speak, the muscular effort bringing on the spasm. She at present takes one-twentieth grain *ter die* by mouth.

The interesting points are the advanced age, the heroic doses, the absence of toxic symptoms, and, most important, the almost immediate relief from pain.

J. H. Greene, M.D.

[illegible]

Quinine in Suppositories.—Quinine, ten to twenty grains, in suppositories per rectum, gives good results without the production of the nausea, headache, singing in the ears, etc. It should be given in this manner in all cases of fever in which quinine is indicated, and especially in malaria and in the case of children. —T. Dunbar Brunton, *British Medical Journal.*

New Instruments.

A NEW URETHRAL SOUND.

By Charles C. F. Niesmann,

[illegible]

Sexual neurasthenia, atonic impotence, frequent emissions, premature ejaculations, imperfect erections and erections of short duration, are in many cases caused by an extremely hyperæsthetic prostatic urethra or by chronic prostatitis. Prostatorrhœa has a bad effect upon the mind of the patient believing himself the victim of spermatorrhœa. The most frequent cause for this condition is excessive venery or posterior urethral gonorrhœa.

The treatment with aphrodisiacs and sexual stimulants is contraindicated and in many cases very injurious.

"The most effective means of relieving the irritability of the prostatic urethra is the systematic introduction of full-sized steel sounds," Morrow's system, which overcome the hyperæsthesia and relieve congestion by distention and pressure and contact of the cold sounds. Most of these cases are complicated with spasmodic strictures, either from the nervous condition of the patient or from reflex irritations of the urethra. The passage of a cold sound will in a great many cases bring on urethral spasm resisting the farther introduction of the instrument, whereas a warm sound will pass quite easily. I have observed this condition often and have been led by it to devise this instrument. It can be passed warm and then be immediately cooled.

The instrument consists of four hollow sounds, Nos. 12, 14, 16, and 18 French, with one universal handle with two small tubes projecting for connection with a fountain syringe by a piece of rubber tubing.

The manner of using the sounds is obvious and needs little explanation. The handle is attached to the sound of proper size. It is warmed and passed into the urethra; a fountain syringe filled with ice water is attached, and the outflow tubing is shut off until the sound is full of water, when it is slightly opened.

I have had unexpected good results following this treatment, without internal medication except regulating the kidneys and alimentary tract, with hygienic and dietetic regulations.

The instrument was made for me by Messrs. Tiemann & Co., New York.

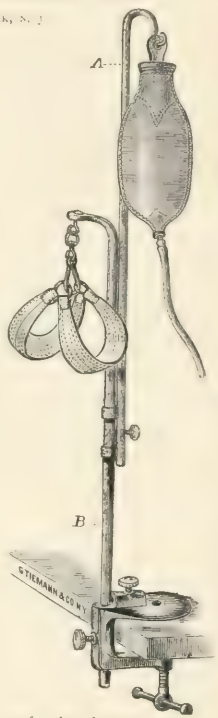
I will add my mode of lubrication. The usual way is to apply vaseline or some bland oil to the surface of the urethral instruments. Now the meatus, being the smallest part of the urethra, it rubs off and retains the lubricant, and beyond the orifice the instrument passes comparatively dry. Instead of oiling the instrument, I take an ordinary medicine drop-

per and draw it full of vaseline oil, slightly warmed; inserting its point into the meatus and holding the organ perpendicular, I press the oil into the urethra.

NEW SUSPENSION DEVICE FOR IRRIGATOR USED IN CONNECTION WITH THE EDEBOHLS LEG SUPPORTER.

BY HERMAN C. BLEYLE, M.D.,

NEWARK, N. J.



In order to do away with the inconvenience so often met with in the performance of gynæcological work at the homes of patients, in obtaining suitable means of suspension for the irrigator, the writer has had constructed by Messrs. Tiemann & Co., an extension rod, with hook, *A*, which when clamped on one of the upright bars of the Edebohls leg supporter, *B*, very effectively answers the purpose of furnishing needed suspension facilities. This device allows the operator to place the table in the most convenient position as regards light and his own comfort, and relieves him of the necessity of depending on some suspension point inconveniently situated. It can also be utilized in many of the usual surgical operations in which an ordinary table can be used and constant irrigation is required. The mechanism of the instrument explains itself.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 10, 1897:

	Cases.	Deaths.
Tuberculosis	164	109
Typhoid fever	10	0
Scarlet fever	107	7
Cerebro-spinal meningitis	1	1
Measles	150	2
Diphtheria	238	30
Laryngeal diphtheria (croup)	10	4
Chicken-pox	8	0
Small-pox	0	1

Aqua Tofana.—Murrell says that the aqua Tofana made and sold by the iniquitous Tofana or Tophiana, who is supposed to have poisoned with it more than six hundred people, including two popes, Pius III. and Clement IV., was made by rubbing white arsenic into pork and collecting the liquid which drained from it during decomposition. It is probable that in the process a ptomain or cadaveric alkaloid was formed, possessing properties of the highest degree of toxicity Long after Tofana's death it continued to be made at Naples and to be distributed secretly throughout Italy. It was used by Hieronyma Spara, an old fortune teller, who was presidentess of a society of young married women, whose diversion it was to poison their own and other women's husbands. Marie de Brinvillier's poison contained arsenic, and it was the active principle of the *poudre de succession* or inheritance powder for which at one time there was an extensive demand. —*Medical Brief.*

The Thumb and the Brain.—Dr. Burton Ward declares there is one infallible symptom indicating whether one is sane or not. Let a person speak ever so rationally and act ever so sedately, if his or her thumbs remain inactive there is no doubt of insanity. Lunatics seldom make use of their thumbs when writing, drawing, or saluting.

The Prognosis of Drug Habits.—The morphine habit becomes practically incurable in five years. The user of alcoholic spirits may continue eight or ten years before he reaches the incurable stage. This will depend on the free intervals between the time of using spirits. When he becomes incurable he may abstain, but the injured brain and nervous system never recover.—*The Quarterly Journal of Inebriety.*

To Remove Nitrate of Silver Stains from Clothing.—A solution of iodine in ammonia water, the so-called colorless tincture, will remove nitrate-of-silver stains from the hands, clothing, etc., but owing to the danger of the formation of nitrogen iodide, which is a powerful explosive, it is not recommended. A solution of iodine in iodide of potassium dissolved in water is nearly as quick and quite as effective. Dissolve fifteen parts of iodide of potassium in fifty parts of water, and to the solution add ten parts of iodine. When the latter is dissolved add sufficient water to make five hundred parts. Keep in a well-stoppered bottle. Treat the spots with this, and after a few minutes with a ten-per-cent. solution of caustic soda, which will remove the silver iodide formed by the first treatment.—*The National Druggist.*

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the United States Marine Hospital service during the week ended July 10, 1897:

SMALL-POX—UNITED STATES.

	Cases.	Deaths.
Brooklyn, N. Y. ..... June 26th to July 3d	1	
Pueblo, Col. ..... June 26th to July 3d	..	1
Gloucester, Mass. ..... June 11th to 25th	..	1

SMALL-POX—FOREIGN.

Montevideo ..... May 24th to June 5th	1	
St. Petersburg, Russia ..... June 4th to 19th	14	6
Moscow, Russia ..... May 24th to June 12th	4	
Odessa, Russia ..... May 12th to 19th	..	1
Kanagawa, Japan ..... May 25th to June 3d	2	
Sagua la Grande, Cuba ..... June 19th to 26th	60	
Calcutta, India ..... May 15th to 29th	..	17
Bombay, India ..... June 1st to 8th	..	16
Buenos Ayres, Argentina ..... April 24th to 30th	..	1
Nagasaki, Japan ..... June 7th to 14th	14	3
Montreal, Canada ..... July 3d	2	
Aden, Arabia ..... May 7th	27	5
Alexandria, Va. ..... May 28th to June 3d	..	4
Cairo, Egypt ..... May 25th to June 3d	..	5
Gibraltar ..... June 6th to 13th	1	1
Hong-Kong, China ..... April 24th to May 22d	..	23
London, England ..... June 5th to 12th	2	1
Madrid, Spain ..... June 9th to 16th	..	4
Warsaw, Russia ..... June 5th to 12th	..	2
Yokohama, Japan ..... May 20th to 27th	1	1
Cardenas, Cuba ..... June 2d to July 3d	..	1

CHOLERA.

Calcutta, India ..... May 15th to 29th	..	68

YELLOW FEVER.

Cardenas, Cuba ..... June 19th to July 3d	10	2
Matanzas, Cuba ..... June 18th to 30th	..	1
Sagua la Grande, Cuba ..... June 19th to 26th	4	
Bombay, India ..... June 1st to 8th	..	5
Rio de Janeiro, Brazil ..... May 29th to June 5th	2	2
Vera Cruz, Mexico ..... June 26th to July 1st	..	4

PLAGUE.

Hong-Kong, China ..... June 1st	4	
Taiwan, Formosa ..... May 31st	..	

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Original Articles.

JACKSONIAN EPILEPSY; ADENOMA OF LIVER; ACUTE ASCITES WITH TUBERCLE BACILLI.

BY A. JACOBI, M.D.,

NEW YORK.

A. A—— was born August 7, 1885, and died January 16, 1897. Her father was always in good health, her mother at one period of her life neurotic. Father's family was without any morbid taint; mother's ancestors died when seventy-five, eighty-five, and ninety years old. She is the youngest of ten boys and girls, none of whom died young. One sister died of cerebro-spinal meningitis, one of "fistula" after having been insane, one brother (the oldest in the family) was an army officer during the civil war and died insane. Of the seven now alive one, a man of great abstract learning and a college professor, with healthy children, is epileptic.

A. A—— weighed eight pounds at birth, sixteen when six weeks, twenty-eight when ten months old. Her first teeth (lower incisors) appeared at six months; the others, both temporary and permanent, came in due order and without any trouble. She walked when a year old. She was wetnursed, never perspired on the head, lost no hair, had no thickened epiphyses, her limbs were straight. The only symptom reminding of rickets was constipation, which appeared at the age of six or eight weeks, and required enemata until she was five years old. At three years of age she had whooping-cough; at four, measles; no other disease.

In September, 1891, she fell from a swing, hurting the left side of her head. She did not get pale or vomit; she cried, and appeared uninjured. In January or February, 1892, her right hand was noticed to twitch a little. In November she began to take music lessons; the twitching became stronger and more frequent, and the lessons were discontinued. On November 1, 1893, she had on waking in the morning the first hard attack of convulsions, probably with loss of consciousness. The second attack of the kind took place on the 16th. There was complete loss of consciousness and slow recovery. Thick, incoherent talk; slight paralysis of the right arm. During two days previously the child, who was remarkably observing and intelligent, had noticed fatigue and pain in her right arm, and told a playmate she was going to have an attack. On November 24th she complained of tiredness and numbness in both arms, more so in the left. She slept poorly during that night, and experienced slight twitchings in her right hand. Feeling an attack coming on at 6:30 A.M., she jumped up with the idea of preventing it. It was slight, with no loss of consciousness. Slight stiffness of legs. She said she had to hold on to the foot of her bed, as she was not quite steady. Afterward she felt absolutely well, and played all day. She had taken bromides two days; they were continued in moderate and later on in larger doses, so as to give rise to bromism repeatedly. Slight twitchings of the right arm in the night of February 18, 1894. March 9th, while running, she tripped and fell, striking her right arm heavily. She complained at once of twitchings, which, though slight, continued over an hour. She was put to bed, but she complained of their coming more frequently while she was lying down; tying a cord round the arm above the elbow made the twitchings stronger. She seemed very nervous and worried each time the arm twitched. When she was read to the shaking stopped instantly, and she was well all day. Evidently this attack had but partly the significance of the former ones. The right arm shook badly on waking April 4th, after she had been playing, skating, and falling several times the previous afternoon; again on April 13th and May 22d. During two days previously she had complained of fatigue and pain of her left hand. She had been writing a good deal, however, with her left hand previously, having been taught and accustomed to use her left hand in place of the right when the local convulsions began. Slight attack on the 27th, two on June 2d.

Most of the attacks would come on in the morning on waking up; they lasted mostly a few minutes, and were but rarely attended with unconsciousness. She would often laugh and joke immediately afterward. During most of the attacks, and often days before, the child was pale; sometimes she was irritable before or after them, in some instances for days. But very few times she had more severe attacks during her sleep, breathing heavily and shaking all over her body. Before she was taken to Europe in the summer of 1894, she had, however, only very few of these hard attacks. Up to this time, and also later, she enjoyed the occasional advice of Dr. S. Weir Mitchell, who saw her both in Philadelphia and in New York. Drs. Gowers and Jackson saw her in London. It was principally the former who objected strenuously to the performance of an operation, the advisability of which had been suggested.

During her European trip she was not changed. Slight attacks would come, mainly when she was, or had been, fatigued; five during August, 1894. After three slight ones, on her return, she had a fully developed epileptic attack in her sleep on October 26th. After a few slight ones, in January, 1895, the attacks ceased entirely while she was taking, first fifty, afterward sixty grains of bromides daily, together with lithia and valerianate of zinc. The bromides having disagreeable effects (as heaviness, drowsiness, bloated face), were discontinued June 8th, and valerianate of zinc only administered. Attacks returned—one on the 25th, two the 26th, three the 27th, four the 28th, six the 29th, four the 30th (wetted the bed the first time), six on July 1st (was given again bromides, 60 grains daily; zinc valerian, 30 grains; atropine, $\frac{1}{120}$ grain), six on the 2d and on the 3d, nine on the 4th and on the 5th, five on the 6th, and three on the 7th. The bromides again showing a disagreeable effect, they were diminished, and the daily medication consisted of 30 grains of the bromides, 15 grains of valerianate of zinc, 10 grains of zinc oxide, and $\frac{1}{100}$ grain of atropine.

No attacks until December 21st (slight) and 22d

(hard), after which she was given 60–70 grains of bromides daily, and 30 grains of valerianate of zinc, for one week. They were then stopped a while; the attending physician, who saw her often every day, changing the medication as circumstances appeared to demand.

During 1896 the case changed for the worse. There was a severe convulsion on January 2d; it began in the right arm, and was mostly confined to the right side. Unconsciousness lasted but a few minutes, but there was great weakness and numbness of the right arm. It is quite important to remark that her intellectual faculties suffered very much less than the arm from an attack. On the 3d there was a severe local convulsion of the right arm without any unconsciousness, and one slight attack each on the 15th, 16th, 18th (two attacks), and the 20th. On the previous night her pallor was excessive and her pulse feeble. In February she had twenty-one attacks of shaking or twitching of the right arm (one of the fingers of the right hand only) on ten days altogether. During March, 1896, the attacks, all of them localized, no general convulsions, became both more numerous and more severe. She had four on the 1st, five on the 2d, three each on the 3d, 4th, 5th, four on the 6th and 7th, six on the 8th and 9th, seven on the 10th, eleven on the 11th, fourteen on the 12th, twenty-seven on the 13th, twenty-six on the 14th, twenty-nine on the 15th, forty-nine on the 16th, twenty-five in the night of the 17th, twenty-six on the 18th between 7 A.M. and 9 P.M., twenty-eight on the 19th during the same hours, and nineteen in the following night. The last few days many of these local convulsions were attended with heavy breathing, the body was often drawn to the left while the right arm was drawn up or shaking, or both, and on the 19th the mouth was noticed to be drawn to the left.

It was on that day that Dr. Charles A. Dana saw the patient. To his kindness is due the following report:

"The patient was seen by me, March 19, 1896. She was a well-grown girl for her years, and apparently well nourished, but quite anæmic. Her mind was particularly bright and mature. She had a slight weakness of the right arm, but no paresis of the facial muscles or of the legs. The knee jerks on both sides were normal, not exaggerated on the right side. The right arm showed a certain amount of ataxia. There was an inability to place the finger easily on the tip of the nose with the eyes closed, or perform delicate muscular movements, such as buttoning the clothes or picking up small objects from the table. There was also a slight lack of localization sense, so that she could not determine exactly the point touched by the hand or arm. There was, however, absolutely no anæsthesia—no loss of touch, of pain, or of temperature sense. The elbow jerk was present. There was no atrophy or any tremor or spasmodic movement in the arm. The tongue protruded straight, and there was no asymmetry of the facial muscles. The patient had no concentric limitation of the visual field or aural field, no loss of sense of smell or taste, no pharyngeal anæsthesia; in fact, absolutely none of the stigmata of hysteria. There was simply the weakness of the arm, with ataxia and defect in 'motor touch,' such as is found in disease of the motor cortex. During the examination she had several slight convulsive attacks; the arm was extended, the forearm pronated, the hand flexed, and the whole arm separated somewhat from the side. The head was drawn over, to some extent, to the same side; but the eyes did not move. There was some twitching of the muscles of the face of both sides. There was no biting of the tongue, and had not been. The attack came on suddenly, and without cry or distinct aura; the patient asserted that it was not accompanied by loss of consciousness. It lasted only one or two minutes. After it was over the arm was for a time almost paralyzed, but after a few hours gained considerable strength. She would have a number of these attacks during the day. Shortly after my visits began they ceased, however, and the arm grew gradually stronger, less clumsy, and eventually she could use it nearly as well as the left, though never quite the same.

"The attacks were quite typical examples of a Jacksonian epilepsy. She had had at no time any severe headaches, no vomiting, and had no optic neuritis. The diagnosis at the time was Jacksonian epilepsy, due probably to some slight degenerative changes in a limited area of the motor cortex."

Under the direction of Dr. Dana she took, on March 20th, nitroglycerin, $\frac{1}{100}$ grain; and urethan, 5 grains, every two hours; bromides, 50 grains, through the day. She had thirteen severe attacks through the day (they had since becoming so numerous been more frequent during the day), and nine in the night; on the 21st forty-five and fifteen (bromides, 45 grains; urethan, 45 grains; nitroglycerin, 6 tablets of $\frac{1}{100}$ grain); on the 22d thirteen hard attacks and thirty-three slight twitchings from 6 A.M. to 10 P.M.; six times the right leg shook with the arm. There were four slight attacks in the following night. Medication—bromides, 35 grains; urethan, 50 grains; nitroglycerin, 7 tablets. On the 23d there were forty-nine slight twitchings between 8:30 A.M. and 10 P.M.; none in the night. Medication—bromides, 30 grains; urethan, 55 grains; nitroglycerin, 3 tablets. The child was much brighter and stronger. On the 24th there were twenty-one slight twitchings between 7:30 A.M. and 9:30 P.M. Medication—bromides, 30 grains; urethan, 60 grains. On March 25th and the following days the same medication and no attack whatsoever at any time. On April 1st albuminuria was noticed, and urethan was given in doses of 45 grains; on the 3d less albumin —urethan, 30 grains. This dose was continued. On the 6th there was hardly a trace of albumin and the appetite was good. At the same time daily doses of 30 grains of bromide were given; from July 5th to July 11th she took 25, after that 20 grains daily.

It should be here remarked that during the time of the greatest number and severity of the attacks large doses of bromides, up to 100 or even 120 grains, were given daily, with or without the valerianate of zinc, and had often to be discontinued because of serious bromism. The only time in which the attacks ceased and the patient felt better at the same time was when she took urethan.

She continued this medication while in the Catskill Mountains all summer, 1896. Her general condition did not improve; she lost flesh and was pale, though in fairly good spirits most of the time. The amount of albumin in her urine, which was considerable while she was having her attacks, diminished. But while there was hardly a trace and sometimes none in the middle of the summer, there was constantly a small quantity of bile in the urine. In October I saw her. She was in bed, pale (she never was icteric), with anorexia, and a frequent pulse. She improved somewhat until in November she felt better, took drives, and with slight support once walked ten blocks. Then her general condition, however, changed for the worse, without any fever or other tangible symptoms. I saw her with Dr. Dana on December 1st. During that month she grew thinner and paler. On December 28th her nurse noticed some swelling of the abdomen, which had been rather sunk and lean. That swelling was observed plainly by the mother and by Dr. Dana on January 2, 1897. It was considered to be due to obstruction of the bowels; a high enema brought away a peculiar substance, mixed with some blood, of greenish color and offensive odor. The temperature was

but slightly raised, and there was no pain. Within one or two days the abdominal cavity filled up with fluid, the diaphragm was somewhat impeded in its motion, respirations increased to 30 and 36. No anasarca, no local œdema anywhere. The abdominal veins were very numerous and dilated, but there was no caput medusæ.

A few days afterward her (moderate) dyspnœa became a little less annoying; the abdomen appeared a little less tense, and the veins somewhat smaller. Still this apparent temporary improvement did not last, and in a very few days the general condition suggested the necessity of an operation, the beginning of which was to be a laparotomy. Dr. McBurney joined Dr. Dana and me in a consultation. The suddenness of the abdominal effusion suggested the presence of a thrombosis of the portal vein, or the presence of a tumor of some kind, perhaps tuberculous lymph bodies, compressing the portal vein. The spleen had been made out to be large the previous week; the liver appeared somewhat swollen. Some solid or semisolid masses could now and then be felt, but we could not be certain whether we had to deal with normal or inflamed and adherent intestines, or neoplastic growths, or peritonitic exudations. During all this time her strength gave way slowly, with very poor appetite and a urine which, after having been copious, had become scanty and dark. In the last few weeks its specific gravity ranged from 1.025 to 1.033, its urea about 0.031 in 1 c.c. It contained a faint trace of albumin, no sugar, little oxalate of lime, very little bile, a large amount of urates and phosphates, some bladder epithelium, and some little pus and mucus.

Laparotomy was performed by Dr. McBurney on the 10th. There was a gallon or more of a thin yellowish fluid in the abdominal cavity. Its specific gravity was 1.011; it contained but little albumin and few salts. These examinations were made of specimens of fluid which were removed when the discharge was about half finished. The spleen was found to be large, the liver of moderate size; there were no adhesions between the intestines, or between them and the abdominal wall or the viscera. No large neoplasms. The omentum was in good condition, the mesenteric glands were not swollen; the glands surrounding the portal vein were felt to be enlarged, so as to form a thick mass encircling and pressing on the vein.

The surface of the liver was shining and covered with very numerous yellowish-gray bodies. They were of different sizes, from the head of a pin to a bean. Those of the latter size were felt reaching far down into the liver tissue. They were taken to be tuberculous.

Many specimens of the abdominal fluids were centrifuged and stained, and examined for tubercle bacilli or other microbes. One in six such specimens yielded large quantities of bacilli tuberculosis in close proximity to each other.

The general condition of the patient did not improve after the operation. Her temperature was never over 100.8° F. in the axilla, usually 100° or less, down to 98.8° F.; the respiration remained between 30 and 36; her pulse rose until on the day of her death, January 16th, it reached 158, but little influenced by stimulant subcutaneous injections which were continued until about twelve hours before she died.

The autopsy was made on January 17, 1897, twenty-four hours after death, by Dr. James Ewing. The following report is mostly from his pen. By his painstaking investigations extending over many weeks he has placed me under lasting obligations.

Report of Autopsy.—Body that of a moderately well-nourished, distinctly anæmic child. Rigor mortis slight. No œdema or jaundice.

Heart: Pericardium normal. Right chambers moderately distended with clotted blood. Left chambers contracted, nearly empty. Valves, muscle, endocardium normal. No dilatation or hypertrophy.

Lungs show considerable venous congestion and œdema. Bronchial nodes deeply pigmented, not tuberculous. Pleural cavities contain a few drachms of serous fluid.

Peritoneum: Intestinal walls uniformly anæmic; peritoneal coat is slightly dull and in places granular. In pelvic cavity, about drainage tube, are a few drops of pus, and a light purulent coating over adjacent coils of intestine. Parietal peritoneum shows evidences of intense venous congestion, presenting large patches of superficial dark and bloody infiltration. No miliary tubercles are anywhere seen, after close scrutiny.

Liver: Size about normal; surface and section dotted with very numerous light yellow nodules, from pinhead to pea sized, very sharply outlined from the surrounding tissue. Some of these nodules project slightly above the peritoneal surface. They are not caseous, but otherwise closely resemble miliary tubercles. There are many less on the surface than in the interior. The hepatic tissue shows very distinctly the gross appearances of chronic congestion, the centres of the lobules being very deep red and depressed, the peripheries very light colored, but no blood oozes from the sections.

Gall bladder: Contents and mucosa appear normal.

Spleen considerably enlarged, four to five inches long, consistency firm. On section the Malpighian bodies appear very prominently set off from the deeply congested pulp tissue.

Kidneys show moderate venous congestion, but are otherwise normal. Adrenals normal. Pancreas normal. There is marked superficial congestion of ovaries, otherwise the genital organs are normal.

Intestinal mucous membrane appears normal. The solitary follicles are only faintly visible. The stomach is moderately congested and coated with mucus.

On opening the peritoneal cavity attention was at once directed to the condition of the portal vein. The gastro-hepatic omentum was found much thickened and very firm, the enlargement proving on dissection to be due to swelling of the periportal lymph nodes, four or five of which, measuring from five centimetres to one centimetre in diameter, formed a nearly continuous mass along the portal vein. Undoubtedly these nodes during life produced considerable narrowing of the lumen of the vein. On removing the liver and a portion of the diaphragm, an enlarged lymph node, measuring one centimetre by one and one-half centimetres, was found lying immediately above and adherent to the hepatic vein at its junction with the vena cava. It was hard, and its capsule covered with large veins, so as to look almost angiomatous. It did not seem possible that the hepatic vein could have escaped partial compression by this considerable mass of tissue. On section these lymph nodes appeared deeply congested, but were not tuberculous. No thrombi were found in either the portal or hepatic veins. The mesenteric nodes were not enlarged.

Brain rather large, the convolutions not flattened. Pia mater opaque, whitish, thickened, and rather hard over a large surface; moderately congested, mostly so over the region of the motor centres. This change was more perceptible on the left side than on the right. In this neighborhood the convolutions are rather separated from each other and felt hard. This condition was suggestive of interstitial swelling in the white substance. The structure of the brain appeared normal everywhere, the ventricles were empty, the plexuses normal.

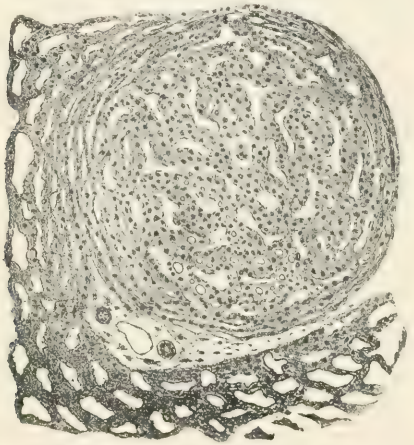
The left half of the cranium was smaller and flatter than the right.

Over the left motor centre there was a defect in the

structure of the bone, one and one-fourth centimetres wide and two and one-fourth centimetres long, in a forward and downward direction. The bone was translucent, its outer surface quite smooth and on a level with the rest of the cranium, its inner surface depressed. This depression was quite sharp, as in craniotabic defects. There were two more such defects on the same left side, in a forward direction, quite as wide but shorter, about three centimetres from the median line. One more such spot was found over the left brow; another was located over the left motor centre, one and one-half centimetres long and one and one-half centimetres wide. The space of the large fontanelle, two and one-half by three centimetres, was occupied by hard, thick, and rather irregular bone, which was surrounded by a narrow (about three-fourth centimetre) semitransparent area. To the left of this, and rather forward and adjoining the coronal suture, was a triangular osseous island, also flanked by a transparent area.

The impressiones digitatæ and Pacchionian depressions were more pronounced on the left side.

On the occiput, where a trauma was sustained five years previously, no abnormal condition was observed.



The pia was moderately congested, and over the whole convexity was considerably thickened and opaque. The brain tissues appeared normal. The thickness of the parietal bones varied greatly, especially along the sagittal suture.

Microscopical Examination.—The liver shows the usual lesions of advanced chronic congestion, with complete atrophy of cells at the centres of lobules, and slight fatty degeneration of cells at the peripheries of lobules.

The small nodules above described prove to be miliary adenomata. They are composed of thick cords of hypertrophic liver cells, usually containing more than one nucleus, and at some points showing considerable fatty infiltration. The larger adenomata are surrounded by a distinct fibrous capsule, within which effects of chronic congestion have not been felt, as the capillaries of the adenomata are not at all widened.[1] The cords of liver cells surrounding the nodules are much compressed for a considerable distance (see figure).

The lesions in the lymph nodes include:

1. A chronic inflammatory hyperplasia, with the production of new connective tissue, extensive exfoliation of endothelial cells, and atrophy of lymphoid cells.

2. An extreme dilatation of veins and capillaries, both within and without the nodes.

The inflammatory process has replaced considerable portions of the nodes by a tissue apparently composed of flattened and fusiform endothelial or connective cells, and entirely lacking in lymphoid cells. In these areas the capillaries are often dilated and gorged with blood. The lymph nodules are all quite small, and many appear to have been replaced by the above tissue. There is a slight deposit of anthracotic pigment in the fibrous tissue. The large neighboring veins are enormously dilated, and possibly increased in number, so as to give an appearance not unlike that of a cavernous angioma. The venous stasis has likewise affected the vessels within the nodes, the medullary lymph cords being entirely absent and replaced by dilated blood spaces or fibrous tissue. The condition of the lypmh nodes indicates a process of older date than that of the changes in the liver.

The mesentery shows œdematous infiltration, and about some small vessels are collections of mononuclear and polynuclear cells.

The spleen shows the effects of chronic congestion equally marked with those of the liver. The sinuses are much dilated, and the pulp cells contain a large deposit of blood pigment.

The intestinal wall shows a light coating of fibrin with exfoliation of endothelial cells.

The ovaries and Fallopian tubes show venous congestion, but no other lesion.

Brain: The motor cortex of both sides was cut in thin slices and hardened in saturated watery solution of corrosive sublimate.

Sections stained by Nissl's method gave very unsatisfactory results, owing to advanced post-mortem changes. As nearly as could be judged, the motor areas of both sides were identical in appearances, including the numbers and configuration of the cells, and the character of chromatophilic bodies and intracellular network. The pia of both sides was considerably thickened, that over the left motor area very much so.

Some capillaries were found containing colonies of cocci.

The ganglion cells of the cranial nerve nuclei (XII., X., IX. examined) showed no unusual appearances by Nissl's stain.

Bacteriological Examination.—A portion of one of the superficial adenomata, including a section of the capsule of the liver, was inserted beneath the skin of a guinea-pig. Seven weeks later no inflammatory changes were to be found at the point of inoculation or in the adjoining lymph nodes.

A similar negative result followed the inoculation of another guinea-pig with a swab from the fluid and pus in the bottom of the drainage tube. The fluid in the drainage tube, smeared on cover glasses, showed the presence of numerous cocci in masses and short chains. Pure cultures of staphylococcus pyogenes aureus and of streptococcus pyogenes, of marked virulence, were secured by Dr. Charles Norris from this same fluid.

The fluid from the drainage tube and sections of the intestinal wall, mesentery, liver, spleen, and lymph nodes were stained for tubercle bacilli with a negative result.

The serosa of the inflamed intestines contained cocci in moderate numbers.

The spleen contained large numbers of minute colonies of cocci, and in the motor cerebral cortex and in a lymph node single colonies of cocci were observed.

Diagnosis.—Chronic inflammatory hyperplasia of

[1] In this respect our specimen differs from the majority of the few cases which have been described. In them the liver-cells were thoroughly compressed and destroyed by copious interstitial tissue, and new cells were developed through a compensatory process.

periportal and perihepatic lymph nodes, of undetermined origin. Partial compression of hepatic and portal veins. Chronic congestion of liver and portal viscera. Multiple miliary adenomata of liver. Ascites. Peritonitis. Tubercle bacilli in the fluid. Septicæmia.

Epicritical.—From the pathological standpoint the obscure feature of the case is the relation of the swelling of the perihepatic lymph nodes and the condition of the liver. In the absence of any other adequate cause it is necessary to conclude that the advanced chronic congestion of the liver was due to a compression of the hepatic vein from the enlarged lymph node lying above and upon this vein. It then becomes necessary to discover a cause of this hyperplasia of the lymph nodes, which, with the periportal nodes, were the only ones in the body thus affected. Several possibilities may be suggested. It is possible that the lymph nodes were subjected to chronic irritation from intestinal toxæmia, in which case it is difficult to see how the mesenteric nodes could have escaped, as they did, a similar irritation and hyperplasia. The probability of a serious retrograde irritation from the thoracic chains must be regarded with caution, since the thoracic nodes were not enlarged, and the bronchial nodes showed only moderate pigmentation. The deposit of pigment in the perihepatic node was very slight and apparently quite insufficient to induce the lesion found in the node. Nevertheless such a possibility may be entertained.

Cholecystitis could have affected the periportal nodes, and suppurative lesions in this viscus commonly do so; but there were no evidences, either gross or microscopical, of any disease of the gall bladder. The considerable size of some of the adenomata (one-half centimetre in diameter) suggests that these may have been the primary lesions, and that the disordered condition of the hepatic circulation and function led to the hyperplasia of the lymph nodes draining the organ. While there is no positive evidence on which to deny such a course of events, many recent studies of nodular hyperplasia of the liver tend to show that this lesion usually represents a regenerative tendency, well marked in liver cells, to replace disordered or destroyed hepatic tissue by way of compensation. No other cause for liver congestion can be found in our case in heart, pleura, or lungs. Some extensive studies of this character have been contributed, as follows:

Flock: "Ueber Hypertrophie und Neubildung der Lebersubstanz," *Deutsches Archiv für klinische Medicin*, 1895, Bd. lv.

Marchand: "Ueber Ausgang der acuten Leberatrophie in multiple knotige Hyperplasie," Ziegler's *Beiträge*, 1895, Bd. xvii., p. 206.

Meder: "Ueber acute Leberatrophie mit besonderer Berücksichtigung der dabei beobachteten Regenerationserscheinungen," Ziegler's *Beiträge*, 1895, Bd. xvii., p. 143.

Therese: "Des adenomes du foie," *L'Union Médicale*, 1895, No. 34.

Babes et Manicatide: "Les proliférations des cellules hépatiques dans les differents affections du foie," Ref. in *Centralblatt für Pathologie*, etc., 1896, No. 23.

The very general distribution of the nodules in the present case, and the fact that they represented areas of apparently normal liver cells—in the diagram the presence and absence of these cells in adjoining territory is beautifully represented—in which the effects of the chronic congestion were not at all noticeable, seems to support strongly the view that these miliary adenomata were entirely the result of the advanced chronic congestion and atrophy of liver cells which affected the entire organ.

As already stated, moreover, the lesion in the lymph nodes appears to have been probably of older date than the adenomata of the liver.

Pressure on the hepatic vein having been once established, thereby obstructing the venous return from the nodes themselves, it is readily seen how the course of events should lead to exactly the condition found at autopsy.

The peritonitis and septicæmia which terminated the case may properly be regarded as the natural and very frequent result of the sudden relief of pressure from the abdominal viscera, especially the intestines, allowing the passage of intestinal bacteria into the peritoneum, and apparently also into the general circulation. The intestinal lumen contained a very abundant growth of cocci: the streptococcus and staphylococcus were isolated from the peritoneum, and bacterial thrombi composed of cocci were found in the spleen abundantly, and in the brain and lymph nodes.

This consideration affords also a clew to the presence of tubercle bacilli in the serum contained in the abdominal cavity. They are transferred through the circulation, either of the blood or of the lymph. The latter would start from lymph nodes which were, however, nowhere affected, nor was there any organ or tissue infected with tuberculosis. Therefore the presence of tubercle bacilli can be explained by transmission through the blood current only. Evidently they were only a complication, an incident. When the rapid effusion took place from the blood-vessels of the peritoneum and the intestine, where the bacilli happened to be located, without having given rise to local or general symptoms, the vessels were emptied of a thin serum—of 1.011 specific gravity—with all its contents. The alkaline fluid in the abdominal cavity proved an excellent nutrient and a preservative for the bacilli.

The presence of bacilli in the ascitic fluid, in the absence as well of tuberculous deposits or degenerations anywhere as of lesions in the intestine which could be charged with admitting the microbes into the circulation, is no longer an improbability, since it has been proven that surface lesions of a mucous membrane are not required to admit tuberculosis, nor hiatuses in the epithelial covering, which, for instance, are possessed by the tonsils (Stoehr) in their normal state. It has been known for some time that initial lesions in the lungs, for instance, need not correspond with the localities of original affections, for pulmonary infiltrations will follow the subcutaneous injections of bacilli in distant places. Koch proved that lymph bodies may become diseased without affections of their roots. Solid particles are known to penetrate the lungs. The spores of saprophytes and of anthrax are so admitted. Whether this happens more readily in children, whose organs are less changed by the solid results of previous morbid processes, remains to be seen. Bollinger and Heller demonstrated that tubercle virus may penetrate through intact tissue, and that it is not necessary to assume, with Babes, that cocci prepared the soil for absorption. The tubercle bacilli in the ascites of our case would, therefore, be explained in one of two ways. They were, before entering the abdominal cavity, contained either in the circulating blood or in the intestinal tract. The former is very improbable, for there were no miliary deposits anywhere. The presence of bacilli in the intestinal tract is explained by the facility of their admission in food. It is probable that there are but few intestinal tracts but are harboring bacilli now and then. It is under favorable circumstances only that they are absorbed instead of being expelled. Such favorable circumstances are either the presence of local lesions or sudden changes of osmosis. The latter existed in our case.

The local cranial defects remain unexplained. If

they had been found in the skull of a baby less than six or ten months old, they would certainly have been claimed as rachitical. Craniotabes, however, when the rachitis has disappeared, never leaves behind it these attenuated circumscribed spots. There was no symptom of rachitis in the patient when an infant, except constipation. There was, moreover, no tumor, no thickening inside to explain a local absorption of such circumscribed character. I prefer to point to this instance of defective local bone development on some other than rachitical basis.

It has been noticed that the pia and the surface of the brain exhibited marked alterations from the normal, but none so localized as to explain the spasmodic symptoms constituting the very picture of what we mean by the term Jacksonian epilepsy. The advisability of an operation undertaken to find and remove its local cause was often considered by the medical men who studied the case. It never was urged by any one, it was advised against by some. Nothing that is positive can be learned by this feature of the case, except the necessity of care and caution and prudence.

A therapeutical remark will not be out of place. It has been seen that the bromides would sometimes be required in such quantities as to interfere seriously with the general health of the patient. When the doses of urethan, recommended by Dr. Dana, were given persistently, the convulsive attacks ceased very soon, never to return, and there were no disagreeable symptoms attributable to the remedy.

FELONS AS MEDICAL PRACTITIONERS IN NEW YORK.

By W. A. PURRINGTON, Esq.,

NEW YORK.

In 1887, after three years of effort, conflicting views and interests were sufficiently harmonized to secure the enactment in New York of chapter 647 of the laws of that year, which is substantially the present medical law of this State.[1] Section 6 of that act introduced this new provision into the law: "No person shall be licensed or permitted to practise physic or surgery in this State who has been convicted of a felony by any court of competent jurisdiction; and if any person who is or hereafter shall be duly licensed to practise physic or surgery in this State, shall be convicted of a felony, as aforesaid, his or her license to so practise, if any, shall be revoked by the fact of such conviction having been had. Any person . . . who, after conviction of a felony, as aforesaid, shall attempt to practise physic or surgery in this State, . . . shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than $250, or imprisonment for six months for the first offence, and upon conviction of a subsequent offence, by a fine of not less than $500 or imprisonment for not less than one year, or by both fine and imprisonment."

Minimum punishments established for the unlawful practice of medicine by others than felons were a fine of $50 for the first offence, and one of $100 or imprisonment or both for the second; the maximum fine for either offence being the ordinary maximum in cases of misdemeanor, viz., $500. Thus while a convicted felon could not be punished by a greater maximum fine than any other illegal practitioner, the offences of both being misdemeanors, neither could he, on the other hand, receive so light a sentence as he might except for such previous conviction.

[1] For a review of medical legislation in the State of New York, prior to 1887 see the MEDICAL RECORD of October 23, 1886, vol. 30, No. 17.

When the bill came before the governor he favored its general purpose, but suggested that this new provision might work hardship in individual cases; instancing a medical practitioner recently pardoned by himself—an unfortunate illustration, as the event has proved, for the man has been again convicted of felony.

The brief then submitted in behalf of the State and county medical societies, in arguing the constitutionality of the law, cited the test-oath cases in the United States supreme court, and said: "Both the prevailing and dissenting opinions hold that any proper qualifications may be required of professional men, that do not constitute a penalty for an act not so punishable when committed." And in enumerating the classes which would benefit by a veto, the brief mentioned as one of them "convicted felons, who, as in the case of one now in New York, may serve as many as three terms of imprisonment for criminal malpractice and return to 'renew business at the old stand.'"

By chapter 661 of the laws of 1893 the commissioners of statutory revision, one of whom had been consulted upon and was familiar with said enactment, codified the laws relating to public health into chapter 25 of the general laws, which re-enacted the provision in question, by these words in section 140: "Nor shall any person practise medicine who has ever been convicted of a felony by any court," and these words in section 153: "Any person . . . who, after conviction of a felony, shall attempt to practise medicine, . . . shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than $250, or imprisonment for six months for the first offence, and on conviction of a subsequent offence, by a fine of not less than $500, or imprisonment for not less than one year, or by both fine and imprisonment."

This codification, however, while forbidding medical practice to the unlicensed and unregistered citizen, provided therefor neither fine nor imprisonment, but only a civil penalty. Whether this omission, specifically to inflict the fine theretofore imposed by the laws codified, removed ordinary illegal practice from the class of misdemeanors, was a question on which opinions differed; but it was never submitted to the courts nor need it be discussed here, for, whether it did or not, the convicted felon still remained liable to a greater minimum punishment than non-convicts in *pari delictu*.

By chapter 398 of the laws of 1895, section 153 of said codification was so amended as to provide that "any person who, not being then lawfully authorized to practise medicine within this State and so registered according to law, shall practise medicine within this State without lawful registration or in violation of any provision of this article; and any person who, . . . after conviction of a felony, shall attempt to practise medicine, or shall so practise, . . . shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not more than two hundred and fifty dollars, or imprisonment for six months for the first offence, and on conviction of any subsequent offence, by a fine of not more than five hundred dollars, or imprisonment for not less than one year, or by both fine and imprisonment."

Thus this amendment of 1895, which is the existing law as to penalties, by its new provisions punishes all illegal practitioners alike, whether felons or merely non-licentiates, by a fine which cannot exceed for the first offence $250, or half the maximum fine imposed on misdemeanants by the penal code and theretofore by the various medical laws codified.

Such being the law in 1896, Benjamin Hawker, alias Perry, alias West, was tried under it upon an indictment setting forth, as reported, only two facts: (1) that he had been convicted in 1878 of the crime of

abortion, and sentenced to ten years in the penitentiary; (2) that he afterward unlawfully practised medicine in the city of New York upon a certain woman on the 22d day of February, 1896, against the form of the statute, etc.

To this indictment defendant demurred, upon the ground that these facts did not constitute a crime; contending that the statute was only prospective, or, if retrospective, then, as to him, unconstitutional, in that his conviction of felony, having been had prior to its taking effect, the law was *ex post facto*, as creating a new penalty for an offence for which he had been already punished.

The demurrer was overruled and defendant thereafter convicted and sentenced upon his admission of the truth of the facts pleaded. On appeal the appellate division, by a divided court, sustained his contention; the prevailing opinion holding that the law as applied to the case of a physician convicted of felony before it took effect is *ex post facto*, and therefore unconstitutional, in that it does provide a new penalty for his crime by depriving him of his license to practise medicine, which is in the nature of a property right, not forfeited by a conviction of felony prior to the time this law took effect.

The opinions of the court [1] are noteworthy expositions of much argued topics, and deserve quotation at length.

Upon the point of legislative power to require good moral character as a preliminary qualification for admission to medical practice, the prevailing opinion laid down the premise that such a test must relate to present status, and must not debar a wicked man, turned away from his wickedness committed prior to the law's enactment, from practising medicine in a lawful and right fashion. Said the court,[2] the italics being ours:

"Assuming for the purposes of the argument that the legislature may require, *for the continuance in the practice of medicine*, that the practitioner shall possess professional knowledge and skill and also *good moral character*, it is obvious that *such requirement must relate to a present status or condition of a person coming within the terms of the act.* The law under which this appellant was indicted does not deal *with his present moral character.* It seizes upon a past offence and makes that, and that alone, the substantial ingredient of a new crime, and the conviction of it years ago the conclusive evidence of that new crime." And later:[3] "The design of the act is, therefore, fully apparent. No matter how praiseworthy the motive may be, *it is meant to deprive one class of persons, otherwise lawfully engaged in the exercise of a right, of that right because of past occurrences, 'many of which are in no wise associated with their professional pursuits,'* for this act strikes at the unfortunate man who in his youth may have violated the law, and, without real evil intent, have committed and been convicted of any felony and pardoned the very day of his conviction, as well as the hardened criminal, guilty of as foul an offence as that of which this appellant was convicted. The underlying purpose of the act may be to purge the medical profession of members unworthy of confidence, but the real effect is to accomplish that by inflicting an additional punishment through a newly created offence inseparably connected with the anterior crime, and thus bring about a result the constitution forbids, no matter in what form the statute is drawn."

Upon the point of Hawker's status at the time of his conviction of felony in 1878, and the ineffectiveness of that conviction to deprive him of his "right" to practise medicine, the court said:[4]

"*He had absolutely the right to practise medicine the day before the statute was passed.* His former conviction entailed the punishment of imprisonment and disfranchisement as a voter, but *it did not take away from him his property in the right to earn his living on the expiration of his imprisonment by engaging in the profession of which he was and is a member.* His civil rights were not extinguished, but only suspended, during his imprisonment (2 R. S. 701, § 19; Penal code, § 710). *That his right to so engage in that profession is in the nature of a property right cannot be disputed. It is not a mere revocable license.* As is said in the *Dent* case (*supra*),[1] in this country 'all vocations are open to every one on like conditions. All may be pursued as sources of livelihood, some requiring years of study and great learning for their successful prosecution. The interest, or, as it is sometimes termed, the estate acquired in them, *that is, the right to continue their prosecution, is often of* great value to the possessors *and cannot be arbitrarily taken from them any more than their real or personal property* can be thus taken.' That means that if it is taken away it must be for cause."

Of the five justices sitting at the argument, three concurred in this prevailing opinion and judgment was reversed.

The fifth justice dissented, upon the ground that the exclusion of felons from practice by the act was not the infliction of a new penalty for an old offence, but merely the establishment of a test of moral fitness for the practice of medicine, not in itself more arbitrary than the test of general qualification to practise held constitutional in the Dent case, viz., that continuous medical practice within the State for ten years prior to March 8, 1881, should be equivalent as evidence of qualification to a diploma or certificate of successful examination before the board of health.

There is, however, a distinction here that the learned justice did not comment upon; for while it is quite true that to accept any term of practice within the State as a test of qualification to continue so to practise is arbitrary, and conceivably absurd, yet such continuous practice was not the *sole* test under the West Virginia statute, which permitted any one to acquire a right either to begin or continue to practise by showing his qualifications through examination or by diploma; while under our health law the felon is absolutely barred from practice.

The dissenting justice was also of opinion that in pointing out the hardship conceivably resulting to a convict of present moral life, the prevailing opinion rather criticised the propriety of the legislative test than adduced a reason for declaring it unconstitutional; and he might well have pointed out also that it is not more severe to debar a person from practice for a past felony than it is to close the door of hope and leave no *locus pœnitentiæ* for future offenders; as to whom the prevailing opinion admits that the law is constitutional.

Finally, the dissenting justice, like his colleagues, also assumes that Hawker was at the time of his conviction in 1878 a licensed physician, and therefore says,[2] after reciting the right of the State to make necessary health regulations: "I do not understand that they" (such regulations) "are necessarily *ex post facto*, because rights of the individual that existed prior to the passage of the law that creates the restriction are curtailed. I suppose that if an act was passed requiring that those having a contagious or infectious disease should be isolated so as to avoid communicating

[1] Reported in 14 App. Div. 188.
[2] At p. 192.
[3] At p. 190.
[4] At pp. 190, 191.

[1] Dent *vs.* West Virginia, 129 U. S. 114, holding constitutional a statute establishing, as one test of fitness to practise, the fact that the licentiate had practised medicine within the State of West Virginia "continuously for the period of ten years prior to the 8th day of March, 1881," and affirming the conviction of one who had practised in the State for only five years.
[2] At p. 194.

the disease, the fact that such disease existed prior to the time of the passage of the act would not make the act *ex post facto*, and so unconstitutional, nor would such isolation or control over a person who has such a disease be a punishment for having the disease:" etc. To which the answer would seem to be that a man is isolated because he has the disease, not because he has had it—the argument of the prevailing opinion on this point only being that a previous conviction of felony is not more conclusive proof of a present immoral character, than the scar of small-pox is a sure indication of a present contagion.

Thus it appears that all the judges of the appellate division assumed, and were entitled upon the briefs of counsel to assume, in their premises, as a fact of record, that in 1878 Hawker had a right to practise medicine, and upon that assumption their reasoning is based.

And their conclusions are,[1] the italics being their own: "*First*, that the provision we have considered of the public health law *is constitutional* so far as it operates prospectively and upon persons convicted of felony after its passage. *Second*, that it *is unconstitutional* in as far as it applies by its terms to persons so convicted before the law went into operation."

But the court of appeals has now reversed the appellate division's judgment and affirmed the judgment of conviction, upon the sole point, apparently, that, *so far as the record shows*, Hawker never was a physician, and therefore was not deprived by the statute of a right to practise medicine—a point that does not appear to have been raised at all by the briefs of counsel.

The prevailing opinion in the court of appeals,[2] where also there is dissent, holds that the statute is clearly retrospective, and admits that, if it enhanced defendant's punishment for his felony committed prior to its enactment, it would be as to him unconstitutional.

But it goes on to say,[3] the italics again being ours: "It is not contended that the law in question makes any change with reference to the felony of which the defendant was convicted, *or that there has been any aggravation or change, with reference to the punishment provided therefor. What has been done is the creation of a new offense, a misdemeanor after a felony dependent upon acts thereafter committed in violation of the statute* and providing a punishment for such misdemeanor. It is in the nature of providing punishment for a second or an additional offense, and it is claimed, with reference thereto, that it operates to deprive the defendant of his rights of property, of his right to earn a living by the practice of medicine, and that, by being deprived of this right, the effect is to aggravate his punishment for the felony. *The difficulty, however, with this contention is, that it does not appear from the record in this case that he ever had any right to practise the profession of medicine, and that no presumption can be indulged in to that effect.* . . . It does not now appear that he ever studied medicine a day in his life; that he ever received a diploma from any medical college or university; that he was ever registered or licensed to practise medicine, or that he ever did practise before the 22d day of February, 1896, the day of the charge upon which the indictment in this case was founded. So that there is an entire absence of any evidence showing, or tending to show, that he was deprived of any rights of property, or of means of earning a livelihood, that he theretofore enjoyed and possessed."

And after asserting the legislative power to require good moral character as a test of fitness to practise medicine, the opinion concludes thus, the italics once more being ours:[4] "If, therefore, the legislature may impose conditions upon which persons of good moral character shall engage in the practice of medicine, and may impose a punishment for all persons violating the conditions, it appears to us that the legislature may also prohibit from practising a person who has been convicted of a felony, whose character is presumed to be bad, *who has never before studied or practised medicine, and who has not conformed to a single condition or requirement of the statute under which other persons are licensed to practise.* The defendant has been deprived of no rights secured to him either by the United States or State constitutions."

As there is no dispute that the statute can and does prohibit from practising a person who has never studied medicine, regardless of whether he is a felon or a Christian gentleman, this opinion would be clearer if the italicized words last quoted were omitted. They only cloud, if they do not evade, the question sought to be raised, the statement of which is simple enough. —Can the legislature, under its admitted power to provide a test of the moral fitness of licentiates in medicine, exclude by a general law all convicted felons from the ranks of the medical profession?

Only two out of the seven judges of the court of appeals seem to have concurred in the reasoning of its opinion; for two concurred[1] "*in result solely on the ground that the record contains no evidence that the defendant at the time of his conviction, or at any other time, was a physician;*" from which it is to be inferred that they approved the reasoning of the prevailing opinion of the appellate division, and would have voted to sustain its conclusion had Hawker appeared by the record to have been, when convicted in 1878, a licensed physician. The remaining two judges dissented and voted to affirm the judgment appealed from, showing that in their minds the conviction could not be sustained merely because of the record's failure to show that the defendant was ever a licensed practitioner, but must depend solely upon the allegations and proof, viz., that defendant after conviction of felony in 1878 practised medicine in 1896; that the illegality of the practice under the allegation was due solely to the former conviction of felony and not to the failure to prove a license and that in so far as the law made such previous conviction an element of the offence it was, in their opinion, *ex post facto*, regardless of whether Hawker was a physician in 1878 or not.

The conclusions from all this seem to be:

(1) The final judgment against Hawker is a chance result due to an explicable oversight in making the record—an oversight scarcely to be criticised or wondered at, since it seems to have escaped the observation of all the able counsel in the case, for defendant as well as for the prosecution, of the careful trial judge as well as of the learned justices of the appellate division. The point upon which the court of appeals decides the case is, as already said, one not raised by counsel; nor could it have been fairly raised by the prosecution, which evinced no desire to take any advantage of it; just as in the Dent case counsel waived technical defects in the record in order that the highest court might pass upon the substantial question sought to be raised. The oversight, as already indicated, is this: That the indictment merely alleges two facts: (*a*) The conviction of Hawker, in 1878; and (*b*) that afterward "he unlawfully did practise medicine," etc. The intent of the prosecution was, of course, to test the question whether any *person* convicted of felony might thereafter practise medicine. But unfortunately the indictment's allegation that Hawker unlawfully practised medicine contrary to the form of the statute, has been held to be a good pleading of the ordinary misdemeanor of unlicensed practice, quite apart from any question of felony, and de-

[1] At p. 193.
[2] 152 N. Y. 234.
[3] At p. 240.
[4] At p. 243.
[1] At p. 243.

fendant failed to prove by way of defence to this charge the fact that in 1884 he registered in the county of New York, under a diploma of the Eclectic College of that city, alleged to have been conferred upon him in 1876, prior to his said conviction. If he had proved that this diploma had been conferred upon him, the reason for the reversal by the court of appeals would not and the facts assumed by the appellate division would have existed, and the question whether the law is constitutional in so far as it debars from continuance in practice physicians convicted prior to its enactment would have been decided. But the question would still have remained, whether the law is constitutional in so far as it forbids a layman convicted of felony prior to its passage from acquiring a medical license under the same conditions imposed upon other laymen not so convicted.

(2) The question sought to be decided would seem to be still open; neither opinion of the appellate division being, in the view of the court of appeals, a strictly binding authority; since each assumes a state of facts not before the court.

(3) But if, technically speaking, no absolute and final decision has been rendered upon the point sought to be raised, nevertheless the preponderance of judicial opinion, both in the appellate division and in the court of appeals, is that the medical act is unconstitutional in so far as it expelled from practice licensed physicians on account of their convictions of felony before it took effect. On this point the judges stand four to one in the appellate division, and, at least, four to three if they are not unanimous in the court of appeals; so that, should Hawker again be arraigned, he, probably, would make a successful defence if he could establish the validity of the eclectic college's diploma. And a very able and learned judge, sitting in oyer and terminer in 1884, held that a diploma from that college was a defence to a charge of unlicensed practice, even if purchased *in absentia* from the officers empowered to bestow it, and that, too, although two signatures upon it were proved by uncontradicted testimony to have been forged or procured by a false pretence; a decision from which the prosecution had no appeal.

It is to be hoped, therefore, that the questions involved may be brought up again upon a record adequate to present them fully.

So far as the previous conviction of felony is an element in the case, the dissenting judges of the court of appeals seem to hold that it makes no difference whether Hawker when first convicted was a physician or a layman. If the law is unconstitutional as depriving a physician of his "right" or "quasi right" to practise medicine, then by parity of reasoning it would seem equally unconstitutional in debarring a layman from his privilege *to acquire that right* upon the same terms with others; for if the law operates only on present status, speaking from the time of its enactment, and if prior conviction of felony does not establish that status, then Hawker or any one in *pari delictu*, even assuming that he had not the right to practise medicine in 1878, had at least the right to acquire it on the same terms with others; if not, then his punishment for felony was enhanced quite as much by his prohibition from entering the ranks of physicians as by his expulsion from them. Or to put it interrogatively, can the Regents to-day refuse a license to A, otherwise qualified, solely because in 1886, while a layman he was convicted of a felony? Again, let us suppose the case of one convicted of felony before the act of 1874 restored the penalties for unlicensed medical practice, which had been abolished by the act of 1844, and therefore at a time when, as was said in Bailey *vs.* Mogg,[1] quackery might certainly "boast of its triumphant and complete establishment by law," and every one had the so-called "right" to practise medicine—a right not created but only regulated by statute.[1] Does it not follow logically, from the reasoning of the majority of the appellate division and of the dissenting judges of the court of appeals, that as all felons at large had a right then to practise medicine, our supposed convict could not be debarred on account of his past crime from continuing to exercise that right, if in other respects he could show statutory qualifications? In considering these questions and the effect upon them of the prevailing opinion of the appellate division, we must remember that, although its argument proceeded upon the assumption that Hawker was a physician when first convicted, its conclusion above quoted is that the law is "unconstitutional in so far as it applies by its terms to *persons* so convicted," etc., which strictly means all persons—physicians and laymen.

It will be remembered, too, that that opinion, following the Dent case, laid much stress upon the fact that convictions of felonies "*in no wise associated with their professional pursuits*" would serve under the statute to forfeit licenses of physicians. Are we to infer that if the provision of law in question had affected only physicians convicted of abortions or of manslaughter by reckless administration of poison to patients, etc., it would be constitutional in its retroactive phase, while it is now unconstitutional because it prohibits medical practice to one convicted of burglary or larceny from the person?

There are many arguments that suggest themselves in the premises, which there is here no space even to mention. The construction of laws applying the police powers of government to the regulation of the various professions and trades is one of the most difficult functions of the judiciary. The facts are kaleidoscopic. That opinions differ is not surprising; the opinions of the same judge may undergo change even upon the same state of facts, and may appear to change with varying facts. What is needed in this, as in every case, is an authoritative decision upon a record adequately presenting the facts. Then, and then only, we may know accurately where we stand before the law. Meantime we may profit very much from the very able and learned discussion by both court and counsel of a puzzling question of the constitutional limits of the police power in regulating the licensing of physicians.

[1] 4 Denio 60.

THE MICROBE OF YELLOW FEVER.[1]

BY GIUSEPPE SANARELLI, M.D.,

DIRECTOR OF THE INSTITUTE OF EXPERIMENTAL HYGIENE [illegible] OF MONTEVIDEO.

Four centuries have passed since a terrible disease, until then unknown, attacked the daring men who accompanied Columbus in the discovery of America. Two centuries scarcely have gone by since the same disease, leaving its natural habitat in the Gulf of Mexico and the Antilles, appeared first in South America and gave the Portuguese physician, Ferreira da Rosa, the opportunity to describe that strange morbid process which was to acquire so sad a celebrity under the name of yellow fever.

While other infectious diseases, since the great epidemics noted in history, whether through a sort of acquired immunity, transmitted by heredity or owing

[1] Wert *v.* Clutter, 37 Ohio St. 348.

[1] A translation by A. C. H. Russell, M.D., Surgeon, U. S. Navy, of a public address delivered June 10, 1897, in the Solis Theater, Montevideo. The author's description of the symptoms and morbid anatomy of yellow fever in man, and portions of his account of the symptoms and post-mortem examinations in animals experimented upon, have been omitted.

to scientific prophylaxis, seem to have diminished, little by little, in virulence, or at least tend to remain in their original limits, yellow fever, on the contrary, has progressively enlarged its domain, and is far from even diminishing its virulence.

From the point of view of the anatomical lesions, yellow fever may be considered as the type of the diseases (steatogenous) that cause fatty degeneration, since, although congestive and hemorrhagic phenomena predominate in the symptoms, degenerative lesions present themselves first in the anatomical changes.

There does not exist, however, any lesion truly pathognomonic of yellow fever, although the changes of yellow fever in their entirety constitute, as Jaccoud has said, "an anatomical criterion more clear and better defined than that of the majority of infectious diseases."

I procured the material for my studies partly at the Lazaretto of the Island of Flores, the quarantine station of Montevideo, where a small laboratory was set up last summer, and partly in the hospital of San Sebastian at Rio.

When I thought of devoting myself to the study of yellow fever, Sternberg and also the majority of the medical men of Brazil thought they had to deal probably with a local infection, seated principally in the stomach. In that organ, according to them, the infectious agent, as yet unknown, elaborated a toxic substance, which, absorbed into the blood, gave rise to the general symptoms characteristic of yellow fever.

The recognition and the isolation of the specific agent of yellow fever must be considered as the most difficult undertaking yet presented to the patient investigation of bacteriologists.

The cadavers of the victims of yellow fever are either sterile or they are found to be invaded throughout by certain species of microbes, as the streptococcus, the staphylococcus pyogenes, the coli bacillus, the proteus, etc., which cannot be considered as the cause of the disease; in a word, they show a mixture of microbes, the isolation and the classification of which require a total of work which makes systematic and careful investigation impossible.

I owe the chance of the discovery of the microbe of yellow fever to the second case of the disease which presented itself to me at the Island of Flores. This case, though it showed a mixture of various microbes, had, in a state of relative purity, the specific microbe, to which I have given provisionally the name of "bacillus icteroides," because yellow fever is known also under the name of typhus icteroides.

I have said, "in a state of relative purity," because yellow fever is the prototype of the diseases of mixed infection. I have never found the "bacillus icteroides" alone in the autopsies I have made. It has been associated always with the micro-organisms previously referred to or among the numerous species of common microbes, or it has been impossible to find it because the other microbes, having entered the organism in its train, have ended by impeding its evolution and have even caused it to disappear entirely.

The "bacillus icteroides" must be sought for in the blood and in the tissues, and not in the gastro-intestinal tube, in which, contrary to what might have been supposed *a priori*, I have never encountered it.

In reality, in yellow fever, as in typhoid fever, there takes place in the digestive tube an extraordinary multiplication of the coli bacillus, which is found there in a state of almost absolute purity.

Upon the result of my investigations I will say that the isolation of the specific microbe of yellow fever is possible in only fifty-eight per cent. of the cases.

The reasons for this are easy to understand. Before all, in the beginning of the disease, the "bacillus icteroides" multiplies very little in the human organism, a very small quantity of its toxin being sufficient to provoke in man the worst type of the disease.

In the second place, the toxin, whether by itself or indirectly through the profound lesions it causes, especially in the digestive mucous membrane and in the liver, facilitates in an extraordinary manner every sort of secondary infection.

According to my investigations, the "bacillus icteroides" is found in the circulating blood and in the tissues: the germ of yellow fever does not reside in the digestive tube, and its poison, instead of being absorbed through the intestinal walls, is fabricated in the interior of the organs and in the blood.

Morphologically this bacillus does not present at first sight anything characteristic. It is a little rod, with rounded extremities, united at best by pairs in cultures and in groups in the tissues, from two to four micromillimetres in length, and generally two or three times longer than it is broad. It is sufficiently polymorphous.

Investigating it in the tissues does not give good results, unless the death of the patient occurs without secondary septicæmia.

Even in the cases that give the best results from the bacteriological examination, it is not easy to place the bacillus in evidence in sections of the tissues, on account of its extremely small number. In spite of this, by using the utmost care, one can find it in the organs, united usually in small groups and situated always in the minute capillaries of the liver, the kidneys, etc.

The best way to demonstrate not only its presence but also its special tendency to arrange itself in small groups, preferably in the blood capillaries, consists in placing in the incubator, at 37° C. for twelve hours, a fragment of the liver taken from a fresh cadaver in order to favor the multiplication of the specific microbe. The yellow-fever bacillus grows sufficiently well in all the ordinary culture media. In common gelatin it forms rounded colonies, transparent and granular, which during the first three or four days present an aspect analogous to that of leucocytes.

The granulation of the colony becomes more and more pronounced, appearing ordinarily as a nucleus, central or peripheral, completely opaque; in time the whole colony grows entirely opaque. It never liquefies gelatin.

In beef bouillon the bacillus grows quickly, without forming either pellicles or deposits.

On blood serum solidified it grows in a manner almost imperceptible.

Cultures on agar-agar represent for the "bacillus icteroides" a means of diagnosis of the first order; but the demonstration by this means of diagnosis is efficacious only under certain determined conditions.

When the colonies grow in the incubator, they present an appearance that does not differ from that of the majority of the other species of microbes: they are rounded, of a slightly iridescent gray color, transparent, even in surface, and regular in outline.

If, instead of causing the colonies to grow in the incubator at a temperature of 37° C., they are allowed to evolve at a temperature of from 20°–22° C., they appear like drops of milk, opaque, projecting, and with pearly reflections: that is to say, they are completely distinct from those grown in the incubator.

These different modes of evolution can be used for diagnosis by exposing cultures, first, for from twelve to sixteen hours to the temperature of the incubator, and afterward for other twelve to sixteen hours to the temperature of the air.

This done, the colonies show themselves to be constructed with a flat central nucleus, transparent and azure, having a peripheral circle prominent and opaque. This peculiarity, which may be considered

specific, may be made evident in less than twenty-four hours, serving thus to establish the bacteriological diagnosis of the "bacillus icteroides."

Apart from this morphological characteristic, which suffices of itself to differentiate the microbe of yellow fever from all others previously known, the "bacillus icteroides" is endowed with some interesting biological qualities.

It is a facultative anaerobe, and does not resist the Gram stain; it ferments insensibly lactose, more actively glucose and saccharose, but is unable to coagulate milk; it does not produce indol, and is very resistant to drying; it dies in water at 60° C. or after being exposed for seven hours to the solar rays, and lives for a long time in sea water.

The microbe of yellow fever is pathogenic for the greater number of the domestic animals. Few microbes have a pathological dominion so extended and so varied. Birds are completely refractory, but all the mammiferous animals upon which I have experimented have shown themselves more or less susceptible.

But of all the animals, that which lends itself best to showing the close analogy, anatomically and nosologically, between experimental yellow fever and human yellow fever, is the dog.

The virus should be injected into a vein. The morbid process that results manifests itself almost immediately, with a violence of symptoms and an assemblage of lesions which recall the picture, clinical and anatomical, of human yellow fever.

The lesions found after death are extremely interesting, as they are almost identical with those observed in the human cadaver.

Attention is called before everything to the intense fatty degeneration of the liver. The hepatic cell, examined in a fresh state with a little osmic acid, appears completely turned into fat, as it is in human victims of yellow fever; the yellow-fever toxin, as we shall see later, is a true specific poison to the hepatic cell, as are phosphorus and arsenic. A complete fatty degeneration of the liver may be effected by injecting directly into it, through the abdominal parietes, a fresh culture of the specific bacillus.

The kidney shows a severe fatty degeneration, accompanied by lesions of acute parenchymatous nephritis, which may be considered the direct causes of the anuria and the uræmic intoxication.

The digestive apparatus shows lesions of hemorrhagic gastro-enteritis as intense as those caused by poisoning with cyanide of potassium. They are completely analogous to those in man, though more grave.

A bacteriological fact of great interest in the yellow fever of the dog is that in the majority of cases the "bacillus icteroides" is found in the blood and the organs in variable quantity and in a state of absolute purity; at times, it is found associated, as in man, with the coli bacillus and the streptococcus.

As the tendency to secondary microbic infections has been proved even in the yellow-fever intoxication of the dog, provoked with a pure culture, filtered, it must be concluded that the yellow-fever poison, whether by itself or whether through the alterations it produces in the different viscera, and especially in the liver—which, as is well known, should be considered the organ of defence against microbes—favors in the dog secondary infections having their point of departure in the intestinal canal.

This is an important point of resemblance between the yellow fever of the dog and that of man.

From the results of the first part of the investigations relative solely to the comparative morphology, biology, and pathology of the "bacillus icteroides," we can deduce some fundamental conclusions concerning the etiology and the pathology of the yellow fever of man.

Yellow fever is, then, an infectious disease, due to an organism well defined and susceptible of being cultivated in the common artificial nutritive media.

This micro-organism, which I have designated provisionally with the name of "bacillus icteroides," can be isolated, not only from the cadaver, but also during the life of the yellow-fever patient.

Its isolation presents generally difficulties, sometimes invincible, due in part to the constant presence of secondary infections, and in part to the relative scarcity of the organism in the body.

These secondary infections, due almost always to certain species of microbes, as the coli bacillus, the streptococcus, the staphylococcus, the proteus, etc., may appear in the organism long before the death of the patient, which is often attributable to their action rather than to that of the "bacillus icteroides."

It is probable that the protean character of yellow fever in man may be due to the nature and the mode of evolution of these secondary infections.

Yellow fever progresses in cycles; at first the specific microbe is very scarce in the organs, and it is only at the end of the disease cycle, whose duration may be established as between seven and eight days, that the microbe multiplies resolutely and suddenly invades the entire organism, accompanied almost always by other microbes, probably of intestinal origin.

The "bacillus icteroides," once in the organism, not only determines a general intoxication, but also produces specific alterations, which have their seat of election, above all, in the kidneys, the digestive tube, and the liver.

As the renal lesion is one of the first, and as the anuria it provokes establishes itself promptly, to it may be attributed an influence not to be despised in the evolution and termination of the disease.

The patient with yellow fever is in reality menaced by three imminent dangers at the same time, and the bacteriological examination may show, with sufficient exactness, the principal cause of death:

1. It may be attributed chiefly to the specific infection, when the bacillus is found in the cadaver in sufficient quantity and in a state of relative purity; this is seen solely in those cases that complete their morbific cycle.

2. It may be considered as produced by the secondary septicæmia, supervening in the course of the disease, when the cadaver offers cultures, almost pure, of other microbes.

3. It may be attributed in great part to the renal insufficiency, when the cadaver is almost sterile and when the quantity of urea in the blood is very high and death comes on before the disease has terminated its normal cycle of evolution.

It is difficult to pronounce during life upon the respective importance of the uræmic and of the specific symptoms. The frequency of the complication of renal insufficiency is, without doubt, the chief cause which prevents the adoption of a specific thermic type for yellow fever.

The "black vomit" is due to the action of the gastric acid upon the extravasated blood in the stomach. The vomiting itself is directly provoked by the specific emetic action of the toxins of the "bacillus icteroides" circulating in the blood.

The "bacillus icteroides" possesses morphological characteristics so marked that it can be distinguished with much ease from all the other microbes known until now.

Once isolated, whether from the cadaver or from the patient, its exact bacteriological diagnosis does not require more than twenty-four hours.

The disease may be transmitted experimentally

even by the respiratory tract to rabbits and guinea-pigs; the bacteriological examination of these cases shows, at least, the existence of a toxic process identical with that which takes place in man. It is then possible that the contagion of the virus of yellow fever may be effected even by means of the air, which is in accord with the dominant opinions in this respect.

The virus of yellow fever possesses three chief pathogenic properties, which join to give it a peculiar physiognomy that may be considered specific:

1. The steatogenous property, which acts with greater intensity the higher in the zoölogical scale the animal experimented upon is. The jaundice, which appears in general when the illness is advanced, is due in large measure to the anatomical alterations of the liver, which constitute a mechanical obstacle to the free course of the bile, and thus favor its reabsorption by the lymphatics.

2. The congestive and hemorrhage-producing properties which, in spite of being common to other varieties of virus, constitute a salient, specific characteristic, since to them are due not only the classic black vomit and the various other hemorrhages from the mucous membranes, but also the vascular congestions that are the chief cause of the pathognomonic pains of yellow fever—headache, backache, liverache.

3. The emetic properties which, even if they are not so closely connected with the yellow-fever virus as are the preceding manifestations, impress, however, upon this virus, by the rapidity, intensity, and frequency with which they manifest themselves in man and the superior animals, a very particular pathogenic character that distinguishes it easily from all others hitherto known.

On account of the numerical scarcity ordinarily of the "bacillus icteroides" in the human organism, and the violence of the symptoms that occur immediately after the intravenous injection of a culture relatively small, we must suppose the existence of a specific poison, extremely active. We will occupy ourselves, then, with this poison, which is obtained, like that of diphtheria, by simply filtering cultures in broth of the "bacillus icteroides," twenty to twenty-five days old. The yellow-fever poison tolerates almost with impunity heating to a temperature of 70° C., but the heat of ebullition weakens it sensibly.

If the sterilized culture with ether is employed instead of the filtered culture, the toxic power is sensibly augmented.

In the dog the toxin reproduced the same symptoms and the same lesions we have described in speaking of our experiments made with the virus. The bacteriological examination showed the existence of mixed infections, due, as always, to the coli bacillus, or the streptococcus, or the staphylococcus.

The cat is the most resistant animal I have yet made experiments upon.

In the goat the toxin produced exactly, with the exception of the vomiting, the same lesions that have already been noted in the dog and in man.

The horse is very sensitive to even minute quantities of the toxin. An autopsy upon the body of a horse which died from the effects of the toxin showed great swelling of the spleen, a slight degeneration of the liver, nephritis, albuminuria, and some foci of enteritis.

These are the experiments the most important and the most convincing, for the reason that they fix in a definite manner the specific character of the microbe I have discovered, and contribute more than anything else toward a revelation of the secret mechanism of its action upon man.

Up to the present time almost every sort of means has been tried in order to transmit yellow fever experimentally. These attempts gave no results, which explains why for many years the conviction has prevailed in the United States that this terrible malady was not contagious.

A perfect explanation of the surprising failure of these experiments is to be found in the fact that the black vomit was commonly believed to contain the virus of yellow fever, and this was consequently used in trying to communicate the disease.

Now we have seen that the "bacillus icteroides" not only does not have its seat in the stomach, but also, even when it is found by chance in that organ, it is because it has been drawn along by the blood, and is found consequently in a condition of extreme dissolution.

My experiments upon man reach the number of five.

For reasons easily understood I have not used living cultures, but simply cultures in broth from fifteen to twenty days old, filtered with the Chamberland filter and sterilized, moreover, with the greatest caution by a few drops of formic aldehyde.

In two of the individuals I tried the effect of subcutaneous injections and in the other three that of intravenous injections. These fortunate experiments, though few in number, are sufficient to illuminate in a manner unhoped for all the pathogenic mechanism, so obscure and so badly interpreted until now, of yellow fever.

The injection of the filtered culture in doses relatively small reproduces in man typical yellow fever. The fever, the congestions, the hemorrhages, the vomit, the fatty degeneration of the liver, the headache, the backache, the nephritis, the anuria, the uræmia, the jaundice, the delirium, the collapse—in fine, all that conjunction of anatomical and symptomatic elements which constitute by their combination the indivisible basis of the diagnosis of yellow fever, I have seen unroll before my eyes, thanks to the potent influence of the yellow-fever poison made in my artificial cultures. This fact not only represents very valuable evidence in favor of the specific nature of the "bacillus icteroides," but it establishes new grounds for the etiological and pathological conception of yellow fever.

Eliminating thus the dominant theory, which presented the digestive canal, and above all the stomach, as the focus of the disease, solely because the gastro-intestinal phenomena have attracted until now most vividly the attention of the student of disease; demonstrating thus that all these imposing phenomena are due to the specific poison, fabricated by the microbe which circulates in the blood, yellow fever enters immediately the same group of diseases in which I have for some time placed another great morbid process, which, previous to my investigations, had always been ill understood. I refer to typhoid fever.

All the symptomatic phenomena, all the functional alterations, all the anatomical lesions of yellow fever are but the result of the action, eminently steatogenic, emetic, and hæmolytic, of the substance manufactured by the "bacillus icteroides."

It is justly on account of its general symptoms, its characteristic ataxo-adynamic manifestations, its tendency to hemorrhages, its jaundice, etc., that yellow fever has been compared to the poisoning caused by the venom of certain serpents.

Another point of contact between the two morbid processes consists in the hæmatogenic gastro-enteritis, which in cases of poisoning by venom is attributed erroneously, even to-day, to a species of "the force of elimination of the organism."

Now that we have eliminated the way of ingress of the specific microbe and the seat of election, entirely arbitrary, assigned to it in the digestive tube according to old-fashioned ideas, let us see by what route

this microbe penetrates into the organism in order to manufacture its poison, and let us say at once that it is a point sufficiently difficult to establish.

In countries where the yellow fever exists, no evidence has yet been collected sufficiently significant to establish the transmission by water. On the other hand a great number of facts exist which should speak strongly in favor of transmission by the air.

The only example always cited by authors, referring to the diminution of the yellow fever in Vera Cruz since the city was provided with good drinking-water, can have only a relative value, as have all the affirmations of this kind.

There is too exclusive a tendency to attribute to the realization of a single hygienic measure the sanitary improvement of a city; it concerns almost always, on the contrary, a series of hygienic improvements that have of a necessity preceded or accompanied it.

For the rest, the tenacious resistance to desiccation and to water I have found in the "bacillus icteroides" authorize me to admit that the diffusion of the virus of yellow fever can take place as well by air as by water. The experiments on animals show that infection by the respiratory tract is possible.

With respect to the mechanism of infection by the way of fluids, a fact beyond doubt is that when the epithelium of the digestive tract is intact, in general it does not permit the entrance of any sort of pathogenic germ. It should be remembered, notwithstanding, that, in countries where the yellow fever exists, the slightest disorder of the digestive functions, the abuse of alcoholic and iced drinks, and of fruits, etc., above all by new-comers, constitute, as all of them causes of general depression, just so many factors to determine at once the entrance of yellow fever upon the scene.

The marked tendency to lesions of the liver in hot countries would represent then not only one of the conditions that predispose most readily to yellow fever, but, when this has once been established, would be the chief cause of those secondary infections which impress at times a physiognomy so complex upon the bacteriological result of yellow fever and which contribute undoubtedly in a notable manner to the increase of the mortality, already horrible, of this disease.

The "bacillus icteroides," whether by the effect of its specific poison or whether through the grave hepatic lesions which are its most immediate consequence, favors at a given moment the entrance into the organism of septic microbes, which not only end the disease much before the specific agent could do it, but are also prejudicial to the latter, invading at once its domains, suppressing its vegetative faculty and even its vitality.

It is on account of this that these phenomena of microbic antagonism between the yellow-fever bacillus and the micro-organisms of septic infections, instead of being useful to the patient, tend to hasten his death.

There is another curious bacteriological phenomenon of immense value in the epidemiology of yellow fever; the marine propagation of this disease is now completely established, the cause of which we must seek, guided by the knowledge we have acquired concerning the biology of its specific microbe.

The behavior of yellow fever on ships differs singularly from that of another grave epidemic disease—the cholera. The latter, once introduced on board, causes a veritable explosion, attacking rapidly, one may almost say, all it ought to attack.

The gravity of this explosion varies according to the quantity and the energy of the cholera vibrios and the predisposition of the subjects; but this, as it were, act of presence once accomplished, the cholera vibrio does not seem to find in the ordinary nautical conditions a soil very favorable to its existence. Failing this intermediary between man and the cholera agent, above all if disinfection is well carried out, the disease dies out.

Yellow fever on the contrary, once established on a ship, persists long and tenaciously, keeping itself especially in the bilges, holds, storerooms, and finally in every narrow and confined place. It is generally admitted that old and worn ships are the very worst for service with countries in which yellow fever is epidemic. All students of naval hygiene consider as types of "the yellow-fever ship" those ships badly ventilated, with small hatches and air ports, in which vitiated air stagnates above and fetid moisture below.

Heat, moisture, darkness, and want of ventilation seem to be the best coefficients for the preservation of the "bacillus icteroides;" but we know in the present state of our knowledge it is not possible to attribute any specific value to these diverse coefficients, since on the whole they are conditions that favor all microbes in general. It is necessary then to seek in some other concomitant element the cause that gives to the nautical habitat of the "bacillus icteroides" a form almost specific.

A simple phenomenon which attracted my attention under various circumstances during my studies explained to me in an original manner the probable cause of this mysterious longevity and resistance of the "bacillus icteroides" on board ships; it is that the common moulds of the atmosphere constitute the great protectors of the "bacillus icteroides."

The microbe of yellow fever, though endowed with a notable power of resistance to the natural chemico-physical agents, cannot be indifferent with respect to the substances necessary for its nutrition.

It is indubitable that during its saprophytic existence outside the body, as for example in the hold of a ship, it cannot make use of nutritive principles of much value, and this is so certain that many times it is not capable even of multiplying on a layer of common gelatin. If notwithstanding a mould begins to grow in its vicinity, the products of the growth of this hyphomycete or the changes caused by it in the surrounding media are sufficient to nourish, vivify, and multiply the "bacillus icteroides," which otherwise would have been left to die sooner or later. This favorable property of mould for the "bacillus icteroides" can be demonstrated experimentally by placing the spores of any sort of mould upon a layer of gelatin previously sowed with microbes of yellow fever, which, as often happens, has remained sterile.

Scarcely has the mould begun to grow when there appears around it in the gelatin a crown of little punctiform colonies belonging to the "bacillus icteroides." Commensurately with the growth of the mould these colonies become more numerous, augmenting rapidly their zone of occupation around the central stem of the mould. After a few days the plates of gelatin on which the mould has grown presents an appearance extremely curious; around each piece of mould the colonies of the "bacillus icteroides," which one might have supposed for some time to be dead or at least incapable of growing, form, as it were, constellations, the more numerous the nearer they happen to be to the point occupied by the mould. It would seem then that mould possesses a species of radius of influence, within which only is the evolution of colonies of yellow-fever bacilli possible. This radius of influence is more or less extended according to the variety of the mould and the space it occupies, but it is always perfectly regular, uniformly distributed, and equidistant from the centre, represented, as I have said before, by the stalk of the fungus. Outside of this radius of influence, which is always clearly limited, the evolution of the microbe colonies ceases abruptly and the rest of the gelatin remains sterile unless a new

spore gives rise to a new mycelium, which finds itself promptly surrounded by a new pullulation of icteroides colonies.

It is very probable that this faculty constitutes a specific characteristic common to all moulds in general, since the six species I have accidentally isolated from the atmosphere of the laboratory have all shown themselves capable, though in different degrees, of favoring the revivification and multiplication of the icteroides microbe, which without this condition would not have been able to unfold itself.

It is possible, moreover, that there exists in nature, above all in localities where yellow fever takes hold with great vigor, some mould hitherto unknown and endowed with a favoring power truly specific and even much more notable.

This strange phenomenon of parasitism, which could be defined as the loan of the means of existence, this rare form of microbic saprophytism represents probably the easy acclimatization of yellow fever on ships.

It is in reality very probable that in the holds of badly ventilated ships it is not only the legendary moist heat considered from the point of view of its chemico-physical effects which maintains so long the vitality of the yellow-fever germs accidentally brought there. In the holds of ships, in spite of the moist heat, other pathogenic microbes, as that of cholera and of typhus, etc., do not prosper and remain long active. As far as yellow fever is concerned, the moist heat and insufficient ventilation should be considered then as indispensable conditions for the growth of the moulds, and therefore as indirectly favorable to the vitality of the "bacillus icteroides."

This phenomenon of commensalism, analogous to that Metchnikoff marked out some time ago for the cholera vibrio, is in accord with and explains many other well-observed practical facts which form part of the epidemiological character of yellow fever.

We must consider then the moulds as natural protectors of the specific agent of yellow fever, as it is owing to their intervention that the latter finds the force to live and multiply itself until a point is reached at which, through the unsuitableness of the nutritive medium or the action of an unfavorable temperature, its existence would be rendered impossible.

The intervention of this factor, so insignificant in appearance, constitutes notwithstanding the chief cause of the acclimatization of yellow fever not only on ships but also in certain localities where it seems to find conditions extraordinarily favorable for its sad dominion.

We know in truth that one of the conditions thought indispensable for the evolution of yellow fever, moisture, represents, joined with heat, the best element for the formation of the moulds. Moreover it is thought that the unhealthiness of Rio Janeiro is due chiefly to the want of ventilation and to the excessive humidity of the atmosphere.

It is probable then that the factor of humidity on board ship, as near the coast and in the interior of countries, represents the principal coefficient of this biological phenomenon.

Moreover, the conspicuous resistance of the "bacillus icteroides" to desiccation, which is the chief factor of natural disinfection, and its longevity in sea water, explain sufficiently the easy acclimatization of yellow fever and its tenacious persistence above all in maritime localities afflicted by the presence of its specific agent.

For a year, by work often interrupted, I have had the fortune to bring to this point our knowledge this terrible infirmity, which represents the most grave and urgent sanitary problem throughout America. The ground covered is without doubt wide, but there remains yet much to go over. We have learned to know the specific agent of yellow fever; we have it in our power; we have studied minutely its life, its habits, its wants, its relations to external agents and to other small organisms; we have revealed the complicated mechanism of all the infinite manifestations which this agent determines in the human organism, and we have finally placed this disease, which a few months ago was a horrible mystery, on the same level as that occupied by the other great infectious diseases.

The advantages to public prophylaxis and to clinical indications which will rise out of these results need not be indicated; the principal base of social defence against diseases is the exact knowledge of their specific causes.

Asiatic cholera, typhoid fever, and many other grave diseases do not inspire now the terror of former days, because science, relying upon the study of their specific agents, can guard against their diffusion and acclimatization by adopting wise sanitary measures and effecting various hygienic improvements—thanks to the good results of which certain cities have been, so to speak, almost resuscitated.

But apart from the prophylactic ideal, which from the hygienic point of view holds the greater importance, because it is always better and easier to prevent diseases than to cure and drive them out when they have once manifested themselves, there exists another ideal—the therapeutic ideal.

Well, then, given the nature of the process we have just studied, I do not think it difficult for even this ideal to be realized and I entertain a well-founded faith that it will soon be possible to apply to man a specific preventive and curative treatment of yellow fever.

THE TECHNIQUE OF VAGINAL SECTION, IRRESPECTIVE OF HYSTERECTOMY, FOR DISEASED APPENDAGES AND SMALL PELVIC TUMORS.[1]

By AUGUSTIN H. GOELET, M.D.,

NEW YORK,

PROFESSOR OF GYNÆCOLOGY IN THE NEW YORK SCHOOL OF CLINICAL MEDICINE.

In the face of considerable opposition on the part of some surgeons who have obtained most satisfactory results from abdominal section, for these conditions vaginal section has continued to grow in favor and may be regarded as the accepted method of procedure in certain cases. As one of those who at first opposed this route for the removal of diseased pelvic organs, I feel entitled to speak upon this point in the light of recent experience.

My excuse, if one be needed for this brief paper, is to elucidate the technique of vaginal section and the subsequent management of these cases, and thus add my quota to the effort to brush aside the prejudice which still exists in some quarters against the operation. Anything which will lessen the shock in operation, reduce the mortality, and shorten convalescence is to be regarded as a decided advance in our methods, and this may be said of the vaginal operation. If the surgeon selects his cases carefully and employs this method only when it is appropriate, he will have no dissatisfaction with the results, but will soon learn infinitely to prefer this route in certain conditions. There will still remain a great many cases in which abdominal section can be done to better advantage and to the greater safety of the patient. It must not be thought, then, that the one route will entirely supersede the other, since both have their natural limitations,

[1] Read before the section on obstetrics and diseases of women of the American Medical Association, 1897.

based upon (1) the ease with which the operation may be completed, (2) the complications which may develop as the operation proceeds, (3) the danger which the operation involves, and (4) the immediate as well as the remote results, including the necessity for drainage.

The advantages of this method aside from those already mentioned may be stated as follows, viz.: (1) The patient will more readily consent to a vaginal section; hence hopelessly diseased organs may be removed earlier and the mortality thereby lessened and suffering relieved. (2) The surgeon will not hesitate to advise vaginal section in conditions which do not seem to present sufficient gravity to warrant the risk of abdominal section. (3) As a method of exploration of the pelvis necessary to clear up the diagnosis when the diseased condition is not extensive and when adhesions are not dense or numerous. (4) If subsequent drainage is certain to be required, it is more prefectly secured through a vaginal incision.

The operation is applicable (1) for small pelvic tumors which are or seem to be solid in part or entirely so; (2) in ovarian cysts of considerable size, since the fluid can be evacuated and the sac withdrawn through a small vaginal incision and removed quite as readily, and many times more readily than through an abdominal incision; (3) for pyosalpinx, hydrosalpinx, and hæmatosalpinx; (4) for cystic or otherwise enlarged and diseased ovaries; (5) for the removal of small subperitoneal fibroids by myomectomy; (6) for drainage of pus accumulations situated low down in the pelvis; (7) for hæmatoma and hæmatocele; (8) for pelvic exudations which resist other means for their removal. I have had excellent results from persistent faradization in these last-named conditions; hence I believe that surgical interference is seldom required when suppuration has not occurred.

Technique of Vaginal Section.—The patient is as carefully prepared as for abdominal section, and the abdomen should be shaved and otherwise rendered aseptic, so as to permit an immediate section there should the necessity develop during the course of the operation through the vagina. The vagina is thoroughly irrigated the evening before with a one-per-cent. solution of lysol in hot water and packed with markasol gauze. This is preferred because it is certainly antiseptic and does not irritate the vaginal surface. The morning of the operation the vulva is shaved and washed with green soap and a one-per-cent. solution of lysol, and afterward covered with a pad of markasol gauze. After being anæsthetized the patient is placed upon the operating-table in the exaggerated lithotomy position, with buttocks over the edge of the table. The vulva and the vagina are now scrubbed again with green soap and irrigated with a one-per-cent. solution of lysol. A short broad-bladed hard-rubber speculum is inserted and the perineum retracted, exposing the cervix. The speculum is held in the right hand by the nurse, who sits to the left of the operator. The cervix is seized with the angular tenaculum forceps, drawn down, and the cervical canal is dilated; the cavity of the uterus is curetted and irrigated with a one-per-cent. solution of lysol and packed with markasol gauze to the external os. A traction ligature is now inserted through both lips of the cervix, which is held by the nurse with her left hand, who draws it down and up against the pubis if the section is to be made posterior to the cervix. The cervico-vaginal fold is the guide for the line of incision. With curved, blunt-pointed scissors a semicircular incision is made through the vaginal wall along the fold extending about half-way around the cervix on either side. After the vaginal wall has been penetrated, the dissection is extended farther with the blunt end of the scissors closed or with the thumb nail, the operator hugging the posterior wall of the uterus and peeling the tissues away from it until the peritoneal fold of Douglas' pouch is exposed. This is divided with the scissors and enlarged to the extent of the vaginal incision on either side. Up to this point there may be considerable bleeding from small vessels which have been divided, but the operation need not be delayed by any effort to control this until the peritoneal cavity is opened.

The peritoneum on the posterior face of Douglas' pouch is now drawn down with a tenaculum, and with a continuous catgut suture it is sewed to the posterior edge of the vaginal incision to the limit on either side. This very effectually controls the bleeding. A traction ligature of silk is now inserted on either side near the angle of the incision in the vaginal wall, including the peritoneum, which has just been sewed to it. We are now ready for exploration of the pelvic cavity. One or two fingers are inserted, and when adhesions are encountered they are separated; the diseased structure is brought more easily within reach of the examining fingers by pressure upon the abdomen above with the disengaged hand and by removing the perineal retractor.

If a distended tube is discovered or any cystic tumor, care is necessary to avoid rupture and soiling of the peritoneum. The adhesions are carefully separated, and, when possible, the mass is delivered through the vaginal incision, the pedicle is ligated, and it is removed intact. But should it prove too large for removal in this manner, the adhesions are separated as far as it is possible to reach, and it is brought down to the incision and held firmly there by pressure upon the abdomen above, while it is seized firmly and punctured, so that the contents will be discharged along the groove of the speculum. As the sac collapses it is rapidly drawn through the incision into the vagina. Adhesions which could not be reached before can now be separated. If the tumor is a large ovarian cyst, it may be more advantageous to employ a trocar, but I seldom use it. If the tumor proves to be a pus accumulation in the tube or ovary, greater care must be taken to avoid soiling or infecting the peritoneal cavity, and free irrigation of the vagina with a 1 to 5,000 solution of bichloride, if it is ruptured during removal, will be necessary. As a rule, irrigation should be avoided when possible, and I seldom use anything except normal salt solution.

Prolapse of the intestines through the incision is avoided by elevation of the hips and by inserting a pad of sterilized gauze, with string attached for its removal, through the incision up into the pelvic cavity and pushing them out of the way. This is done of course before the mass is brought down into the incision.

A solid or semisolid tumor will be more difficult to remove through a vaginal incision, though I have removed dermoids the size of the fist. Solid tumors attached to the uterus and when not very large may be removed piecemeal, though I prefer abdominal section in these cases.

Small subperitoneal fibroids, when their removal is thought best, may be removed likewise by a myomectomy through a vaginal incision, the pedicle being enucleated from the uterine wall and the wound closed by a Lembert suture of fine catgut.

When the location of the mass is such that it may be reached more easily by an incision anterior to the uterus, the peritoneal cavity is entered by a similar incision in the vaginal wall anterior to the cervix and extending up between the uterus and bladder. It will be safer, especially when there is any prolapse of the anterior vaginal wall, to precede the operation by a thorough exploration of the bladder by means of a sound, so as to locate its position relative to the uterus.

Great care must be observed in the dissection between the uterus and bladder not to wound the latter, and it must be remembered that the dissection must be carried much farther up in front than behind before the peritoneum is reached. By hugging the front wall of the utterus closely, and making traction upon the cervix downward and backward, there will be no excuse for wounding the bladder. When the peritoneum is reached and the cavity opened, the edge of the peritoneum is attached to the edge of the vaginal incision by suture, and we are ready for exploration of the pelvis and the removal of the offending structures. This method of procedure is the same as when the incision is made into the posterior cul-de-sac.

The after-dressing of these wounds in the vagina and their subsequent management will depend greatly upon the necessity for drainage and the liability to adhesions of the intestines to the returned stump. When the character of the work done is of such a nature that drainage is not required, and there is no likelihood that adhesions will form, the vaginal wound may be closed by suture, though this is not absolutely necessary, as union will take place quickly if it is left unsutured. It is not even necessary to remove the catgut suture which unites the peritoneum to the vaginal wall, since the two surfaces of peritoneum will fall together and adhere, and the absorption of the catgut permits the other tissues to come into coaptation subsequently. (The traction ligatures are, of course, removed.) Yet if the catgut has been hardened and we are not certain that it will be quickly absorbed, it should be removed.

When it is thought best to close the vaginal wound a continuous suture of ordinary catgut is employed, and care is taken to include the peritoneal edges in the sutures. Subsequently the vagina is packed loosely with markasol or plain sterilized gauze, which is removed after forty-eight hours. After this the vagina is irrigated daily if required.

When drainage is necessary or adhesions are to be avoided, a strip of plain sterilized gauze is carried through the incision and packed around the returned stump to protect it from contact with the intestines. The end of this is allowed to protrude into the vagina, which is filled loosely with the same gauze. For convenience of removal, the strip carried up through the incision should be continuous with that in the vagina.

This gauze is permitted to remain for twenty-four hours, when that in the vagina should be removed, together with a part of that in the peritoneal cavity. Some fresh gauze is placed in the vagina, and after another twenty-four hours the whole is removed by very gentle traction, and the vaginal wound is permitted to close if there is no longer any necessity for drainage.

Union will usually take place in from six to eight days, even when the gauze drain is employed, and the patient can be gotten up at the end of two weeks if nothing occurs to prevent it.

It is the exception when any rise of temperature follows this form of vaginal section, and the convalescence is, as a rule, rapid and uneventful.

128 West Seventy-Third Street.

Uterine Sound.—The use of the uterine sound to reduce retrodisplacement of the uterus, although recommended by some text-books, is never to be resorted to. The dangers from liability to perforate the organ, of carrying infection into its cavity, or of injuring its mucous-membrane lining so that germs that are already present may invade the tissues, are too great to warrant the risk. The sound should never be used for this purpose.—Montgomery.

Progress of Medical Science.

Poisoning by Quinine.—Gresswell (*Lancet*, May 1, 1897) has reported the case of a woman, forty-seven years old, to whom he was called because it was thought she had fallen into a fit. He found her prostrated, unable to speak, and with a pallor of countenance like that of impending death. On inquiry it was learned that the patient had taken before breakfast, about two teaspoonfuls of quinine dissolved in acid after which she vomited. The hands and face were extremely pale and the pulse was quick and irregular—almost fluttering, small, thready, and feebie. The heart beats, though clear, were wanting in strength, and were of a dull, subdued, metallic character. Hearing was entirely lost and vision was greatly impaired. For about eight hours the woman remained speechless and quiescent, though not quite unconscious. At the end of this time she began to speak, while some color had returned to the cheeks and the action of the heart had become quieter and stronger. A sedative prescription insured a comfortable night and on the following day the patient was much improved, although still deaf, especially in the right ear. The pupils were large and reacted but sluggishly. Perfect recovery ensued in the course of a few more days. In describing the onset of her symptoms the patient stated that she at first felt faint, then dizzy, and was next sick; tingling appeared in the fingers and all over the body; and finally unconsciousness developed without pain.

The Variability in Color and Amount of the Intracellular Biliary Pigment Deposits in the Liver.—As the result of a study of pathologic changes in liver cells, Browicz (*Deutsche medicinische Wochenschrift*, June 3, 1897) comes to the conclusion that the beginnings of the biliary capillaries are to be found within the protoplasm of the liver cells themselves, appearing as intraprotoplasmatic biliary passages in direct communication with the intracellular biliary passages. The so-called secretion vacuoles of Kupfer may be looked upon as transverse sections of intraprotoplasmatic biliary passages. In cases of pronounced intracellular stasis of bile, the intraprotoplasmatic passages may furnish the basis of pathologic vacuolization of the liver cells of varying degree. The nucleus of the liver cell takes an active part in the secretion of the biliary pigment. The deposition of such pigment within the nuclei of liver cells under pathologic conditions is not indiscriminate in distribution about the reticulum, but takes place within well-defined rounded areas, so that the conclusion seems justified that permanent spaces or canals are present in the resting nucleus, which become distended under pathological conditions and afford the basis for pathologic vacuolization of the nucleus. Continued investigation upon the same lines has shown that within the chromatin ground substance of the nucleus of the liver cell there exists a system of fine spaces or canals in direct communication with the intraprotoplasmatic system of canals, and this in turn is in direct communication with the intracellular biliary passages. The intranuclear and intraprotoplasmatic system of canals must be considered a connected system of secretory canals, as indicated by the various biliary deposits that take place in them under pathologic conditions. The beginnings of the biliary passages would thus have to be located in the nucleus of the liver cell itself. Pathologic vacuolization of nuclei, as well as of the protoplasm found in association with pathologic states of the liver cells, is intimately connected with the existence of an intranuclear and intraprotoplasmatic secretory canal system.

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THE PATHOLOGY OF RECURRENT APPENDICITIS.

WHETHER every case of appendicitis should be treated surgically or not, even when the most approved medical measures have failed to effect speedy relief, and whether or not the diseased appendix should be removed invariably, are still debatable questions. There can be no doubt that in many instances recovery, from the immediate attack at least, ensues without surgical intervention, and it is even probable that some attacks pursue a favorable course without so much as being recognized, though less commonly at present than in the not remote past. Death from peritonitis of obscure origin also is less common now than formerly.

When, however, one reflects upon the frequency with which an attack of appendicitis is followed by others when the diseased organ is permitted to remain, it becomes an exceedingly delicate matter to decide in the individual case whether it is better to undertake a radical operation or to submit to the uncertain risks and dangers that attend a lesion of undeterminable extent and degree. While the mortality from the disease may not be greater in competent medical than in equally competent surgical hands, the future of the case appears assuredly less certain under the former than under the latter conditions. The final decision, however, in favor of the one or the other course of procedure will depend ultimately upon a thorough appreciation of the pathology and the natural history of the morbid process.

It is for this reason that a recent report by Southam,[1] of the pathological conditions found in twenty cases of recurrent appendicitis treated by operation, will be received with especial interest. Of this number seven occurred in females and thirteen in males. The youngest patient was ten, the oldest forty-four years of age. In fifteen of the cases the patients were between fifteen and thirty years of age. In all of the specimens examined the appendix showed evidences of chronic inflammatory changes, with thickening of its coats. In some cases its lumen was uniformly narrowed and almost obliterated; in others it was partially or completely occluded at some point and dilated on the distal side of the obstruction, occasionally forming, when the occlusion was complete, a cystic cavity of some dimensions. In many instances the appendix was considerably shortened; it was frequently found bent upon itself and bound down by adhesions, in one case the tip almost touching the cæcal end of the process.

The contents of the appendix consisted either of clear mucus or of a muco-purulent fluid; in two cases a hard fæcal concretion was present in its interior, and in another a concretion which had ulcerated through its wall was found in an abscess cavity external to it. In most cases the inflammatory changes were not confined to the appendix itself, for evidences of appendicular peritonitis were generally found to be present, the peritonitis being usually of the adhesive variety, the inflammatory exudation that had been poured out round the appendix having undergone organization and forming adhesions. These were often very firm and extensive, surrounding the appendix and fixing it to the parietal peritoneum, omentum, cæcum, or small intestine. In some instances they were present after a second attack; in other instances they were absent after many attacks. When exceptionally dense and extensive, complete obstruction of the bowel may be produced from inclusion and compression of a small coil of small intestine in the adhesions, and if the condition is incapable of relief by operation the result is necessarily fatal.

In some instances the peritonitis was of the suppurative character, pus having formed in the neighborhood of the appendix. This complication was encountered in eight of the twenty cases. In six of these the suppuration was localized, an encysted intraperitoneal abscess being present. In two cases the suppuration was general, there being well-marked evidences of diffuse purulent peritonitis. When suppuration takes place it is often secondary to ulceration and perforation of the walls of the appendix, followed by escape of its contents. In one case the appendix, though not actually perforated, was extremely thinned at one point, which was found to correspond with an ulcer involving its mucous and muscular coats.

Among the twenty cases the duration of the symptoms ranged from four months to six years, and the number of attacks from two to ten or more. If cases of recurrent appendicitis are left to themselves attacks may recur at irregular intervals for years, and ultimately a cure may take place by a gradual process of obliteration of the lumen of the appendix and its conversion into a fibrous cord. Suppuration may, however, occur at any time; if an encysted abscess forms, the appendix should, after evacuation of its contents, usually shrivel up, becoming obliterated and causing no further trouble. On the other hand, if the suppuration is diffuse—that is, if there is general purulent peritonitis—the result will probably be fatal. Another complication, already mentioned, that may occur is intestinal obstruction from compression of a coil of bowel by adhesions.

Of the various theories advanced to explain the occurrence of appendicitis, the most plausible is that which regards the appendix as a diverticulum that readily allows of the accumulation and stagnation of

[1] The Lancet, June 5, 1897.

fæcal matter. This, mingling with the secretion from its mucous lining and undergoing fermentative or putrefactive changes, sets up a catarrhal inflammation, which may be followed by ulceration and perforation, or by thickening of its walls, the latter condition being that which is most commonly encountered in the recurrent form of the disease. The fæcal concretions found in the interior are probably the consequence and not the cause of the inflammation, being due to inspissation of its contents; but once formed, they no doubt tend to excite and keep up the recurrent attacks.

ENGLISH AND ITALIAN EXCLUSIVENESS.

English medical practitioners in Italy are bitterly complaining of an attempt that is being made by the medical profession in that country to prohibit by law physicians with foreign diplomas from practising there without having first obtained an Italian qualification. Americans, too, are interested in the matter, and they probably have more right to complain of this proposed treatment than the English. The Italians in this respect are but following in the footsteps of most of the other nations of Europe, and perhaps can hardly be blamed for endeavoring to protect the interests of their own medical men. The English deny that a man with a foreign degree is not allowed to practise in England, and it is certainly true that he can practise there, but he is so hampered by restrictions that the leave to do so is of no use. Unless a foreigner is registered he cannot recover fees by legal process, or give medical evidence in courts of law, or hold public offices, and, lastly, he may not sign a death certificate; so that in reality these restrictions act as a bar to his practising at all.

From a perusal of the British medical act of 1886, there would seem to be no especial difficulty in regard to the registration of a good foreign degree. The paragraph referring to foreign registration provides that a person who desires to be registered as a foreign practitioner must prove to the registrar that he holds a recognized foreign diploma granted in such a foreign country, and also that he is not a British subject, or that the diploma was not granted while he was domiciled in the United Kingdom, or was granted in the course of a period of not less than five years during which he was resident out of the country, or that he was practising in the United Kingdom on the said date and had been practising there or elsewhere for not less than ten years immediately preceding. He will then, on the payment of a fee not exceeding $25, be entitled to be registered without further examination. A recognized foreign diploma is one which is recognized for the time being by the General Medical Council as furnishing a sufficient guarantee of the possession of the required knowledge and skill for efficient practice. Although the Privy Council has power to override the decision of the General Medical Council, as a matter of fact, the recognition of equivalent qualifications rests with the Medical Council. Major Greenwood, M.D., in an article published in the *Medical Magazine* of 1894, says that the medical profession in England is quite in accord that it is highly desirable that the right to practise medicine there should not be granted to those who possess only a foreign degree. Foreign degrees are practically shut out by refusing to allow them to be registered, and this action is due to the opposition of the corporate degree-granting bodies. In Great Britain foreign degrees can be registered only when the applicant holds an English qualification. There is not on the British medical register the name of one man who holds only a foreign degree. There are few medical schools granting degrees or qualifications, even in the colonies of Great Britain, which are recognized as granting a right to practise in the United Kingdom. Thus it would seem that to all intents and purposes Italians desirous of practising medicine in England are prohibited to as great an extent as Englishmen will be in Italy if the new proposals become law. The United States, so far as the regulations ruling the practice of medicine are concerned, holds a different position in regard to Italy than England does, and is deserving of better treatment at her hands. Even in the States in which a four-years' course is compulsory, any foreigner possessing an equivalent diploma is allowed to present himself for examination, and if found competent is granted a license to practise.

However, after all, the question will most probably resolve itself into one of money. When the pecuniary situation is grasped by the Italian mind, and it is perceived that to drive away English and American doctors would be to drive away also English and American residents and tourists, the matter will present itself in a different light. When the interests of the country at large are seen to be seriously threatened, as they certainly would be by this change, more prudent counsels will prevail and affairs will be allowed to remain in *statu quo*. *The Lancet*, in a short article on the subject, speaks to the point: "Italy depends too much on British, American, and Anglo-colonial gold to thwart the requirement of its distributors. About one-third of her annual revenue is derived from the Anglo-American sources alone. To enact a law, therefore, which would tend to diminish her English-speaking population (resident or migratory) would be little short of suicidal. If it ever found a place on the statute book, the government would forthwith be besieged by the combined hotel-keeping and 'pension' interest clamoring for its immediate repeal."

VACCINATION IN AFGHANISTAN.

A notable triumph has been won in the field of scientific progress, and this, too, by a woman. The Ameer of Afghanistan, ruler of one of the most savage of races, has, through the influence of his private physician, Miss Hamilton, M.D., become a convert to a belief in the inoculation theory. Miss Hamilton visited England last summer with the Ameer's son, when she obtained a model for a stable for calves which are used for the purpose of procuring calf lymph. When she returned to Cabul she initiated the Ameer into the mystery of vaccination. The Ameer, who has on many

occasions showed his appreciation of the improvements of civilization and more particularly when they have seemed likely to benefit his country, was much impressed by what he learned of vaccination as a safeguard against small-pox. As Afghanistan is visited every year in the springtime by an outbreak of small-pox in virulent form, it has been decided to establish vaccine stations and to endeavor to inculcate in the minds of the warlike but uneducated Afghans the immense protection afforded by vaccination. Miss Hamilton is the only European physician in the country, so that the task of introducing vaccination and of educating the inhabitants to receive it will be a heavy one. If Miss Hamilton succeeds in her endeavor, it will be a notable triumph for her individually, and will also reflect credit on the ever-increasing body of women doctors. It is to be hoped that the antivaccinationists of England, who are very rabid at the present time, when they hear of the project in Afghanistan, will not forthwith dispatch some of their loquacious disciples to Afghanistan and inaugurate in that country a crusade against this life-preserving measure.

News of the Week.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending July 17, 1897. July 12th.—Surgeon C. G. Herndon ordered to special duty at naval rendezvous, Duluth, Minn., July 19th. July 16th.—Assistant Surgeon S. B. Palmer detached from the *Texas*, and ordered to the *Annapolis*, July 20th; Assistant Surgeon F. L. Pleadwell detached from the *Constellation*, July 17th, and ordered to the *Texas*, July 20th; Passed Assistant Surgeon G. B. Wilson ordered to the *Constellation*.

Dr. Frederick Holme Wiggin has been appointed a delegate from the New York State Medical Association to the Montreal meeting of the British Medical Association.

Obituary Notes.—Dr. James A. McLochlin, of this city, died at his summer home in Saratoga on July 16th, of renal trouble. He was forty-eight years old and was a graduate of the New York University in 1874. He was a member of both the County Society and the County Association.—Dr. Robert S. Hubbard, of Bridgeport, Conn., died at his home in that city on July 18th. His death was the result of a fall on his office steps. He was unconscious when picked up, and died in a few hours without recovering his senses. He was a graduate of the Yale Medical School in 1851.

The Missouri Medical League of St. Louis is the name of a newly organized society of medical practitioners in St. Louis, modelled after the New York Medical League. It is stated in the *Medical Review* that the organization is the outcome of the recent investigation of the committee on clinics and dispensaries appointed by the St. Louis Medical Society, and has for its object the elevation of the medical profession by influencing legislation to require a higher standard of general education before students can matriculate at a medical college and a higher standard of requirements for graduation in medicine. The suppression of free-dispensary and clinic abuses, *et id genus omne*, the fostering of fraternity between the members of the medical profession, and the support of a movement to secure a national department of public health, are also among the aims of the society. The first meeting of the new organization was held on July 1st.

The Society of Neurologists and Psychologists in Moscow has appointed a special committee to report upon the present state of inebriety in that city, and to draw up a plan for the erection of a hospital for inebriates.

The Health of Chicago.—For the week ended June 27th, the *Evening Post* states, the mortality rate in Chicago was 10.99, said to be the lowest ever reported for any large city.

Inspecting Water Tanks.—The inspectors of the New York City health department have been examining the water tanks on the roofs of the tenement houses, and have found many of them in a filthy condition. Wherever they were found to be dirty, the owners of the buildings have been forced to have them cleaned.

Safety at "Dead Man's Curve."—The killing or maiming of innocent pedestrians by the cable cars at Fourteenth Street in this city has now been abolished by the threat of the board of health to hold the officers of the company responsible if cars were run on the curves at a greater speed than two miles an hour. As soon as it became a question of personal safety to themselves, the officers of the company suddenly discovered a grip by means of which the speed of the cars could be easily regulated. Truly, "necessity is the mother of invention."

Small-pox in Mexico.—A dispatch from Pueblo says that black small-pox is epidemic there, and that many deaths have occurred.

A Possible Plague Ship.—A ship recently arrived at San Francisco from India has been quarantined, awaiting a determination of the nature of an illness from which one of the crew had died and two others were convalescent, the health officers fearing from the description given that it may have been the bubonic plague.

Collapse of a Nursing-Scheme in Canada.—The governor-general of Canada and Lady Aberdeen proposed recently to organize a "Victorian Order of Nurses," whose object would be to supply trained nurses to care for the poor. The governor-general, with infinite tact, issued a pamphlet in favor of the scheme, in which he remarked incidentally that "Canada needed more Dr. MacLures—men who were not in the profession for the sake of the fees alone." Much to the author's surprise and pain, this did not serve to

recommend the project to the men in the profession who were dependent for their living upon their fees, and they have expressed themselves so forcibly against such a method of commemorating the jubilee that its collapse is well-nigh assured.

A Case of Misplaced Confidence.—A man was recently arrested here for having perpetrated a fraud upon two eclectic practitioners in this State. According to *The Sun*, the doctors state that the man had some preparation which he said would remove superfluous hair without injury to the skin. They believed in his representations without first trying the preparation on hair, and got a paper from him which gave them the exclusive right to sell the preparation in their county. In consideration of the privilege, they gave him $125 and bought a lot of the preparation. They had large quantities of advertising matter sent out, extolling the drug, and soon began to treat patients. The preparation did not remove hair, and they say that their reputations have been injured and that they are out of pocket.

The British Medical Association.—Over two hundred members of the association in England have signified their intention to take part in the Montreal meeting.

The Right to Practise Dentistry in Scotland.—In the case of a man who had been prosecuted for the illegal practice of dentistry, the appeal court of Scotland has decided that for a person to put up a brass plate with the inscriptions "American Dentistry, A. Emslie" and "Dental Office," is not an offence against the dentists act, as it does not necessarily imply that A. Emslie is qualified and registered. The person, whose dentistry may really be as bad as the worst Scotch instead of being American, as his sign would imply, has the right therefore to continue his practice without let or hindrance.

Entertainments for the Members of the Moscow Congress.—A number of entertainments in honor of those who take part in the international congress will be provided for after the sessions have closed. One of these is an excursion to the health resorts in the Caucasus, during which many of the cities in southern Russia will be visited. The entire cost of the trip of ten days' or two weeks' duration will be only about $30. For those who prefer to go to St. Petersburg, there will be several receptions arranged for by the local entertainment committee under the chairmanship of Professor Pashutin, president of the Russian Medical Council and director of the Army Medical Academy in St. Petersburg. The following entertainments have been arranged: On August 28th a reception by the members of the profession and medical societies in the Salle de Noblesse. On the 29th there will be an excursion to Peterhof, with supper in the park, at the summer house of Monplaisir, and, on the same evening, a "rout" given by the Princess of Oldenburg. On the 30th the new anatomical museum in memory of Pirogof is to be formally opened in the morning, and in the evening there will be a "rout" given by the municipal authorities. August 31st and September 1st are to be given up to an inspection of some of the medical and other institutions of the city. A ladies' committee has been formed in connection with the congress, under the presidency of Mme. Skliffosofski, the wife of the president of the organizing committee. Members who expect to be accompanied by ladies are particularly requested to communicate the fact to the general secretary, Professor Roth.

The List of the Scottish Jubilee Honors is as long as the famous chapter on snakes in Ireland, and those who hoped to be knighted don't know what to make of it. The *British Medical Journal* tries to console the Scots by telling them that the Queen loves them and esteems them, and that she will doubtless give them at some other time the plums which it has pleased her in her wisdom to withhold from them on this glorious occasion.

Koch's Report on the Plague.—The Berlin correspondent of *The Sun* states that Koch has made a report giving the result of his investigations into the bubonic plague in India. He says that the bacillus possesses but little vitality outside of the bodies of men and animals, and adds that Haffkine's serum possesses undoubted protective qualities.

A Leper Dead in Jersey City.—A man supposed to be affected with leprosy, whose case has excited much interest here and across the river, died last week at his home in Jersey City. He was a motorman on a trolley road, and first noticed the skin trouble, which was originally thought to be eczema, about two years ago.

Casualties at the Jubilee Celebration. — Many prophets of evil foretold a great loss of life and much painful maiming in the crush of people assembled in London to view the jubilee procession, but their prognostications proved false. In spite of the fact that temporary stands were erected at all available points along the entire route, and of the more important fact that they were all filled to their utmost seating-capacity, not one collapsed. No one of those standing along the line was crushed to death, and most of the cases attended to by the medical corps, only two hundred and one in all, were of simple fainting. The number of accident cases treated in the hospitals was below the average of ordinary days, owing doubtless to the fact that wagon traffic was suspended in great part.

Injury to the German Emperor.—While cruising on his yacht one Sunday recently, Emperor William of Germany was struck on the head with some swinging cordage. The cable reports that one of his eyes was seriously injured, and that Duke Charles Theodore of Bavaria, an ophthalmologist, has been summoned to Kiel to examine him.

Professor von Kölliker, of Würzburg, the famous histologist, celebrated, on July 6th, the completion of his eightieth year and the golden jubilee of his professorship.

Sir James Reid, physician-in-ordinary to Queen Victoria, has been created a baronet by his grateful patient.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Continued from page 121.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

THE first day's session was called to order by the chairman, DR. MILO B. WARD, of Topeka, Kan., who delivered the

Annual Address.—The "healthy mother" is one of the most important subjects which can to-day engage the attention of physicians. To the work of Sims and Emmet, as pioneers in American gynæcology, was paid a due tribute, and the history of operations upon the female pelvic organs in America was passed in review from the earliest days. To American surgeons is due to a large degree the position now held by these branches of medicine. Gynæcology as a specialty can be said to date only from about 1869. The first society was formed in that year in Boston. To-day every well-equipped medical college has a full professorship of gynæcology. Conservatism should always exist, but its limitations should be more clearly defined. Electricity for the cure of fibroids and pelvic exudates is attended by so much harm at the hands of tinkers and unqualified operators that it has perhaps unjustly fallen into disrepute. The last word on the question has not yet been spoken, but only those fully qualified should attempt its use. A higher standard of qualification in those who attempt operative treatment in general of pelvic disease is called for. Many complications still baffle the most expert operators. The use of clamps instead of suture in vaginal hysterectomy was deprecated. It is always well to have the best clamps at hand, but it is best not to use them. Ligating the arteries for the cure of uterine fibroids has not yet been proven a successful procedure. A tribute was paid to the work of Philadelphia obstetricians and gynæcologists.

Uterine Retroposition.—The first paper, entitled "A Consideration of Some of the Conditions Influencing the Results of the Surgical Treatment of Uterine Retroposition," was read by DR. AUGUSTUS P. CLARKE, of Cambridge, Mass. The fact that various methods of treatment for versions and flexions have been devised is suggestive that the application of the means of relief for the presence of such pathological conditions has been attended with more or less difficulty. The various ligaments sometimes become inflamed, thickened, and pulpy. In such cases the connective tissue which penetrates their structure becomes vascular; this condition leads undoubtedly to the transformation of the parts. In other instances the round ligaments undergo fatty degeneration and atrophy, and become incapable thereby of sustaining the organ in its natural position. The occurrence of these changes is for the most part secondary to inflammation of the adjacent structures. In such cases the fundus will in all probability be found firmly adherent posteriorly.

After the lacerated tissues of the cervix and perineum have been repaired, an operation for shortening the round ligaments may be undertaken, should the displacement backward still continue to give rise to marked uncomfortable symptoms. If, however, the adhesions cannot be overcome and there are thickening of the fundus and induration of the corporeal structures of the uterus, due to metritis and peritoneal inflammation, the operation upon the ligaments would be contraindicated. Sudden and severe strain put upon the ligaments, such as may take place in lifting heavy bodies, is always to be avoided after the patient has found it necessary to submit to treatment for uterine displacement. Restoration of the perineum can almost always be safely undertaken, but, in order to have good results by combining with it the operation of narrowing the posterior wall of the vagina, it will be essential that the uterine corpus shall be brought into as nearly a normal condition as is possible.

Recent experiences have to a considerable extent dissipated the unfounded fears that the anteverted state of the uterus produced by the shortening of the round ligaments would interfere with subsequent pregnancy and parturient processes. The Alexander operation when resorted to in properly selected cases is not a mutilation; by it is removed no organ nor any structures that are ever regarded as essential to the normal function and to the perfection of the organism. The operation removes only tissue that has become excessive by cytogenic processes. The danger that hernia will follow the operation of shortening the round ligaments has been felt to be an objection to the procedure. Though such a sequel sometimes ensues, yet, if proper precaution be taken to effect ablation or narrowing of the inguinal canal, the risk will be reduced to the minimum. When hernia does appear after the operation, it is, according to the author's observation, mostly in those cases in which the inguinal canal is abnormally large and in which the muscular element in the vicinity has previously undergone atrophy and relaxation.

Ventrosuspension, hysterorrhaphy, vaginal fixation, cystopexy of the uterus, and operations upon the utero-recto-sacral supports are liable to be unfavorable as to their subsequent influence on pregnancy and parturition.

In those cases of retroposition in which it has become necessary to remove the adnexa on account of inflammation or other morbid conditions, the pedicles can be sutured to the peritoneum and to the peritoneal fascia on each side of the incision. Two small sutures may then be passed through the fundus to the anterior wall of the abdomen. This method of proceeding will firmly sustain the uterus, and will in most instances prove sufficient without the necessity of resorting to Alexander's operation. The sutures thus taken in such cases are rather compensatory than otherwise for the loss of uterine supports resulting from the removal of the adnexa. There is a rare class of cases in which but little if any perimetric adhesive inflammation occurs. In cases of this latter variety, as in all others of retroposition, there is a complication of more or less prolapse of the organ. Indeed, it is hardly to be conceived how a retrodisplacement can result without the previous occurrence of some degree of descent of the uterus.

In those cases in which the patient has reached the menopause and in which the backward displacement has been attended with complete and irreducible prolapse, hysterectomy will prove the most advisable for insuring permanent relief.

DR. HALL, of Missouri, thought too many hernias result from the Alexander operation. The future operation for retrodisplacement is fixing the uterus forward through the vagina, as described by Vineberg. This fixes it in a more nearly normal position without the disadvantages of the Alexander operation.

DR. HUMISTON, of Ohio, failed to find an indication for the Alexander operation. A radical operation is called for if there are diseased adnexa.

DR. MASSEY, of Philadelphia, did not believe that inflammation preceded the displacement, as a rule, but followed it.

DR. KANE suggested causing patients to assume the knee-chest position, with calisthenic exercises. This is the next best thing to having the patient walk on all fours.

DR. NEWMANN, of Chicago, did not think the round

ligaments have any supportive power, but shortening them will do something if sufficient support from below is furnished.

Dr. Lawrence, of Columbus, said the symptoms from which these patients suffer are not dependent upon the displacement but upon the diseased adnexa, endometritis, etc.; and here the Alexander operation is not devoid of danger. Peritonitis may follow. Ventral fixation cannot be expected to benefit the patient if it is true that anteversions and anteflexions are about as bad as the posterior. The broad ligament is the true supporter, and by shortening it we might accomplish our purpose.

Dr. Clarke, in closing the discussion, said if the parts below have been restored, unless the round ligaments are diseased, they will be adequate to hold up the uterus.

Mechanism and Treatment of Perineal Lacerations was the title of a paper by Dr. Joseph Price, of Philadelphia. Many men say they have never ruptured a perineum. Such a statement can have but one explanation. More attention should be directed to perineal lacerations, and the functions of the tissues involved should be better studied. Attempts at repair should be undertaken only after a full apprenticeship has been served in delicate mechanics. Nature despises blundering as she does a vacuum. Completeness should be the chief aim in plastic surgery of the perineum, and the attempt made to restore the parts to as near the normal as possible. Every perineal tear begins on the inside. Outside tears without internal laceration are of extreme rarity. One should remember always that the skin may not be lacerated in very extensive tears. Complete tears include all muscle and fascial tissues, and should be repaired in the line of their anatomical construction. Flap-splitting operations are misleading and fallacious, superficial procedures, not going to the real origin. An end-to-end adaptation of the torn muscle must be substituted for them. The Emmet operation is the foundation for all operations in deep tears, either with or without involvement of the sphincter. The sphincter is a distinct anatomical unit. When the sphincter ani is ruptured, the muscle is straightened, the depressions on either side of the anus being caused by the retraction of the torn ends. Short strong needles and good silver wire, a needle-holder without lock, a shot compressor and tenaculum are all that is required. The restoration of the pelvic floor is the ideal operation for the exaggerated tears, as shown in Baker-Brown's book.

Dr. Stone, of Washington, thought the Emmet operation was as difficult to comprehend as anything in surgery. To make certain points clear he drew diagrams of the crown suture, as applied by himself. He thought Emmet was seldom followed in his plan of introducing all the sutures before tying any. The crown suture is applied from the myrtiform caruncles upward and inward, emerging at a corresponding point on the opposite side. In tying, the vagina is shortened.

Dr. Price said the end of the muscle is the last part to be denuded. To do this a tenaculum must be buried into the muscle and repeated stitches passed deeply. All secondary operations on the perineum should be obviated by immediate operation without anæsthetics at the time the tear occurs. There is no danger and no difficulty in this. All operations following the line of Emmet's operation must of necessity be in the nature of modifications.

Dr. MacDonald, of Albany, said that some have to continue doing a flap-splitting operation, and this, too, with satisfaction to the patient. Here you must first undo the scar effect, following the lines of scar and separating the anterior from the posterior tissues. Buried fine catgut or Lembert suture enables one to restore the rectal functions with resiliency of tissue.

Dr. Eastman said the anal sphincter must be completely dilated and put at rest one week before operation. No process of sterilization is capable of cleansing the operator's hands, so an assistant must do all dilating at the time of operation.

Dr. S. M. Hay, of Toronto, Canada, being introduced to the section, said he regretted there had been any differences of opinion between Canada and the United States in regard to the British Medical Association meeting. Political difficulties might now and then arise, but the professional relations should always remain pleasant.

Dr. Goldspohn, of Chicago, said that perineorrhaphy proper must be done from within the vagina; hence the Lawson Tait procedure should naturally be condemned. It is not necessary to sacrifice tissue. He carried out flap splitting, but beginning within the hymen.

Dr. Fisher, of Philadelphia, had seen many flap-splitting operations, and they do not stand the test of time. Central laceration not involving the sphincter does not occasion prolapse. In lateral lacerations and those involving the sphincter, the Emmet operation is required. The posterior wall is here held up against the anterior. The crest of the rectocele is that point which corresponds with the opening of the urethra anteriorly. All do not follow this rule, which, however, is the first to claim attention.

Dr. Humiston operates without general anæsthesia, using less than one grain of cocaine by injection, or forty minims of a two-per-cent. solution.

Dr. Price, in closing, said silver acts as a splint to the tissues, but silkworm suture does the same to a lesser degree. Shouldered and shielded silver wire gives the most valuable suture. It comes out dry.

The Technique of Vaginal Section, Irrespective of Hysterectomy, for Diseased Appendages and Small Pelvic Tumors was the title of the next paper, read by Dr. A. Goelet, of New York (see p. 122).

In the discussion Dr. Howard Kelly, of Baltimore, preferred vaginal section in instances presenting relaxed vagina, and especially Edebohls' method to secure free drainage. Extra-uterine pregnancy, when pelvic hæmatocele is present, is best treated by this method. In extreme bleeding he advises proceeding with abdominal section.

Dr. Eastman, of Indianapolis, said he would not consent to operate in the exaggerated lithotomy posture, preferring the Sims position for all vaginal operations.

Dr. Goelet said some conservative work can be well done through the vagina, and infection from the cervix is more imaginary than real.

Renal Suppuration and the Value of Micro-Urinalysis as an Aid to Its Definite Diagnosis was discussed in a paper presented by Dr. F. H. Manly, of New York.

In the discussion Dr. Duning said pyonephrosis affecting one kidney alone is a curable disease. He considered that the discovery of pus coming from one or the other side before it reached the bladder was of importance. He spoke of a case of multiple abscess of the kidney with small calculi in the abscess cavities. In one instance he opened and drained, with amelioration of all symptoms. Abscesses developed in other points, and the kidney was removed. The value of bladder exploration with the cystoscope and head mirror was spoken of. The ureter can be catheterized, and in this way the side affected can be made out.

Dr. Noble, of Atlanta, spoke of the absolute diagnosis being made possible by the catheter introduced into the ureter with the aid of cystoscopic examination. This is of more importance than examination of the urine for pus.

Dr. Manly, in closing, said the catheter had a very limited application in male subjects, especially those with stricture.

The Destiny of Vaginal Hysterectomy for Malignant Disease was discussed in a paper by Dr. L. C. Hall, of Kansas City, Mo. The discovery of cancerous disease is often made only after the cervix has been destroyed. The author made a strong plea for early and frequent examination, so that these cancers of the uterus may be early discovered and operated upon. Most cases when presented are inoperable, at least by the vaginal route. We are forced to admit that the latter for the majority of cases is a doubtful expedient. The danger of invasion of other important structures precludes the possibility of complete removal. The method which permits of inspection must become that of election. The author thought that Clark's method will supersede vaginal hysterectomy.

Dr. Janvrin, of New York, said these patients usually came to the surgeon so late that vaginal hysterectomy was seldom justified. He had thus operated many times for cancer. Women ought to come at an earlier stage, in which the cervix alone may be affected. In the majority of cases operation in the early stage, while the patient is still free from general systemic infection, offers the best chances of cure, and in all such an operation can be successfully carried out. He had reported statistics last year, showing that thirty-three per cent. of his cases were still living. When the glands are involved in a late stage, the disease is sure to return.

Dr. Eastman advocated operation in desperate cases to relieve the patient from the disagreeable features of the progressing disease and to prolong life. It is justifiable to operate even late for the relief afforded. In cancer of the fundus perhaps better results are to be expected than when the cervix is involved. We must go wide of the disease. The pedicle can be well fixed within the wound, so that any return of the disease can be noted.

Dr. Dudley, of New York, said the destiny of vaginal hysterectomy for malignant disease depends simply upon diagnosis. If the uterus is free, vaginal hysterectomy is a proper operation. If any portion of the vaginal wall or broad ligament is involved, another operation is called for—a combined method. No one can tell how far the disease has gone when the broad ligaments are involved.

Dr. Frederick, of Buffalo, reported a case bearing on the rapidity with which cancer progresses. The patient was still alive and in fair condition after seven years, without operation.

Dr. Kelly thought that these cancers should be taken out by the way of the abdomen, even removing glands lying on the abdominal aorta.

Dr. Janvrin asked for statistics.

Dr. Kelly said the immediate mortality was greater, but the ultimate results must be better. Every woman over thirty years of age should be examined three months after bearing a child, and the condition noted. In this way many cancers can be discovered early enough to give good chance of success.

Dr. Price said, in reply to Dr. Dudley and others, that in going up to a certain point in operation was good theoretically, but difficult to carry out. He preferred the vaginal route to all others, excepting in the complications on the part of the tubes and ovaries referred to by Dr. Dudley. Here he preferred to attack from above. Recurrences in the bowels and abdominal organs often cause horrible death.

Dr. Thompson spoke of the importance of early and exact diagnosis, not only in cancer of the uterus, but of the breast.

The Treatment of Circumscribed Pelvic Hemorrhage was the title of a paper next read by Dr. M. Rosenwasser, of Cleveland, Ohio. The causes are numerous; many instances are due to extra-uterine pregnancy. Unless there is absolute indication for immediate operation, rest under restriction, in hospital if possible, is advised. Instances from a large number of personal cases were related. When watched, over half will recover if put upon perfect rest for six weeks. The conclusions reached by the reader were:

1. That unless they require immediate operation for cause when first seen, they can be submitted to careful supervision in hospital or home without danger.

2. That when thus watched, more than one-half will get well without operation, by keeping them at absolute rest for an average period of six or eight weeks.

3. That when they cannot be watched, or refuse to rest, early operation is to be urgently recommended.

4. That operation is necessary only for special indications, of which the most important are sepsis with or without suppuration, recurrent hemorrhage, growth of tumor, non-absorption after reasonable time, the compression of the pelvic viscera (rectum or ureters).

5. Abdominal section is to be preferred to vaginal incision in most cases.

Dr. McMurtry, of Louisville, said that as our knowledge has increased, the matter has become simplified. Many terms for intrapelvic hemorrhage should be dropped. Almost all instances are due to ruptured tubal pregnancy.

Dr. Goelet could not believe that pregnancy was nearly so often the cause as claimed. The thing to do is to remove the clot.

Dr. Noble had not seen hemorrhage due to other cause than tubal pregnancy. He operates as soon as the diagnosis is made, and has lost no case when tube and clot were removed.

Dr. Dunn said if the rupture occurs early it may not be necessary to remove the tube.

Dr. Dudley thought there were other causes than extra-uterine pregnancy. One of the many causes is the puncture of a midwife in producing abortion. Patients come into the hospital septic after such attempts. Ulceration attended with hemorrhage at the extremity of a tube may account for a clot.

Dr. Duff, of Pittsburg, thought that in most cases of sudden hemorrhage it was due to extra-uterine pregnancy. He thought the danger of puncturing the uterus was greater than is usually admitted. He reported an instance of fatal puncture.

Dr. Cordier thought this paper might set us back ten years. He agreed as to the cause of hemorrhage, but he was unable to understand how the diagnosis is made that the hemorrhage is circumscribed or will remain so. Most cases develop rupture before the twelfth week. Operation should be done by the abdominal route at the time of sudden hemorrhage.

Dr. Kelly said that when circumscribed and held down the patient with hemorrhage could be safely left under rest and observation.

Dr Rosenwasser said this was the third report he had made on the subject. He had no hobby to ride, but reported cases as they occurred. If the truth can "set back" anything, he wished it set back.

Some Reflex Disturbances Due to Pelvic Disease, with Report of Cases, were discussed by Dr. J. M. Duff, of Pittsburg. The following cases were reported:

Case I.—Metritis and ovaritis, insanity. Vaginal hysterectomy, cure of insanity.

Case II.—Removal of tubes and ovaries for inflammation, followed by mania (suicidal) and mental disease, lasting one year. Final recovery.

Case III.—Constant vomiting, reflex from cystic ovary. Removal of ovary; prompt cure.

Case IV.—Constant vomiting; patient nourished for eighteen weeks by enemata. Removal of pus tubes,

followed by cessation of vomiting and cure of patient.

Case V.—Sciatica of two years' standing, patient unable to walk. Cured promptly by removal of diseased tube and ovary on the same side.

Case VI.—Epileptoid seizures continuing for eight years. Insomnia and general neurotic condition, probably cured by removal of the uterus and appendages. Time since operation too short to draw positive conclusions.

Dr. Kelly said the paper well illustrated the fact that in treatment the pelvic organs cannot be separated from the whole system.

Dr. Tuttle said we must establish an increased nutrition of the nerve centres in these cases by rest, over-feeding at regular intervals, and regulation of the functions, with increased secretion.

Dr. Goldspohn spoke of relieving severe sciatica by removing the appendages.

Dr. Duff related an instance of epileptoid seizure before and after operation, in which the post-mortem revealed cerebral tumors, explaining the failure of the pelvic operation to give relief.

The Midwife Question in America was discussed in a paper by Dr. C. S. Bacon, of Chicago, Ill.

Dr. Duff thought clandestine midwives should be compelled to leave the field. To accomplish this, legitimate midwives should be licensed, and they would soon drive out the wrongdoers.

Dr. Baldwin, of Columbus, thought there was a place in this country for the educated midwife. The physician could not afford to give the time to the proper treatment of prolonged obstetric cases. In the Columbus school an attempt had been made to establish a midwifery school, but it had not succeeded. We must look to legislation backed by public sentiment.

Dr. Burns thought that in large cities the dispensary would solve the problem and make the midwife soon a thing of the past.

Dr. Newmann thought Chicago was indebted to Dr. Bacon for the work he has done in this line. Many districts are not reached by the dispensary, the lady physician, or the trained nurse, and we must come to depend upon the midwife, who should be under careful supervision. Dr. Bacon thought it unwise to make paupers of the class who now employ midwives. There are too many paupers already. Four-fifths of obstetric cases are now attended by midwives.

New Advances in the Treatment of Fibroid Uteri, a paper by Dr. Howard A. Kelly, of Baltimore, was next read. He predicted that the next great wave of advance would be in the line of conservatism. He advocated conservative treatment of myomatous uteri. He would excise any number of myomata and sew up the incisions. This in large uteri is more difficult than to remove the whole uterus. If the patient's condition is good, and an operation lasts but fifty minutes, and the patient is under thirty-seven years of age, myomectomy should be done. A free incision is made, the uterus is lifted out, and the tumors are then excised. A uterus thus treated is somewhat analogous to a Cæsarean uterus with multiple wounds. The speaker said he had made as many as nine incisions. The cavity is usually not opened, but he has opened it from end to end. In one case the entire anterior wall of the uterus was removed, leaving only the mucous surface of the posterior wall. This operation conserves a natural function which is a distinctive attribute of sex.

Vaginal Section in Extra-Uterine Pregnancy.—Dr. Lewis Schooler, of Des Moines, Iowa, read the paper. By this is meant an ample enough opening for the extraction of fœtal membranes. To-day, contrary to what was taught in former times, the diagnosis of extra-uterine pregnancy can be made with accuracy. The writer did not believe that hernias are so frequent in the vaginal as in the abdominal method. If after a lapse of time the vaginal operation is found to relieve a large percentage of cases, it will have a place; otherwise it will become a forgotten method.

Dr. Rosenwasser said that, while free to operate, he did not think, as Drs. J. and M. Price did, that every case of extra-uterine pregnancy should be operated upon. Many patients get well.

Dr. Duff said his experience justified him in saying that every case should be operated upon. He had seen patients perish who refused operation. We cannot always determine which are the safe cases to leave. We should always be ready to do transfusion with the normal salt solution by the direct method.

Dr. Schooler said few cases could be operated upon successfully through the vagina.

Dr. M. Price said we must not only operate, but operate at once without a moment's delay, by the upper route in preference.

Extra-Uterine Pregnancy, with Report of Cases, was a paper by Dr. M. Price, of Philadelphia. A series of cases was related, showing the results of operation. The urgent indication is the immediate stoppage of hemorrhage; the only way to do this is to open the abdomen and tie the vessels, no matter in what condition the woman may be, so long as she is not dead.

The Vaginal Route in Operation for Ruptured Tubal Pregnancy was the title of a paper by Dr. J. Wesley Bovée, of Washington, D. C., in which he stated that many cases of rupured tubal pregnancy probably escape attention, owing to the slight discomfort of the patient or to improper diagnosis being made and procrastination permitting nature to cure the condition. This class, however, he thought is a very small minority, else more of such cases would be found as a complication when abdominal section is made. He claimed that many cases that are treated are slight and not very dangerous in themselves. These cases can in many instances be treated by operation through the vagina, and to substantiate his claims he referred to the work of Kelly, Miller, and others and reported six successful cases of his own treated in this manner. His conclusions were: 1, that the vaginal route is preferable for operation for ruptured tubal pregnancy when the hemorrhage has ceased or is slow, when the escaped blood is limited to the pelvic excavation, and especially if a limiting diaphragm has formed above it; 2, that the vaginal route is freer of shock, is less liable to permit infection, and furnishes better drainage; 3, that there is less liability to removal of adnexa than when the abdomen is opened; 4, that the period of convalescence is shorter and devoid of the usual complications of abdominal section.

Injuries of Parturition; the Time, Methods, and Reason for Repair.—Dr. A. H. Tuttle, of Cambridge, Mass., was the author. The paper was introduced with the report of a case of severe laceration repaired one week after the accident. The writer pointed out the fact that many obstetricians neglect to make a careful examination of their patient at the close of labor, and that unless this is done in good light, turning the vagina out and inspecting the cervix and deepest portions of the vagina, it is impossible for them to form any idea whatever of the extent of the injuries. He went on to describe the various lesions, and pointed out with emphasis that the subperitoneal space is frequently opened by a tear through the cervix that passes beyond its junction with the vagina, and also by a direct tear of the vagina in its deepest portions, at the sides and vault, entirely distinct from the tears extending from the perineal body up the lateral sulci, and which in extreme cases extends the full length of the vagina along the sides, parallel to the urethra and terminating in the tissues that form the prepuce of the clitoris.

He claimed that if both of these tears are not satisfactorily repaired at the time of injury, healing will occur by secondary intention, a mild or severe infection follows, and the patient after a protracted convalescence is left with a uterus fixed high and the ovaries bound down by adhesions. The path of infection is direct and not by the way of or necessarily involving the uterus. He recommended the primary repair of all lesions of parturition, this to be done in the same careful manner as is ordinarily exercised in a secondary operation, with the patient on a table, plenty of assistance, and strict antiseptic and aseptic measures. If the accident occurs at night and assistance is not at hand, the patient should be given ergot, the blood squeezed out of the uterus, and an aseptic pad applied. The case can then be left for from ten to twenty-four hours to suit the convenience of the attendants. He claimed that repair can be done as easily at the end of ten hours as at the end of the first, if the raw surfaces are slightly scraped with a knife or sharp curette, and that the cervix, owing to the retraction of the uterus, can be treated much more easily. He employs animal sutures in the repair of the parts. The lacerations of the rectum, skin, and mucous membranes are closed with buried sutures, a fine strand being used for each, and the torn edges of the muscles are brought back into exact apposition and in the same position they occupied before the accident by figure-of-eight suturing and a number of superficial layers. In closing the rectal and vaginal tears the necessity of starting the suture high enough to close tightly the upper angles was carefully pointed out.

The results of the operations were almost uniformly perfect. In one case the stiches gave way, but the wound was opened up, cleaned, and repaired again, a few days after the first operation, and healed by primary union. In three cases stitch abscess formed, opened outward or into the vagina, and healed spontaneously, leaving a very satisfactory perineum. In his conclusions Dr. Tuttle said that in the lives of many women there is no time more opportune for the repair of the parts than that occupied for her convalescence from labor, and that a perfect operation will shorten this period; that the public should be instructed in the fact that injuries during parturition are unavoidable and cast a reflection on the obstetrician only when their careful repair is neglected; that the best way to avoid a suit for malpractice for these injuries is to call in assistants who act as witnesses, and to repair or offer to repair the parts; that old tears may be repaired at the same time; that the obstetrician should be better educated in the repair of these injuries; that a satisfactory repair of the injuries at the time of their occurrence is the best way to prevent a majority of the ills of women which arise from disease of the pelvic organs.

Dr. Duff said lacerations are much more frequent than is usually believed. The profession is blamed for laceration because of the popular and occasional professional ignorance of this frequency; some look upon the intact external skin as an evidence that there is no laceration. No one thing so indicates the difference between the general and special practitioner as this failure to discover a tear in the presence of intact skin. We must be honest with one another and acknowledge these failures.

Dr. Hall said he believed in making repair as soon as one can get the instruments sterilized and dressings ready. There should not be too much trimming of tissues.

Dr. Allen preferred to wait until the second or fourth day. He thought there was no more danger of sepsis and indeed less.

Dr. Fisher believed laceration of the pelvic floor extremely frequent. That of the perineum is usually insignificant; without involvement of muscle, it is an external wound easily repaired. He prefers the interruptured suture, and operates without anæsthesia. As an antiseptic eucaine is employed.

Dr. Da Costa said that tears in the perineum proper occur in thirty per cent. of cases; many do not need attention. Physicians fortunate enough to have had no tears to report may be incapable of recognizing them. As soon as the placenta is delivered, he would cleanse and approximate at once with suture without trimming the parts; the latter fall into place in the healing. Failure is rare. Serrefines will answer for moderate cases.

Fibroid Tumor of the Vagina, with the Report of a Case, was the paper by Dr. J. M. Emmert, of Atlantic, Iowa. The paper was based upon an investigation of the subject by a circular letter sent out to a large number of operators, and upon the author's personal experience. Twelve published and twelve unpublished cases were reported. Out of sixteen patients, ten were over thirty and under forty years of age. The attachment was reported as being: in ten in in the anterior, in five in the posterior, in two in the lateral walls. The history and subsequent histologic examination proved the author's case to have been one of fibroid. The tumor was enucleated by incising about the base and peeling out the tumor. In the investigation five or six cases were excluded from the literature as doubtful.

One Hundred Cases of Atresia and Stenosis Vaginalis in Labor, with Thirteen Fatal Cases, was the title of a paper by Dr. J. J. E. Maher, of New York. The oldest case in literature is that observed by Louis, one hundred years ago. The conclusions drawn from all cases and especially the fatal ones are:

1. That from seventy to eighty per cent of all these obstructions being found in the middle third or at the orifice of the vagina, a predisposing condition may be discovered in an increase of the muscular tonus at these points.

2. That the size of the opening does not necessarily jeopardize the result, inasmuch as none of the complete atresia cases proved fatal, and among the fatal cases four had openings large enough for the finger to pass.

3. That the resistance can be overcome in every case is evidenced by the fact that only two of the ten cases termed cartilaginous proved fatal.

4. That the thickness, which in fifteen cases was stated as varying from twenty millimetres to that of the entire length of the vagina, is not an insuperable barrier, for only two of such dimensions were fatal. Of the other two mentioned with a fatal issue, one gave a measurement of twelve millimetres and the other was characterized as thin.

5. That there is practically no difference in the character of the stricture, the site, location of opening, central or not, resistance or thickness, between the congenital or post-partum cases, which amounted to eighty-seven per cent. of the whole.

6. That the complication should not necessarily have been fatal except possibly in two cases, one of contracted pelvis with shoulder presentation, and one of twin pregnancy.

7. That the various methods of treatment applied both to the obstruction and to the delivery do not make a bad showing when it is remembered that many of these subjects were in labor for days before interference was attempted or allowed.

8. A grave error is a misconceived idea of the powers of nature. The author has met with three cases of atresia and stenosis. There was in all an inflammatory condition of the vaginal mucosa behind the barrier.

Studies in Gynæcology from the Service of the Woman's Hospital of Philadelphia.—Dr. Anna M.

Fullerton, of Philadelphia, read the paper. She said that whenever she was able to reach a woman's understanding and secure her co-operation little difficulty was experienced in carrying out suitable measures. Education in physiological laws was called for. As conservers of woman's health physicians should influence the education of young men. Women should be taught the virtue and the dignity of true wifehood and motherhood as controlled by physiological laws.

Dr. Kelly said that doctors are too apt to pass over slight symptoms in their female patients, and neglect leucorrhœas and complaints which if properly managed would not result in more serious troubles. In obstetrics more cleanly attention should be paid the patient. The obstetric binder had better be thrown aside. Personal cleanliness is emphasized by the physician wearing a white duck suit in the lying-in room. The scrubbing brush for the nails should be quite stiff. Less license should be given men in morality.

The Chairman asked Dr. Fullerton her opinion of the effect of the bicycle.

Dr. Fullerton answered that in the absence of pelvic disease it tends to increase the muscular development and does good. After exercise has developed the muscles, walking can be indulged in better than before. There are no bladder troubles arising from the use of the wheel, if the saddle is all right. The corset should not be worn by women in riding.

The Technique of Abdominal Hysterectomy was the subject of a paper read by Dr. J. F. Baldwin, of Columbus, Ohio. His method may be described in brief as follows:

Seizure of the broad ligament with a long clamp from just beyond the ovary to the body of the uterus, above the uterine artery; clamping the ovarian artery near the uterus; severing the broad ligament along the clamp first applied; making a peritoneal flap anteriorly and posteriorly between the tips of the two lateral clamps; separating the folds of the broad ligament between the point of the clamp and the uterus, and seizing the uterine artery; removing the body of the uterus at or below the internal os, making anterior and posterior flaps. The uterine artery is isolated from surrounding tissue and tied as far back as possible with fine silk or kangaroo tendon; the round ligament caught with forceps and the long clamp removed from the broad ligament; the ovarian artery brought out between the folds of the broad ligament and ligated with fine silk or catgut; a gauze drain passed through the cervix from above into the vagina, so as mechanically to clean and dilate the cervix; with kangaroo tendon the uterine flaps are next brought together, the round ligament on each side being brought down and sutured between the flaps; the peritoneal layers of the broad ligament are next infolded and united by a running suture of kangaroo tendon, which passes down to the cervix, uniting the infolded peritoneal flaps over the suture already inserted in the cervical tissue, and then up on the opposite side. As thus completed the pelvic floor is entirely smooth, with no projecting points of raw surface.

The points of novelty claimed for this technique are in the bringing in of the round ligaments and the snug drawing in of the broad ligaments so as to support the cervical plug, which thus sustains the vault of the vagina. The advantages of this method of operating are: (1) Such a shutting off of the vagina as to reduce to a minimum danger of infection from that source. (2) The ligature placed around the uterine artery is entirely outside of the uterine wound, and being buried in the tissues is much less likely to give any trouble. (3) The snug closing of the cervical tissue prevents oozing. (4) The smooth peritoneum in the floor of the pelvis, having no projecting stumps or raw surfaces, reduces to an absolute minimum the danger of intestinal adhesions. (5) The implantation of the round ligaments and the puckering in of the broad ligaments prevent prolapse of the cervical stump and vagina. (6) The use of the clamps on the broad ligaments obviates hemorrhage, leaves the parts in better shape for the subsequent steps of the operation, and saves considerable time.

The paper was based on a study of ninety-five operations, with a mortality of 5.26 per cent.

(*To be Continued.*)

MEDICAL AND CHIRURGICAL FACULTY OF THE STATE OF MARYLAND.

Ninety-Ninth Annual Session, Held at the Hall of the Faculty, April 27, 28, 29, and 30, 1897.

Tuesday, April 27th—First Day.

President's Addresss.—Dr. William Osler delivered the president's address on "Functions of the State Faculty." He spoke of the old age of this society and the fact that only one other organization had a similar name. The need of medical societies is very evident with physicians, as a rule living so much to themselves, and they tend to rub off corners and widen personal interest. As this is the day of consolidation, the speaker suggested that it would be well if all the local societies would consolidate with the State Faculty as sections, just as has been done in the New York Academy of Medicine. The library of the faculty is growing each year and is of great value to the members. The man who does not read books and journals does not keep up with the times. Soon the Faculty will celebrate its one hundredth anniversary, and on this occasion opportunity should be taken to endow the faculty and make it a powerful body in the State.

The Care of the Dependent Insane in Maryland.—This discussion was opened by Dr. E. N. Brush, who was followed by Dr. Henry H. Hurd, of the Johns Hopkins Hospital. The speakers emphasized the fact that the insane were the children of the State and should be taken care of by the State. The insane should not be cared for in almshouses, where the number of attendants is small and the conditions are not favorable for recovery, but in a special hospital for their treatment. The lunacy commission of Maryland does the very best it can, probably, with the laws which are on the statute book, but the laws are very defective and vague, and throughout the smaller towns and counties of the State the physicians for the insane, being appointed politically, take very little interest in their work. The papers of commitment are often faulty; the statistics of insanity in Maryland also are not reliable, and it is not likely that any one knows how many insane persons there are. Many could recover under proper treatment, and they require more than good food and clothing.

In answer to these statements, Dr. William Lee, the secretary of the lunacy commission, said that since the organization of this commission in 1886 there had been a gradual improvement in the care of the dependent insane and that this had gone on from year to year; that while there might be some objections as compared with States much wealthier than Maryland, and the insane might be made more comfortable under other conditions, still the commission has done its very best under the existing laws.

Dr. Rohé also spoke on the same general subject, and said that in his opinion the insane were better cared for than they were formerly.

Peritonitis.—This was a special subject for discussion at this session. Dr. Simon Flexner spoke of the pathology and etiology. This is a very large subject and the manner of approaching it is difficult. The peritoneum is able to resist a great deal and it can dispose of foreign substances up to a certain limit. Not all parts of it carry on absorption, but only a limited portion, that near the central tendon of the diaphragm. Stomata between the endothelial cells do not exist, but fluids may pass through, and even solids sometimes escape; they are carried through by cells. Some substances interfere with this power of absorption, but quite an amount can be absorbed, and even bacterial organisms can be destroyed as long as the peritoneum is intact. At the Johns Hopkins Hospital he had records of one hundred and ten cases of acute peritonitis in man, with the bacteriological examination, and these cases were divided into certain groups. We must admit, first of all, an idiopathic or primary peritonitis. Twelve idiopathic cases were in this number. In all these cases there were pre-existing conditions predisposing to this peritonitis, such as chronic heart disease, chronic kidney disease, etc. Persons subject to chronic diseases are more liable to bacterial infection. In several cases the peritoneum was one of several serous surfaces involved in the body. There were thirty-three cases of exogenous peritonitis, in which the invasion was from without, and in those cases laparotomy had been performed and certain other operations had been done. Finally there is an endogenous form, in which the infection is from within; it is an intestinal form. Fifty out of one hundred and ten cases which he found recorded were in the intestinal tract, from a perforated appendix or some such cause. In studying the bacteriology of these cases it is interesting to note that in the first group the staphylococcus aureus and the streptococcus are present as mono-infections. In the second group there are some mono-infections and many poly-infections, such as by the staphylococcus, the streptococcus, and the colon bacillus, etc. In the third group infection usually comes from some injury to the intestines; there is a poly-infection, such as by the streptococcus and the colon bacillus together. Septic peritonitis and suppurative peritonitis are terms used as if they designated distinct conditions. Peritonitis in the absence of the micro-organism is very rare indeed, but it may occur. The fibrino-purulent form is the one more usually met with. The mycotic form is one in which the symptoms run such a rapid course that there is little time for the formation of bacteria and there is very little reaction on the part of the peritoneum. This division, however, is not necessary.

Dr. S. C. Chew said that the diagnosis of peritonitis was sometimes easy and sometimes very difficult, and again there were varying shades of difference between these two extremes; in general it is easy when the case is typical. The person's history in the case is important. He instanced conditions that may be mistaken for peritonitis.

Dr. Charles M. Ellis, of Elkton, said it is not easy to draw a sharp line of demarcation between medical and surgical peritonitis; the surgeon is not so successful. If the operation is done after the tenth day the chances are good, but many cases recover anyhow: still after ten days recoveries are more frequent than is commonly supposed. Many cases belong to surgery from the beginning. Nature seems to understand the treatment by fixing the parts. Besides this, treatment should be supplemented by rest, little food by the mouth, saline cathartics at the beginning, and opiates.

Wednesday, April 28th—Second Day.

Rabies.—Dr. John Ruhräh spoke of the preventive treatment of rabies. The disease is very common where there are no dog laws, but where there are a high dog tax and careful supervision there are few cases of hydrophobia. The inoculation period is about ten weeks, although it can be as short as two or three. The shortest on record was twenty-six days, while in one case it was eighteen months. Deaths in three weeks are rare. In the cases which were reported, about forty-seven per cent. of those bitten developed the disease. Men have a greater mortality than women, and children the greatest of all. Eight per cent. of suspected cases developed. When the wound was immediately cauterized the mortality reached only thirty-three per cent. of the forty-seven per cent. mentioned above, while in the uncauterized it reached eighty per cent. In the department of the Seine mortality of hydrophobia was twenty-five per cent. the first year in the Pasteur Institute, and sixteen per cent. the second year. The virus affects chiefly the central nervous system. In preparing virus for use on man a rabbit is inoculated from a rabid dog. Pasteur's idea was to make a modified form of the disease.

Dr. William H. Welch said that in drawing conclusions it is well to remember such a disease as hydrophobia exists. This is unquestionable. Mistakes occur, but the disease has characteristic symptoms. Inoculation in animals in series is a positive pathological proof of the existence of the disease. The state of mind has nothing to do with the matter, nor the element of fear, any more than syphilophobia can cause syphilis. The method of treatment rests on a complicated experimental basis, which is just as satisfactory as is the treatment of diphtheria. The best way of finding its value is by the statistical method and by this we show that the treatment is efficacious. It is not a sure cure; failures occur, but are not numerous.

Microscopical Examination of Milk.—Dr. William Royal Stokes, bacteriologist to the health board of Baltimore, briefly reviewed the methods used in the municipal laboratory in examining milk. When the milk examined was from one cow, or even when it was a mixed milk from many cows, it was centrifugalized for some minutes and then the sediment was spread out on a glass and stained. If many pus cells were found the specimen was rejected; but if there were only one or two pus cells in the field the specimen was passed.

Food Adulterations.—Dr. J. C. Hemmeter read a paper on the above subject, in which he spoke first of beer adulteration, and said that the beer made in Baltimore was especially free from adulterants, while the imported beer was not so good, on account of the salicylic acid put in to preserve it during export. The water of Baltimore was especially good and contained very few organisms. He had examined a great many oysters and had failed to find any typhoid or pathogenic bacteria. He thought that the tidal waves of the Chesapeake Bay and lack of contaminated water kept the oysters free from disease.

Thursday, April 29th—Third Day.

The Early History of Ophthalmology and Otology.—This was an interesting historical sketch by Dr. Harry Friedenwald, who said that as early as 1805 reference was made to licenses for oculists in Baltimore. Dr. Pierre Chatard, who came from France in his early life to Baltimore in 1797, was a prolific writer, and contributed articles on diseases of the eye. Other writers, as Dr. William Gibson, Dr. George Frick, Dr. Cohen, Dr. Jameson, and Dr. Harper, show

that the diseases of the eye and ear received very early attention in Maryland. In fact, Dr. Frick's book was the first to appear in English on the subject in Baltimore and the third in the English language.

Fracture and Dislocation of the Vertebral Column.—Dr. R. Percy Smith, of Sunnybrook, Md., exhibited a case in which a weight of five hundred and fifty pounds had fallen on the back of a man, and had both fractured and dislocated his vertebral column and injured his skull. The patient is able to go about and his recovery is remarkable.

Two Cases of Gastrotomy and One of Gastro-Enterostomy.—Dr. Robert W. Johnson exhibited one of his patients entirely well. She was a young girl who had severe vomiting before the operation of gastrotomy, and after the operation had never vomited; she now considered herself well. In one case he recovered a long bonnet pin. In this case of gastro-enterostomy the patient died.

Dr. Hemmeter referred to the cured patient as one in whom he had used the electric light in the stomach, showing the dilated condition of that organ, which extended below the symphysis.

Plaster Jacket versus the Steel Brace in the Treatment of Pott's Disease.—Dr. R. Tunstall Taylor showed five children who were undergoing treatment for Pott's disease. He thought that the plaster jacket gave good support when the curvature was below the seventh cervical vertebra; above that point the steel back brace was best.

Suppurative Otitis Media with Symptoms of Sepsis and Intracranial Disease; Recovery under Mastoid Operation and Removal of Polypi.—This was a very elaborate paper by Dr. Hiram Woods, Jr., showing the importance of attending to certain running diseases of the ear which appear harmless, but which in reality are dangerous.

Does Medicine Advance? was the subject of the annual address by Dr. David W. Cheever, emeritus professor of surgery, Harvard University. The speaker took up the various departments of medical science and analyzed the changes in the past years, and drew conclusions showing that medical science had advanced all along the line.

After the address a banquet was served.

Friday, March 30th—Fourth Day.

Models of the Original Chamberlen Midwifery Forceps.—Dr. J. Whitridge Williams showed models of forceps used by the Chamberlens at the end of the sixteenth century. He had obtained these models through the courtesy of the Royal Medico-Chirurgical Society of London. One pair showed how little change had been made in the forceps in all these years. Some of the blades were tied together by tapes, and some had mortise locks.

The Common Contagious Diseases of the Skin in School Children.—This was a very practical paper by Dr. T. C. Gilchrist, who enumerated ringworm, impetigo contagiosa, scabies, and pediculosis, and gave his method of treatment and told how important it was to quarantine children with these diseases. He exhibited a case of alopecia areata, which seemed to be of myxœdemic origin, and which had improved under thyroid extract. He also showed a case of pityriasis rubra in a man otherwise very well.

Dr. Micheau said that some cases of these kinds mentioned occurred in the clean, as he had had occasion to notice, and they were very obstinate in spite of every precaution and treatment used.

The Spread of Tuberculosis among the Russian Jews of the City, and Its Prevention.—This was a paper by Dr. J. E. Gichner, who as physician to the Hebrew Benevolent Society of Baltimore had had occasion to observe the great increase of pulmonary tuberculosis in that race, and spoke of the crowded condition of the people and other causes, and outlined plans for its prevention.

This was discussed by Drs. Canfield and Schaffer.

Dr. Charles M. Ellis was elected *President* for the ensuing year.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, May 20, 1897.

Edward G. Janeway, M.D., President, in the Chair.

Portrait of D. B. St. John Roosa, Ex-President.—Dr. David Webster presented, on behalf of about one hundred physicians, an oil portrait of Dr. Roosa, late president of the academy. Since Dr. Roosa was still with us, the speaker said, perhaps a eulogium would not be in good taste, therefore he would limit himself chiefly to expression of high personal regard for his character and friendship and to reading a few of the letters accompanying subscriptions, all of which testified to marked esteem by the profession. During his presidential term the academy became perpetually exempt from taxation, and the cleansing of the Croton watershed was brought about. He established a precedent which possibly would be ever followed, of declining a second term. In accepting the handsome portrait in the name of the academy, Dr. Janeway expressed again the desirability of adorning the academy walls with portraits of Dr. Austin Flint and of Dr. Alonzo Clark.

Report of Eight Hundred and Five Cases of Sunstroke in New York, 1896; Treatment; Discussion of the Pathology.—Dr. Alexander Lambert read the paper, the latter part of which was a discussion of the pathology of sunstroke by Dr. Ira Van Gieson. The ten days from August 4 to August 14, 1896, would always be remembered as a period in which an extraordinary number of sunstrokes occurred in New York City. The week ending August 15th the total number of deaths in the city was one thousand eight hundred and ten, the largest number ever known since the bureau of vital statistics was established. Of this number six hundred and forty-eight were reported as due to sunstroke. The heat was evidently the cause of this frightful increase in deaths. The total number of deaths from sunstroke for August was seven hundred and twenty-five, and for the year it was seven hundred and sixty-five.

The details of the weather for the ten days of August 4th to August 14th showed, according to the report of Dr. Daniel Draper, Central Park Observatory: Mean hourly humidity for the whole month of August, 73.17, 100 being saturation. For the ten days referred to it was below this mean rather than above it. Therefore the heat was the main factor, which in the shade at Central Park, fifty-three feet above the street, was from 72° to 97° F. August 7th to August 12th, the temperature ranged from 80° to 98° except for about three hours. Of course it was hotter down in the city, or outside the park. The temperature in the sun during working hours of the day averaged 119° F., and ranged from 94° to 137° F. The prevailing wind was a land breeze, from the north and west, below six miles an hour, only one-quarter pound pressure.

To sum up, there was excessive prolonged high temperature, high humidity, this latter being usual here, and absence of cooling breezes. Experience had shown that sunstroke was less common in dry hot

climates than in moist, for evaporation with cooling was more rapid in dry air. High temperature of brief period might be borne, but when long continued caused numerous sunstrokes. The eight hundred and five cases were from the records of Bellevue, Roosevelt, Presbyterian, New York, Hudson Street, St. Vincent's, and the Hood Wright hospitals, and for the statistics the speaker was indebted to Drs. Jackson, Flint, James, Thornley, Loomis, Connor, O'Dwyer, and Knickerbocker. Anything which lessened the resistance of the body to external influences might be said to predispose to sunstroke. The large number of cases in which there was a history of alcoholism was a striking feature. The great majority were alcoholics.

Clinically the cases were divided thus: 1. Heat prostration. 2. The asphyxial or milder form of sunstroke. 3. The hyperpyrexial form. Of the first class there were two hundred and forty-seven. They did not lose consciousness; the temperature did not go above 105° F.; in some it was subnormal. All recovered. Of the so-called asphyxial or mild form there were thirty-eight cases. All recovered. They lost consciousness, but the temperature did not rise to 105° F. There was often a marked predominance of nervous symptoms. Of the third form, hyperpyrexial cases, there were five hundred and twenty cases, with one hundred and thirty-two deaths. All had a temperature of 105° F. or over; only a few retained consciousness. The difference between the three classes was one of degree, not of kind. The majority of the sunstrokes occurred between 2 and 5 P.M. and between 7 and 10 P.M. The nationalities were most diverse. There were no negroes. The occupations were also diverse. Direct exposure to the sun's rays was not necessary, but had occurred in most cases.

The author then considered the symptoms in the three forms. Among prodromes of heat prostration were severe headache, dizziness, pain in back and legs or epigastrium, sometimes numbness and tingling of hands and feet. In some they came on suddenly, in some they were present from one to three days before the patient came to the hospital. In some there were diarrhœa or constipation, nausea and vomiting, and great thirst. The tongue was more often moist and heavily coated. In a few the temperature was subnormal; usually there was a rise from 99° to 104° F. In some after a rest from five to twenty-four hours the temperature gradually returned to normal, and they went out feeling well; the majority continued with slight fever from two to five days.

The second or asphyxial form was by far the least common. The prodromes varied. Sometimes there were none and the patient suddenly lost consciousness. Sometimes this was immediately preceded by dyspnœa or dizziness, or by chromatopsia. In others there were chills, sweating, feeling of fever, diarrhœa or constipation, vomiting. In some there were sensations of pins and needles in the head, or headache. There might be petechial rash on the body, pupils normal or dilated. Unconsciousness lasted until after a bath, or perhaps twenty-four hours. The pulse varied from normal to 140. Its frequency seemed to depend more upon the condition of nervous exhaustion than upon the temperature. The respirations were usually slightly increased, 24 to 28. The temperature did not go above 105° F., was usually lower, sometimes subnormal. Of this class in Bellevue thirty-three were males, five females. The urinary analyses showed no more changes than were usually found in an equal number of alcoholics and normal persons.

In the third or hyperpyrexial class the prodromes when present were often more prolonged, lasting from four to seven days. But there were more histories without prodromal symptoms. Among them were physical weakness, anorexia, great irritability and restlessness, insomnia, nausea, diarrhœa or constipation. Just before consciousness was lost sweating ceased, and there was a feeling of intense heat, a feeling as if the head would burst and eyes bulge out, chromatopsia, blurred vision. Those who had a temperature above 108° F. often had no prodromes. In several cases the patients had kept at work long after noticing anything or answering questions, and finally were taken to the hospital unconscious. In every case in which the temperature was 110° F. or over coma was complete. Those with a lower temperature, if conscious, complained of intense heat and headache. The unconscious patients presented a striking picture—skin dry, hot, and flushed, or cool, pale, and livid, or cyanotic, with clammy perspiration; eyes suffused, or half open, staring, and filmy; pupils contracted, normal, or unevenly dilated; sometimes they would react to light, sometimes not; mouth often open, with lower jaw twitching convulsively; respiration in short gasps, with piteous moan or groan; muscles limp, or twitching convulsively, or in active general convulsion; often wild delirium, struggling furiously; pulse rapid, small, thready, or full and strong with throbbing carotids, or pulseless. In many cases there was a petechial rash on the body and extremities. There was a peculiar disagreeable odor, distinct from the offensive fæces and urine, which often passed involuntarily. Out of the 242 cases with a temperature above 105° F. the temperature in 1 was 117° F., with death; 115° F. in 1, recovery; in 27 it was above 110° F. Of these 242, 167 recovered.

During the bath, or cold pack, or within an hour afterward, about one-half of the patients became conscious, and usually remained so. Many patients did not regain consciousness until next day, or until from three to five days, one not for ten days. Many with temperature above 108° F. did not regain consciousness at all; the temperature was brought down, the pulse remained frequent, dyspnœa and cyanosis were often marked, and they died. These patients usually died within twenty-four hours after admission. Several patients became conscious, later became unconscious again, with delirium, and after from two to seven days recovered, but a few died. Patients admitted in convulsion usually continued to have these after the bath. They were usually a tonic spasm, with intermittent clonic general convulsions. Marked rigidity of the muscles without convulsions was not uncommon. The fall in temperature in the majority of cases was followed by one or more secondary rises, which often required active interference.

The blood showed a decided leucocytosis, red cells distorted, the leucocytes containing pigment. The hæmoglobin color test in twelve cases gave from eighty to one hundred and twenty-five per cent., averaging one hundred per cent., which was far above the normal and was due to the free hæmoglobin in the blood from destruction of the red cells. There was subsequent anæmia in nearly all patients. Some patients spat blood in the bath; a few had bloody stools.

Retention of urine was not uncommon. The urine in the first twenty-four hours semed lower in specific gravity than normal, and to contain a lessened amount of urea. Five to ten days later it seemed of higher specific gravity. Often the urine was normal.

The fatal complications observed were meningitis, pneumonia, acute exacerbation of chronic kidney disease. The cause of death in most cases was failure of respiratory and cardiac centres. In some cases a sudden rigidity of the muscular system caused suffocation. Immediate sequelæ were headache, extreme weakness and malaise, dizziness, soreness, numbness and tingling in hands and feet, extreme anæmia. Three patients became insane with delusional insanity. Two developed inco-ordination of the extremities,

which had remained until now. Dr. Daly had traced seventy-three, after nine months. Of these forty-two had no sequelæ. Three had become insane; twelve had attacks of dizziness and were more sensitive to heat; five had severe headache; one, chromatopsia; one, gastritis; one, changed disposition. Dr. Van Gieson had reported one case in which multiple neuritis and dementia developed two months after sunstroke. There was a peculiar asthenic condition in several cases. Usually within two or three days after the sunstroke the skin had become harsh and dry and finally peeled off. Bruises were common, and hypodermic injections often caused ecchymoses.

Treatment.—The heat prostrations were treated alike in the different hospitals. The patients were put to bed, and if necessary given a cool sponge bath, and phenacetin or some such drug for the headache. This with rest was all that was required. Sometimes an ice cap gave great relief.

In the asphyxial cases tub baths were given at 60° F., or sponge baths, or if their coma and nervous symptoms demanded it they were put for a few minutes into the ice bath and thoroughly rubbed. They required little more than quiet, rest, and stimulation of a cool bath.

It was in the treatment of the hyperpyrexia cases that the test came. Hydrotherapy in some form was tried in all cases. It differed in method of application and temperature of the water. The records of mortality in the different hospitals furnished a fair estimate of the efficacy of the methods employed. The mortality among the patients treated with ice baths, and the bath continued until the temperature had fallen to about 103° or 102° F., varied in the different hospitals from 18 to 27.5 per cent. When in some cases the ice pack was used instead of the ice bath, the mortality was 25.5 per cent. When the ice bath was given for ten minutes, irrespective of the point to which the temperature fell so long as it remained above a safe limit, the mortality was forty per cent. Among patients treated with the bath at from 50° to 75° F. the mortality was one-third. When the baths were given at 90° to 110° F. and reduced in about fifteen or twenty minutes to 72° F., as was done in the Brooklyn Homœopathic Hospital, the results did not seem to be so favorable as with the cold baths. Among the patients treated with a needle spray from a hose attached to the cold-water faucet, the mortality was 11.5 per cent. In St. Vincent's Hospital, in which the treatment was cold packs followed by hot packs, in one hundred and ninety-seven pyrexial cases the death rate was only five per cent., or, counting eight patients who died a week or more later, the mortality was but 9.13 per cent. The death rate of sunstroke as given in Quain's "Dictionary of Medicine" is from forty-one to fifty per cent. In the entire number of hyperpyrexia cases, as recorded in this paper, five hundred and forty, the death rate was 25.38 per cent. Therefore the treatment employed in the various city hospitals had given very satisfactory results.

The author gave in greater detail the bath treatment, and said the ice bath was one in which the patient was placed in a tub with crushed ice. It was emphasized that the stay in the bath was accompanied by very vigorous rubbing by several attendants. The ice pack was given by placing the patient on a rubber sheet and putting ice along the legs and body, and rubbing with ice. The author did not think favorably of it. The needle spray was given in the Flower Surgical Hospital, patient on a rubber sheet, ice cap on the head, three streams playing over him from cold-water faucets. The results were good. In St. Vincent's, where they got the best results, the method consisted in dashing water on the patient from pitchers at a distance, the patient lying on a cot, rubber under him, wrapped in cotton sheets. Drugs had little effect until the temperature had been reduced. Nitrite of amyl, one or two drops in the nose, sometimes relaxed muscular spasm and convulsions.

Briefly, the best treatment seemed to be a needle spray, or ice bath, or cold pack till the temperature fell to 103° or 104° F., followed immediately by a hot pack, with stimulants and sedatives as one's judgment might deem necessary.

Pathology.—The gross pathology of sunstroke had always been conflicting, and the changes found not characterized by any definite and uniform lesions, and it seemed that we must finally turn to cellular pathology, to study the changes in the cells themselves, in order, if possible, to discover both cause and effects. The prodromal symptoms were those of acute functional disturbances, and the serious later symptoms showed that there were grave changes in the blood and in all the nervous centres, especially those which held in a state of equilibrium the heating mechanism of the body. Dr. Ira Van Gieson had furnished him a preliminary report of the changes in the nervous system in fifteen cases of sunstroke.

Sections had been examined from the spinal cord, cerebellum, and various portions of the cerebrum. All showed more or less changes in the chromophilic plaques of the ganglion cells. These plaques in some cells were changed in shape and were fewer in number; in some they appeared to be broken up or to have entirely disappeared. Since the chromophilic plaques showed the potential energy stored in the cells, and any changes in the nucleus might be said to be directed against the life of the cell, it would readily be appreciated how extensive were the changes which had occurred. Dr. Van Gieson's deductions were: In three cases referred to there was universal exhibition of acute parenchymatous degeneration of the neurons of the whole neural axis. In the brain cortex and in the cerebellum the cells showed the same stages of degeneration. The spinal-cord cells were apparently not so extensively involved. There seemed to be no other interpretation open as to the significance of this degeneration than the operation of a toxic substance upon the ganglion cells. There was, in other words, a toxic cytolysis in insolation, or cell resolution of the neurons, which depended upon the condition of the body forces, the eliminative capacity of the body, and the duration of the poison. Depending on these three factors, the neural parenchymatous degeneration might result in restoration or destruction of the neurons involved.

This theory that sunstroke was an auto-intoxication with heat as a contributing cause, and not the direct and only cause, was not new. The blood serum from the bleeding of some patients when injected in doses of only five cubic centimetres caused death in rabbits within an hour. The urine at the time of admission was markedly less toxic to animals than twenty-four hours later, seeming to show retention of the toxic substances in the body at the time of the sunstroke. But these experiments had been few in number, and it could not be claimed that the auto-intoxication theory had yet been fully proven. Heat alone, however, did not seem sufficient to explain all of the clinical and pathological observations.

Dr. Ira Van Gieson opened the discussion, and further elucidated his views as to the pathology stated above, and spoke of the experiments on animals. Regularly a certain number of these patients made their way to the insane asylums. His studies in one case of multiple neuritis and dementia had been mentioned in the paper.

Heavy Clothing and Sunstroke.—Dr. L. A. Connor gave his experience in one of the hospitals. He had recognized only two classes of cases of sunstroke in

patients who entered there: 1. Heat prostration, sometimes temporary loss of consciousness, temperature slightly elevated, sometimes subnormal. 2. Cases of real sunstroke, though varying still in degree. He agreed with Dr. Lambert, that vigorous and constant rubbing should be used during the bath. At his hospital the mortality had been about twenty-seven per cent. Dr. Connor dwelt on prophylaxis, pointing out the great proportion of cases in which the patient had worn heavy clothing in spite of the intense heat. The hat was usually black and heavy. He thought the board of health might wisely distribute circulars of information, warning against too heavy clothing in hot weather. The reflection from the sidewalks dazzled the eyes, and it might be well to wear green spectacles.

Dr. J. P. Thornley said that at the Presbyterian Hospital they had recognized about two practical classes, those of prostration and those of genuine sunstroke. The treatment had been the tub bath, temperature of 40° F. The results had been fairly good. With one exception the patients who recovered recovered completely. One had symptoms of meningitis.

The Heat Regulating Theory.—Dr. L. F. Bishop presented his views as follows:

"We have all listened with pleasure to Dr. Lambert's interesting paper and the instructive remarks of those who have followed him. It would seem that there is not very much to add as to the statistical part of the subject, nor is there much to suggest in the line of therapeutics. However, the experience of last summer and the discussion of this evening have given rise to some thoughts which, though perhaps in the field of medical philosophy, will not be out of place.

"Whatever may have been said as to the mechanism of sunstroke, it would seem that the old explanation would still be most worthy of belief—that the body, after being subjected for a long period of time to a high temperature, becomes exhausted as to its power of heat regulation. The heat-producing forces in the body are always in excess of the requirements of economy. Now, during health the heat-controlling forces keep the temperature within bounds, but when these forces have been put on the strain for a long period of time they may at some particular time give out, and the temperature of the body rise to an enormous degree, as in sunstroke. It may, of course, be true that the heat-producing forces in the body are very much increased under the stimulus of external heat, but the essential element in the production of sunstroke is the failure of the heat-controlling forces.

"There is another point suggested by the study of fever in general, and thermic fever in particular, and that is that fever is not a positive quantity but a relative quantity. The normal temperature of the body is maintained by a balance between the heat-producing forces and the heat-controlling forces. Now it is very evident that in certain individuals at certain times the heat-producing forces may be very low and the heat-controlling forces correspondingly inactive, while in others at other times the heat-producing forces may be very active, but the heat-controlling forces may still be adequate to maintain the normal temperature. In either case the temperature of the body would be 98.4° F., but the actual conditions presented would be very different. Hence there is a fallacy in believing that we can estimate the thermic condition of the body by the measurement of a thermometer. Fever, as a rule, indicates weakness; but likewise a low temperature may indicate weakness. For instance, in the high temperature of pneumonia, we have in abeyance the heat-controlling forces, allowing the temperature to rise under the stimulus of the disease. In defervescence with collapse in the course of pneumonia, we may have a failure of the heat-producing forces simultaneously with the re-establishment of the heat-controlling forces, producing a condition of depression more dangerous than the high temperature.

"I had not intended to speak of therapeutics, but there is one point in connection with the cold-water treatment of sunstroke that has emphasized what has previously seemed to be true with the cold-water treatment of typhoid fever, namely, that the procedure has a value beyond that of the actual reduction of temperature. It seems to have the power of re-habilitating the heat centres and giving them the power of taking up their work in their proper way.

"The value of the study of sunstroke in these latitudes must have an importance of its own. The effect of climate upon the constitution of the population is such that we cannot draw our conclusions from the results of lower latitudes. People living in the south and going north are able at first to stand low temperatures remarkably well. The same is true of people going from the north south as to high temperature, but after a time each must adopt the customs of the country to which he has gone.

"In conclusion, we would like to emphasize our belief that sunstroke is in the category of physiological rather than chemical or bacterial disorders, and that whatever substances have been found are the results of the high temperature, which was primarily due to a functional derangement of the heat-controlling and heat-producing forces. The condition of sunstroke may be closely imitated by hyperpyrexia in any acute disease. In rheumatism, or even in typhoid, there is a high temperature existing from internal causes, which may bring about the same catastrophe to the heat centres as if produced by external heat of the atmosphere. Sunstroke is a disease of the nervous system.

"The lower grades of thermic fever have not been considered particularly, because the subject, sunstroke, has hardly suggested their study; but it should be borne in mind, especially as to young children in the large cities, that thermic fever may resemble very closely cholera infantum, and that it may exist entirely independent of any primary digestive disturbance. In these cases, of course, laboratory milk is not a panacea.

"We must all feel indebted to Dr. Lambert for bringing this subject before us at this time. We hope that we may not have an opportunity this summer of putting our mature knowledge to practical use, as we had last summer."

The Benefit of Mechanical Irritation of the Skin.—Dr. Simon Baruch said that the benefit derived from the various ways of using water was not due so much to the cold as it was to the mechanical irritation of the cutaneous nerves. That fact should be borne in mind in all cases of application of cold to the surface. All hydrotherapists advised friction of the skin in combination with cold water.

Would Hasten the Erection of Public Baths.—Dr. Baruch offered a resolution, urging the city authorities to proceed with the erection of city baths as had been provided for by legislative enactment. The resolution was laid over, under the rules, until the next meeting.

Tuberculosis.—For the cure of tuberculous disease of the lungs, as we ordinarily meet it, we need a specific for pyæmia quite as much as one for tuberculosis, for in most cases there is mixed infection, and when the disease is well advanced the pyæmia is as marked as the tuberculosis. Moreover, while the human system can often vigorously resist the tubercle bacillus, it usually fights a losing battle against the combined attack of it and pyogenic organisms.—W. S. Davis, *Medicine*, April, 1897.

Therapeutic Hints.

Atonic Ulcers.—

℞ Iodol ..... 2 parts.
Vaseline,
Lanolin ..... āā [illegible]
M. Spread thin on aseptic lint and apply.

—*La Presse Médicale.*

Cough Mixture.—

℞ Ext. pruni virgin..... ℥ i.
Aq. camphor..... ℥ vij.
Glycerin. ..... ℥ i.
M. S. Teaspoonful every two to four hours.

—B. F. Sherman.

Chronic Rhino-Pharyngitis.—

℞ Menthol..... 1
Oil of sweet almonds, or
Liquid vaseline 10
Apply locally with a brush.

—Hamon de Fougeray.

Intestinal Antisepsis.—

℞ Naphthol (alpha) ..... gm. iij.
Chloroform ..... gtt. xv.
Castor oil ..... gm. c.
Oil of peppermint ..... gtt. v.
M. S. A tablespoonful in port wine, beer, or black coffee with sugar, for adults, and a teaspoonful for children.

—J. de Maximowitch.

Cancer of the Uterus.—

℞ Sodii chlorat..... ℥ v.
Syr. aurant. flor..... ℥ i.
Aq. dest. ..... ℥ iij.
M. S. From two to eight teaspoonfuls to be taken daily.

Locally:

℞ Sodii chlorat,
Bismuth subnitrat .....āā ℥ iiss.
Iodoform..... ℥ i.
M. S. Apply a small quantity on a tampon to the cervix.

—E. Duvrae.

Acute Localized Prostatitis.—

℞ Iodoform,
Extract of hyoscyamus.....āā gr. ss.
Cacao butter..... gr. xlv.
M. S. Use as a suppository.

—*Journal des Praticiens.*

Lumbago.—

℞ Atropine..... gr. iv.
Oleic acid..... ℥ i.
Castor oil ..... ℥ i.
Oil of lavender ..... ♏v.
Rectified spirit. .....q.s. ad ℥ i.
S. For local application.

—Martindale *and* Westcott.

Chronic Rheumatism.—

℞ Potassii iodidi..... ℥ iij.
Vini colchici sem.,
Tinct. opii camph... .....āā ℥ ij.
Tinct. stramonii ..... ℥ vi.
Tinct. cimicifugæ..... ℥ iij.
M. S. A teaspoonful thrice daily.

—*St. Luke's Hospital, N. Y.*

Furuncles of the Eyelid.—

℞ Tincture of camphor,
Precipitated sulphur.....āā gr. xv.
Lime water,
Rose water .....āā ℥ iiss.
Gum arabic..... gr. iij.

—Landolt *and* Gigax.

Tympanites.—

℞ Ol. terebinthinæ ..... ℥ i.
Ol. amygdalæ dulc ..... ℥ ss
Tr. opii..... ℥ ij.
Mucil. acaciæ..... ℥ v.
Aq. laurocerasi..... ℥ ss.
S. A teaspoonful every three to six hours.

—*Medical Press and Circular.*

Correspondence.

OUR LONDON LETTER.

[From our special Correspondent.]

ROYAL COLLEGE OF SURGEONS—COUNCIL ELECTION—FELLOWSHIP EXAMINATIONS—MEDICAL-AID ASSOCIATIONS—ANNUAL MEETING OF FELLOWS—MEMBERS' CLAIMS REJECTED—MR. ANDERSON'S APPEAL—GARBAGE AND ELECTRIC LIGHTING—EPILEPTIC COLONIES—BIRMINGHAM HOSPITAL AND ROYALTY—HOSPITAL REFORM—SIR J. REID—HEALTH OF LONDON.

London, July [illegible], 1897.

The election to the council of the College of Surgeons came off last week. Mr. Howse and Dr. Ward Cousins were re-elected for another term, and the three new members are Messrs. Edmund Owen, Rickman Godlee, and Watson Cheyne. The election was not more exciting than usual since voting-papers came into use; forty-six fellows voted in person, six hundred and nine by proxy, four votes were invalid, and four were too late. It is to be feared that reformers have little reason to congratulate themselves on the result. The new members are not particularly liberal in their views, so far as their public statements show, and assuredly all three cannot compensate the cause of progress for the loss of the late Mr. Rivington.

As to other college matters, the examination for the fellowship is being discussed again, and no wonder, for it is the most uncertain of all the examinations. Neither teachers nor candidates can form any opinion as to the chances, and both are naturally very dissatisfied. The new members might very well take up this question, which as teachers they have good opportunities of understanding.

Another question relates to the powers of the council to censure members. The bylaws allow the council to remove from the list any fellow or member judged by the council to be guilty of disgraceful conduct in a professional respect. Some are anxious this power should be brought to bear on those who accept situations under the medical-aid associations. The council has referred this question to its legal advisers, and has not expressed any opinion of its own on the matter and evidently prefers not to do so. It will not surprise me if the lawyers advise against the exercise of the power of expulsion, as it is quite possible such a course might lead to litigation, and it is at least doubtful whether the judges would uphold such a power for such a purpose or pronounce it as "in restriction of trade." Perhaps a milder course would be more effectual. The council might surely have the courage of its opinions, and let every one know whether it considers these so-called aid associations injurious to the profession, and accordingly whether holding office under them is discreditable to members of the college.

The annual meeting of the fellows was held on Monday. The question whether members should be allowed any voice in their college was, you may remember, put to the fellows for an expression of opinion by circular. The papers have been returned, and two hundred and one fellows have declared for this measure of justice, but two hundred and eighty-four voted against giving up any share of their exclusive privileges.

Mr. Anderson's case came before the meeting, the council having declined to contribute to the fund for his appeal to the House of Lords. Mr. Anderson pleaded his claim to assistance on the ground that the college undertakes to protect fellows and members in the exercise of their profession. The president, Sir William MacCormack, replied that the college funds

were a trust committed to them, and that the museum showed how well the trust had been fulfilled, and although sympathizing with Mr. Anderson and willing as individuals to subscribe to a special fund, the council did not feel justified in using the corporate money for the purpose.

The conclusion seems as lame as the premises, for the college thus refuses to maintain the rights of its fellows and members, either by initiating proceedings in the courts or subscribing toward law costs. The fellows, however, indorsed the conclusion by twenty-five to four votes, though a number of them did not vote at all. The question involved is a most important one, and the Civil Rights Association has taken it up with energy, but funds are needed for carrying on the contest. Perhaps no greater perversion of justice has been brought before the public. Mr. Anderson's prosecution was at the hands of the judges in Tobago, and the doctrine that the judge is not liable for malicious actions done in the capacity of judge must be set aside before justice can be done to Mr. Anderson. Hence the question at issue is important to every citizen, and the protection of civil rights a cause worth fighting for.

The utilization of waste products has a natural charm for the sanitary reformer, who sees in the process a means of getting rid of noxious material more effectual than its removal at considerable cost. The "dust cart" has long been a source of vexation to every citizen, but there is a promise of the dawn of better days. Shoreditch vestry leads the way, and last week Lord Kelvin presided at the opening ceremony of the new works erected for that part of the metropolis. The garbage of the dust carts is to be utilized as fuel for the engines which drive the dynamos for electric lighting. If not the first attempt, this seems to be the first success scored in this line, and to be partly due to a system of storing the heat so that it can be used by night, when it is more needed than by day. Lord Kelvin, who should know, said the plan was an example of the amalgamation of scientific knowledge and forethought with mechanical engineering and skill. Perhaps West End vestries will now follow easterly Shoreditch.

The committee of the National Society for the Employment of Epileptics is appealing for funds to enable it to carry on its excellent work. It has indeed money in hand for special enlargements and new homes, but the general finances are at a low ebb. The colony has passed beyond the experimental stage; it would be a calamity to discontinue it. The patients are taken from the bad hygienic surroundings of towns, and employed in gardens, fields, orchards, and workshops in the country, where they have an abundant simple diet without alcohol. A marked improvement is generally noticed soon after admission. I think you have a similar system in working order in the States, and you will be glad to hear that it is successful here.

On Wednesday the Princess Christian with her husband and daughter went to Birmingham, to open the new buildings of the General Hospital in the name of her mother, the Queen. The city received the royal visitors with great enthusiasm, and the princess expressed gratification at the success which had been secured to the hospital and her own great interest in the sick poor.

The Hospital Reform Association carried its resolution at Bristol, although there were not wanting some differences of opinion as to the method of removing admitted abuses. It seems an excellent plan of this vigorous young society to visit the several towns where there are large hospitals, and get the local members of the profession to discuss the subject.

Sir James Reid, K.C.B., resident physician of the Queen, receives the additional honor of a baronetcy, and every one seems pleased that his services are thus recognized. One or two additional honors have also reached our colonial brethren, and also given satisfaction. On the other hand, there is some grumbling at home. It is felt that the profession might well have received further distinctions on so important an occasion. Why should Irish presidents get knighthood, and English baronetcies? I was prepared to hear this question, for, whatever Ireland gets, she asks for more. I was, however, scarcely prepared for the Scotch grumble, which the lay press has indorsed. Scotland has generally had full appreciation, although the Scottish colleges are omitted. After all, this talk of the different kingdoms in such matters partakes of the parochial.

The phenomenal health of the metropolis is maintained. In the last week the mortality returns fell further to 13.5 per 1,000. The last four weeks the figures have been 13.8, 14.6, 14.6, and 13.5, showing an average for the month of 14.1, which is 3.1 below the average for the decade, corrected for increase of population.

OUR BERLIN LETTER.

[From our Special Correspondent.]

THE FIFTEENTH GERMAN CONGRESS OF INTERNAL MEDICINE.

BERLIN, July 1, 1897.

THE fifteenth congress of internal medicine, which was held recently, was satisfactory throughout. The interest taken by the members was a very active one, and the arrangement introduced of having demonstrations on certain days only was an eminently practical one. Provision was also made for the entertainment of the members in the shape of a festive performance at the opera house and a festive banquet in the Zoölogical Garden.

Professor Leyden was absent from the city at the time, and in his place Professor Schmidt, of Frankfort, opened the congress with an address of welcome. Following this Professor Bäumler read a paper on "Chronic Articular Rheumatism and its Treatment." He dwelt upon the history of the term rheumatism. Originally employed as denoting a mucous flow, it later became a general term for all "colds" and their sequelæ. An especially important form of rheumatism is "polyarthritis deformans," in the study of which the Roentgen rays have proven of great value. The speaker summed up as follows: Only uncomplicated cases should be classed as "chronic articular rheumatism;" bacteriological researches have shown it to be very probable that it is of bacterial origin. It is to be remembered that in its course various damaging influences are working upon the patient at the same time.

Dr. Ott spoke upon the general treatment of chronic rheumatism. He believed the best results are to be obtained from hygienic methods: the careful provision for fresh air, good and proper clothing and nutrition, and suitable bathing.

In the discussion the main interest centred itself about the question: Is or is not articular rheumatism an infectious disease? The first to speak was Professor Chvostek, of Vienna. He had examined the blood and joint fluid of rheumatics, and had made experiments upon animals, but all with negative results. He therefore regarded articular rheumatism in no sense as due to an invasion of the joint by bacteria. He looked upon it rather as a toxic process. The swelling of the joints is caused by a toxin; the condition of the joints makes it easy for bacteria to lodge

and propagate there, but this is of but slight importance—a mere side issue.

Dr. Singer, of Vienna, held that chronic articular rheumatism is of bacterial origin. He based his opinion principally upon the finding of the staphylococcus in the joints. He believed there is no single germ, but a number of various germs causing the disease.

Professor v. Noorden had investigated the popular "lemon cure" of the laity. He found there was no alteration in the metabolism caused thereby, but no patient was improved by it. He believed that a regular steady reduction in weight was beneficial. He had found the Roentgen rays of decided advantage in the study of articular rheumatism and similar disorders.

Bäumler, in closing the discussion, said that the bacteriological question was the one toward which special attention would be directed in future studies of chronic articular rheumatism.

On the second day of the congress Professor Behring, the discoverer of the diphtheria antitoxin, addressed the assemblage, by special request, upon "Etiological Therapeutics as Founded upon Experiment." Owing to improved methods in the preparation of the antitoxin, it is now possible to exclude the adventitious products which are the cause of the injurious effect of antitoxin preparation. Antitoxin in itself is harmless; it acts exclusively upon the specific poison present in the body. It has not been possible heretofore to produce it in uncontaminated form, but the speaker did not think this necessary. It requires the passage of the toxin through an animal body to produce the antitoxin. A strong tuberculosis antitoxin has been recently prepared in Marburg, and it is expected that practical results will follow its use. We have thus the prospects of obtaining a good working tuberculosis antitoxin.

Dr. Boas, of Berlin, presented a case of peristaltic restlessness of the stomach and intestines. These organs were in constant visible motion, and yet the patient felt herself otherwise entirely well.

Prof. Albert Fränkel discussed the surgical treatment of hydrops pericardii. He pleaded for the opening of the pericardium through an incision, and condemned simple puncture as dangerous. He showed a child who had had a pericarditis, and had been completely cured by a radical operation.

After a number of demonstrations and short addresses, Dr. Magnus-Levy read a paper on "Myxœdema and Sporadic Cretinism," two closely related diseases. He found the metabolism in them diminished, a circumstance in striking contrast to Graves' disease, in which it is increased.

Professor Kronecker, of Bern, reported his conclusions from a study of paralysis of the heart alleged to follow obstruction within the coronary arteries. He held that such a paralysis does exist.

Professor Langerhans, of Berlin, presented the organs of a young man who had been treated with Koch's newest tuberculin and who subsequently died. Autopsy showed a general miliary tuberculosis; the condition reminded one strongly of that found after the employment of Koch's original tuberculin.

Professor Rumpf, of Hamburg, said that, in spite of extensive employment of the new tuberculin, he had never seen any disastrous result.

Professor Liebreich, by special request of the congress, next spoke at length of the "Modern Medicinal Therapy." He was strongly opposed to Behring's school and its methods, and classed himself with the old school. He regarded the excitors of tuberculosis as parasites, which thrive and propagate upon any proper soil. He was opposed to the recognition of a bacterium as the cause of an infectious disease. Especially did he oppose orrhotherapy. He recommended cantharidin in the treatment of tuberculosis, claiming for it that it increases the vitality of the cells.

After the applications of the Roentgen rays in internal medicine were discussed, the question of lumbar puncture was taken up. This procedure, introduced by Quincke, was discussed by that authority as well as by Lenhartz and Fürbringer, these three being best qualified to comment upon it. A diagnostic value attaches itself to the method, especially in tuberculous meningitis. It is hardly to be expected that it will be employed in regular practice, owing to the difficulty of the operation.

Dr. Goldscheider read a paper on the "Effect of Irritations in the Pathology and the Therapy of the Nervous System in the Light of the Neuron Theory." The neuron theory opens to us new views and ideas in the teaching of psychology and nervous disease. Briefly put, it regards each cell with its axis cylinder as constituting a formative and nutritive unity. Irritations must have a certain degree of intensity, in order that they may pass from one neuron to its neighboring one. All neurons are associated, yet each one has its own irritability. The neuron theory explains the symptoms of hysteria, neuralgia, hyperæsthesia, tachycardia, etc.

ORRHOTHERAPY OF TUBERCULOSIS.

To the Editor of the Medical Record.

Sir: Allow me to reply briefly to certain strictures of Dr. Rochester (Medical Record, p. 58) on the use of serum in tuberculosis. Dr. Rochester used the serum in cases against which he was expressly warned—cases of mixed infection, practically moribund, and acknowledged by himself to have been unsuitable. Dr. Rochester disregarded instructions in the use of the serum, and so his report was unscientific.

Paul Paquin, M.D

St. Louis, Mo.

PAY FOR HOSPITAL ATTENDANCE.

To the Editor of the Medical Record.

Sir: I have read with interest the editorials in the Medical Record dealing with the abuse of charity in the hospitals and dispensaries of this city. Remedy after remedy is suggested, but, strangely enough, the only effective one is ignored. Abuse, varying in degree, is heaped upon boards of managers, and philanthropists are scored because they wink at the misuse of public and of private funds which go to the support of these institutions. The chief culprit, however, is overlooked, and this culprit is the doctor himself. Take any one of these institutions, and you will note that, from the superintendent to the scrubwoman, all are salaried. The prime essential agent in the running of the institution secures nothing but experience. Now the doctor is much like his fellows in other walks of life: he cannot feed himself, nor wife nor children, on experience; and yet, day by day and year by year, we see him giving time and skill without pay for humanity's sake—true enough, but, as has been amply proven and as will be more fully certified, to human beings fifty per cent. of whom are able to pay. Now the remedy is so plain that as I write I feel that I am offering an insult to intelligence. Let the profession decline as a unit to serve gratis in any hospital or dispensary except those conducted by the city for the care of the paupers. The poor would then be cared for, while those of moderate means and the well-to-do would have to pay, since all institutions not conducted in the spirit of proper charity would have to close their doors for lack of the mainspring—the doctor.

It is the duty of the city to care for its indigent. The city should establish in each ward a hospital and a dispensary, where the poor of the ward could resort. One or more salaried agents could keep track of the applicants, even as the registered voters are traced. The doctors in each ward would gladly treat these paupers, and thus gain experience without robbing themselves and their colleagues, and without, as under the present system, teaching the rich and well-to-do how to pose as paupers when sickness strikes them.

EGBERT H. GRANDIN, M.D.

New Instruments.

A METAL DOUBLE-CURRENT RECTAL IRRIGATOR.

BY ROBERT COLEMAN KEMP, M.D.,

NEW YORK.

THIS instrument is made after the same model as the hard-rubber tube—a central tube opening at its apex and two lateral openings in the outer tube. It is five inches long, is nickel plated, and is as cheap as the rubber instrument. There are several sizes made, No. 4 being the best. The cap and central tube unscrew in a single piece. The tube is durable and can be boiled. In using high temperatures of fluid, a small collar of soft-rubber tubing can be slipped over it, to protect the sphincter from the hot metal. The instrument is made by Reynders & Co., New York.

449 PARK AVENUE.

A NEW DYNAMOMETER.

BY T. J. McGILLICUDDY, M.D.,

NEW YORK.

IN chronic abdominal and chest disorders the use of anthropometric instruments is very necessary, to show

FIG. 1.

the gradual gain in flesh and strength or the diminution of fat that takes place during the course of treatment. Regular records of these measurements should be carefully kept. The ordinary or Mathieu dynamometer, which is a modification of the Regnier, has been used, not only for measuring the strength of the hands, but, by attaching special handles, straps, holders, or frames, the strength of other portions of the body, such as the chest, back, forearms, and legs, has been obtained. These holders or frames are rather complicated and bothersome, and look as though they might readily get out of order. They cost as much as the new instrument which I have devised. Some years ago I had this circular spring dynamometer made by Messrs. Tiemann & Co., and to it I have had handles attached, which give sufficient room for the insertion of the foot when testing the strength of the side of the body, as in Fig. 3. This instrument can also be used to test the strength of the forearms, chest, and back. The illustrations show the method of using it in testing the strength of certain groups of muscles. Those engaged in the treatment of chronic diseases

FIG. 2.

FIG. 3.

will find this dynamometer of practical value for gradual strength measurements. It combines simplicity with cheapness, is light and convenient, and is made to register two hundred pounds or more. Both the English and metric systems can be used. It is carefully tested and is absolutely accurate.

Long-Lived Women.—Of the thirty-five centenarians in Massachusetts, thirty are women.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 17, 1897:

	Cases.	Deaths.
Tuberculosis	112	115
Typhoid fever	22	8
Scarlet fever	97	11
Cerebro-spinal meningitis	0	9
Measles	179	10
Diphtheria	151	27
Laryngeal diphtheria (croup)	6	2
Chicken-pox	10	0
Small-pox	1	1

The Intelligent Compositor.—Ours is a marvel. We wrote: "Is there no balm in Gilead?" Supposing we didn't mean it, or were mistaken in the town, our compositor slung it up "Goliad." But that's a small matter. Some years ago, in compiling a mortuary report from exchanges, we wrote: "Dr. Jno. B. Bailyhache, *et.* 74 years, born July 20, 1822, and died —." Imagine our consternation on finding the proof sheets to read: "Dr. Jno. Bellyache eat 74 ears corn July 20, 1822, and died —."—*Texas Medical Journal.*

The Helpful Hen.—In China the hen is kept constantly busy. When not engaged in hatching her own brood she is compelled to hatch fish eggs. The spawn of fish is placed in an eggshell, which is hermetically sealed and placed under the unsuspecting hen. After some days the eggshell is removed and carefully broken, and the spawn, which has been warmed into life, is emptied into a shallow pool, well warmed by the sun. Here the minnows that soon develop are nursed until strong enough to be turned into a lake or stream.—*Medical and Surgical Reporter.*

Beer Drinking and Longevity.—Insurance doctors are much against beer drinking. Dr. Rogers, of the New York Life, in reference to beer, says: "Recently I had occasion to make some study of what happens among persons engaged in the manufacture of beer. My cases included not only the workmen engaged in breweries, but also the proprietors of breweries. It is a curious fact that the mortality among the proprietors is about as high as among the workmen, showing that they are all given to copious libations. The mortality is strikingly low among brewers in early years. Up to forty or thereabouts, brewers seem to be about as good risks as pretty much anybody else. After forty the mortality rises very high, and I should say that at fifty-five or sixty years of age about three brewers may be expected to die where one average person dies."

Training the Nervous System.—At a recent meeting of the Naturalists' Society in Dundee, Dr. Rorie read a paper on this subject, which is referred to in *The Lancet* as follows: "Can the functions of the nervous system be raised by care and steady diligence to a higher standard than would appear at present to hold ground? In other words: Could the present mental and moral standard of the human subject be raised by the improvement and education of the nerve cell; and, secondly, would mere neglect in the regular exercise of the various nerve centres—allowing these to sink into a state of atrophy—result in moral and intellectual degeneration? In elaborating his theme, Dr. Rorie proceeded to give a lucid explanation of recent additions to the knowledge and functions of the nerve cells, illustrating his remarks by means of a large series of diagrams; their structure and development and the importance of a healthy nutrition were fully explained. It was also pointed out how periods of mental depression and barrenness and states of activity and fruition were in their turn to be traced to the exhaustion and recuperation of the nerve cells respectively. The condition of the nerve cell in relation to the development of insanity and its bearing upon the elucidation of many most important points connected with criminal anthropology were touched upon. In conclusion, Dr. Rorie stated that the latent capacities of individuals were in the majority of cases, if not in all, far beyond what are usually reached, and that the possibilities of increasing and developing these to their full extent depended on raising the vitality of the nervous system to its highest degree. In every individual vast numbers of cerebral cells probably remained undeveloped, and although as yet no nerve centres had been found corresponding to our knowledge of good and evil, of justice and benevolence, of purity and veracity, it could hardly be doubted that these had correlative neural equivalents equally with the mental and intellectual faculties, and they were therefore as much worthy of careful training."

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the United States Marine Hospital service during the week ended July 17, 1897:

SMALL-POX—UNITED STATES.

		Cases.	Deaths.
Memphis, Tenn.	July 3d to 10th	2	
New York, N.Y.	July 3d to 10th	..	1
Toledo, Ohio	June 1st to 30th	4	1

SMALL-POX—FOREIGN.

Glasgow, Scotland	June 14th to 20th	1	
Madrid, Spain	June 16th to 23d	..	4
Pernambuco, Brazil	April 25th to May 29th	..	17
Sagua la Grande, Cuba	June 26th to July 3d	80	3
Havana, Cuba	June 1st to 30th	..	9
Warsaw, Russia	June 19th to 26th	..	4
Odessa, Russia	June 19th to 26th	4	
Zurich, Switzerland	June 14th to 20th	4	
Manaos, Brazil	June 12th to 26th	103	52
St. Petersburg, Russia	June 14th to 26th	8	1
Matanzas, Cuba	June 23d to July 7th	..	2
Hong-Kong, China	May 22d to 29th	..	2
Osaka and Hiogo, Japan	June 5th to 12th	1	
Montreal, Canada	June 25th to July 2d	2	

YELLOW FEVER.

Santiago de Cuba	June 19th to July 3d	..	28
Manzanillo, Cuba	June 6th to 13th	..	1
Cienfuegos, Cuba	June 20th to July 4th	..	6
Rio de Janeiro, Brazil	June 5th to 12th	3	
Sagua la Grande, Cuba	June 26th to July 3d	38	2
Havana, Cuba	June 1st to 30th	..	182
Matanzas, Cuba	June 23d to July 7th	..	12
Para, Brazil	June 19th to July 3d	..	7

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

A TEXT-BOOK OF MENTAL DISEASES. By Dr. Theodore H. Kellogg. 8vo, 776 pages. Illustrated. William Wood and Company, New York.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY. 1896. Vol. VIII. Edited by Dr. Floyd M. Crandall. 8vo, 243 pages. Illustrated.

EYE-STRAIN IN HEALTH AND DISEASE. By Dr. Ambrose L. Ranney. 8vo, 321 pages. Illustrated. The F. A. Davis Company, New York. $2.00.

DISEASES OF WOMEN AND UTERINE THERAPEUTICS. Seventh Edition. By Dr. MacNaughton-Jones. 12mo, 908 pages. Illustrated. William Wood and Company, New York.

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Original Articles.

THE POSSIBLE MORPHOLOGICAL BASIS FOR SOME DISEASES OF THE LUNG.[1]

BY WOODS HUTCHINSON, A.M., M.D.,

[illegible], N. Y.,

[illegible] OF COMPARATIVE PATHOLOGY, UNIVERSITY OF [illegible]
[illegible] DEPARTMENT.

IT might at first sight appear almost inappropriate to introduce the consideration of pathological problems in an association of anatomists *pur sang*, but an explanation of the real meaning of my title will, I think, indicate its right to appear upon the programme. The aim of the paper is not to inject pathological considerations into anatomy, but if possible to inject a little anatomical spirit, and the order and rationality that go with it, into the at present sadly chaotic realm of pathology. In other words, it will be a perhaps presumptuous endeavor to prove that we have, in some cases at least, a valid morphological basis for disease; that disease, being but life out of place, vital energy gone wrong, has its laws, its ancestry, and its principles of development as certainly as health has. And it is my firm personal conviction, now that the wonderful impulse which the oil-immersion lens and the bacteriological world opened up by it to our view have given to pathology has apparently reached its flood, and even shows some tendency to subsidence, that the chief hope of advancing and systematizing our knowledge of disease and explaining some of its deepest problems lies in the anatomist in general, and in the comparative anatomist in particular, rather than in the bacteriologist or the pure pathologist. I may make these remarks with all the better grace from the fact that I can hardly claim enrolment in either of the great armies that have been mentioned, and can only venture to approach the subject from the standpoint of a clinical pathologist, both human and comparative, with the hope that the few fragmentary connections which appear to suggest themselves to my mind, between the processes of development and those of disease, may be taken up and adequately discussed and enriched by further illustration by such a body of experts as this.

The suggestions which I would like briefly to present for your discussion will be along the following lines: First, as to the vulnerability of the organ or organs in question, as contrasted with other organs of the body; second, what explanation for this comparative vulnerability or immunity, as the case may be, may be found in the ancestry of the organ itself; third, in what particular region of the organ, if any, is disease most likely to occur, and what are the relations between this local liability and the development of the part; and fourth, as to the nature of some special lesions which occur, and their possible relation to ancestral tendencies. The first thing that strikes us, at even a most cursory glance at vital statistics or bills of mortality, is the "bad eminence" occupied by diseases of the lungs as a cause of death. In the first place, we have from thirteen to nineteen per cent. of the entire number of deaths due to pulmonary tuberculosis; and in the second place, the next most prominent feature in the list will be found to be the so-called "inflammatory" diseases of the organ, as pneumonia, bronchitis, influenza, etc. In fact, by adding together the various forms of diseases of the lung, which appear in the death records, in the human species, it will be found that they are responsible for at least twenty-five per cent., and, according to some observers, thirty to thirty-three per cent. of the entire mortality. I do not quote figures, simply because these facts are matters of general knowledge, or if not can be verified in fifteen minutes by any who will take the trouble to turn to the mortality records of any of our large cities or States. Nor is this state of affairs confined to the human kingdom. Definite statistics as to the actual morbility from any cause are of course practically impossible of attainment from our near cousins, the domesticated animals, for the reason that, first, no systematic record of deaths is kept, and, second, that so comparatively few of them, outside of horses, die from natural causes; but such records as we possess seem to point to an almost precisely similar state of affairs in them. For example, such diseases as pleuro-pneumonia in cattle, epizoötic in horses, tuberculosis in horned cattle and in birds, and one of the most fatal forms of hog cholera, are all of them of this nature. Of tuberculosis alone we possess some sort of record, and it ranges, according to the observer, from an average of fifteen per cent. to twenty-five per cent. in the French and English dairy cattle, to as high as the almost incredible proportion of seventy per cent. in the Holstein-Friesians. That is to say, of cattle used in the dairy, anywhere from twenty-five to seventy per cent. are said to contract pulmonary tuberculosis at some time during their lives.

As to the undomesticated animals, in a state of nature, little of course is known, partly from the lack of observation and partly because their carcasses are pounced upon by some one of a dozen scavengers, eagerly anxious for a meal. But the records of those specimens kept in captivity, either as pets or for scientific purposes, support this position. It is stated that from eighty to ninety per cent. of monkeys die either of tuberculosis, bronchitis, or pneumonia. The canines and felines in spite of their normal immunity from tuberculosis, which will be discussed later, fall under the same ban and are extremely liable to die of pneumonia or bronchitis. Among the ungulates generally the rule does not hold to quite the same degree, but that I believe, to put it roughly and somewhat Hibernianly, is because they die of alimentary disorders before they have time to develop the slower and more chronic lung diseases to which they are so specially liable. Nor can we find any great vital organ or even system which can be compared with the lung in this respect.

There are at least nine other great organs or systems which are of practically equal weight and vital importance with the lung, among which the remaining mortality is to be divided after deducting quite a con-

[1] Read before the Association of Anatomists, Congress of Physicians and Surgeons, Washington, May 5, 1897.

siderable per cent. for general diseases, accidents, etc., which are not to be classed as belonging to or focalizing in any particular organ or system. Diseases of the entire alimentary canal, for instance, which might justly be divided into three separate regions of the extent and importance of the lung, even including typhoid and cholera, are responsible for barely ten per cent. of the mortality in the human species. Indeed I really ought to apologize for attempting to defend or support the extraordinary morbility of the lung before such an audience as this.

Now, let us look for a moment at the reasons which have been advanced for this high grade of vulnerability. First of all it is usually urged that the lung is peculiarly exposed, especially in the changeable climate of the temperate zone, and more readily attacked by changes in the temperature, moisture, and electric tension of the air which must be breathed into it. But we think this exposure theory begins to reveal its weakness, when we discover first of all that the proportion of fatal lung disease in any given race or class, particularly of tuberculosis and pneumonia, is in exactly inverse ratio to the amount of exposure to all sorts of climatic vicissitudes to which its members are subjected. Diseases of the lung are emphatically diseases of city dwellers, or of such classes in the rural population, as, for instance, farmers' wives and daughters, who suffer from too little fresh air and sunlight. In cattle the same thing is even more strikingly illustrated. Tuberculosis in particular, and pleuro-pneumonia in a less degree, are emphatically diseases of stabled cattle or cattle of limited range, and except in the virulently infectious forms of the latter are comparatively unknown in range cattle. Besides, when we come to look at the wonderfully elaborate and effective mechanisms in the nostril sieve and turbinated steam coils which nature has made for both warming and moistening the inspired air, so that, as was shown by Mackenzie, air at even little above the temperature of zero is raised to within two or three degrees of the body temperature by the time it has penetrated to the nasopharynx, we shall, I think, be able to see on anatomical grounds both the weakness of this exposure theory and the reason why, in its purely mechanical form, it is becoming so universally discredited in clinical etiology. The chilling effect of inspired air upon either nose, trachea, or bronchi is the very least of the factors which result in the production of that most common but positively ludicrously misnamed pathologic process, a "cold," which would much better be termed, if it were not for possible confusion with the language of the diamond, a "foul"—though even this confusion is not so much to be dreaded, inasmuch as both not infrequently result in the verdict, "and out."

But, says the supporter of this view, this may be true as regards mere climatic exposure to perfectly pure air, but the case would be altogether different with the air which very many of these city dwellers are compelled to breathe, loaded as it is with emanations from the bodies and lungs of others, dust, sewer gas, and impurities of all sorts and descriptions. This of course may be granted, and yet we must remember that the wonderfully efficient barring-out mechanism still plays an important part even here, as can be seen by the condition of the nasal mucus after a day spent in a particularly dusty atmosphere, and further that this same course of reasoning would apply with tenfold effect to the stomach under these circumstances. And when we remember the dietetic errors of excess upon the one hand and of deficiency and poverty upon the other, the nauseous slops and messes, the greasy and half-putrefying dishes, sauerkraut, limburger, soda biscuit, "high" game, unleavened bread, and gastric atrocities of all sorts and descriptions, to say nothing of unfiltered water, stale beer, and sour milk, I think we will have to admit that, on *a-priori* grounds, we would expect at least as much fatal rebellion on the part of the stomach as of the lungs. Air in the vilest den is never quite so bad as the food.

The next explanation advanced is that of complexity of structure; that we have here an organ of very high grade, as it were, of vital metabolism, and consequently, like all delicate machinery, peculiarly liable to get out of order; but a single glance, I think, will destroy this theory. Important as the function is, the actual process which takes place in the lung itself is one of the simplest and most purely mechanical that can be found anywhere in the body. All that the epithelium has to do, so to speak, is to keep out of the way of the wild rush of the imprisoned carbon dioxid toward freedom and of the oxygen toward the hæmoglobin. Its sole function is to keep itself alive and keep its pores open.

Then we have the statement made that the lung is almost the only organ in the body which never rests and is obliged to remain in constant activity as long as life lasts. But this is, we think, even more inadequate, for the reason that upon this principle the heart ought to have at least as high a morbility as the lung, instead of having about one-tenth of it; and secondly, that the real active work of respiration is done entirely by the muscles and nerves of the chest, which are extremely seldom the site of disease. The lung proper is as passive in this respiratory movement as it is in the exchange of gases through its epithelium.

These are the explanations usually advanced, and I think you will agree with me that no one of them alone, or all taken together, are in any real sense satisfactory explanations of the extraordinarily high degree of morbility of the viscus. As in other problems, when existing conditions do not appear to explain any given phenomenon we are inclined to turn toward the light of history. And here at once I think we come upon a distinctive and unvarying characteristic of the lung, as an organ, which marks it off from almost all other organs of the body as abruptly and as positively as does its marked liability to the attack of disease, and that is its extreme recentness. With the exception of the uterus and mammary glands, there is no organ in the body which has not from five to ten times the length of ancestral history that the lung has. Appearing as it does for the first time, and in a morphological sense *de novo*, at the level of the amphibia, with no invertebrate history whatever, and but the merest fragments of history in the longest and largest portion of our vertebrate family tree, it is a thing of yesterday, morphologically considered, as compared with any other of the great organs of the body. The stomach, for instance, goes back to the hydria, or even in an impromptu form to the amœba itself. The brain has a pretty respectable representation from the time of the middle cœlenterates and certainly of the worms. The heart goes back to almost the same point. The kidneys have ancestors, of which they might well be proud, in that illustrious predecessor of ours which has been degraded to the base use of concealing fishhooks. The liver itself bears a striking family likeness to its ancestor in Molluscan times; and so on all through the list of our body organs. In short, the lung represents an adjustment of the body mechanism to an extremely late and recent factor in our environment—the direct breathing of air. Can this fact of recentness be said to have any pathologic bearing? We think that it can, and are going to venture to formulate a law upon this subject for your discussion, of which this particular case will be both an illustration and a support, and that is that in pathology as well as in biology the ancestrally old is the individually stable and resisting, and conversely the ancestrally recent is

the individually unstable and vulnerable. But I think some one will say at once: "Have not all our organs also been compelled to adjust themselves to this air-breathing state of affairs? We are land animals, and our entire structure has been modified to meet that change." To which I will venture the reply that not only is this not true in equal degree of other organs, but, strictly speaking, no other organ or organs in the body have so adjusted themselves except in the most superficial manner. We talk about our body republic being an air-breathing and land-living organism, but as a matter of fact all of our citizen cells outside of the lung are still absolutely and necessarily aquatic in their habits, and marine at that; cannot live except when kept continually bathed in a normal saline solution. First of all, upon *a-priori* grounds, I think we should be justified in the conclusion that the longer a given organ has performed its function in an adequate and satisfactory manner (and this is of course simply what is meant by the remoteness of its appearance in the family tree) the more likely it will be to continue to perform that function, undisturbed by any influences which may be brought to bear upon it. The mere presence and history of such an organ, for instance, as the stomach, are a standing "certificate of good behavior" for the past fifteen or sixteen millions of years, and like all other such "characters" would be entitled to considerable weight in calculating its probable performances in the present and the future. And, secondly, I think it will be quite possible to show that those organs or functions which are the last acquired are the first to fail or disappear, either in the normal history of the body or under the stress of adverse circumstances. Take for instance the only other organs of importance which are more recent than the lung itself—the mammary gland and the uterus. Late in their appearance, not only ancestrally but also individually, as to the establishment of their functions, they are the first organs of the entire body to fail and atrophy; in fact, almost the only ones which normally do so before the appearance of actual senility of the general system. And what is their pathological record? One of the blackest for the length of their existence and their importance to the individual which is to be found in the entire mechanism. Nearly eighty per cent. of carcinoma in the female will be found to have its site in these organs, while, judging from the number and clamorousness of our gynæcological brethren, one would almost be inclined to think that the normal state of the average uterus is one of disease, and it would, I think, be a conservative estimate to say that one-third of all women are, more or less chronically, sufferers from some form of womb trouble, even while admitting that much of this may be reflex or but a cloak for our ignorance.

Another case in point is that of the higher cerebral powers, the imagination, the creative faculty, the memory. Appearing for the first time in the higher mammals and at a comparatively late period in the individual, they are among the first to fall before the onslaught of either the febrile or intestinal toxæmias or the general decadence of old age. The same may be said of our power of locomotion in the erect position. Appearing elsewhere only in our double first cousins, the gorilla and ourang-outang, and most difficult of acquisition, in our own anthropoid stage it is one of the first things to disappear under the disabling touch of serious illness or in the development of the tottering and trembling gait of threescore years and ten. The attitude of the white-haired grandsire, tottering along in the autumn sunshine, would be almost absurdly anthropoid, if it were not so pathetic in its helplessness; and the cane with which his feeble balancing power is reinforced is a civilized imitation of the broken bough with the aid of which the gorilla stalks through his native forests.

It need hardly be mentioned that in the realm of morals and manners this law is already accepted as a truism, which has been proved time and again by, for instance, the awful excess of mobs, as during the French revolution, and the frightful disregard for the rights and welfare of others, to say nothing of the decencies and amenities of civilization, which will be shown under the pressure of panic, hunger, or pestilence. The whole of the later veneer of civilization scales off like the viper's skin at the slightest touch of stress or danger, and this rapid blunting of all the social graces and matters of minor conscience, which are the last things acquired in the development of the individual, is one of the most constant and striking symptoms of the approach of chronic forms of insanity. Last to bloom and first to fade is as true of the faculties and even of organs as it is of flowers. If we could speak of the body republic as composed of a confederation of sister states, we would say that the lung was the literal Mexican republic of the entire system—a thing of yesterday by contrast with the stomach or brain, imperfectly adjusted to its new conditions, varying constantly, as I shall attempt to show later, and liable at any time to the outbreak of fatal rebellion or serious insurrection. In short, I believe that nothing less fundamental than some such factor as this will explain the extraordinarily disproportionate morbility and mortality of the lung. Correlated with the recentness of the appearance of the organ is the fact to which we have already briefly alluded, that it is the farthest departure from the original water-loving and water-living type of the primitive cell. There are no other cells in the body which really live in or upon air, even though only upon one of their lateral aspects. All the superficial epithelium of the skin-sheet, so long as it retains its vitality, retains its moisture, and by the time it becomes dry it is practically dead and only mechanically adherent to the body, ready to be shed at any moment. It is perfectly at liberty to protect itself through either oil or keratin, while the lung cell must remain readily permeable.

In short, I believe that we have a fair morphologic basis for regarding the lung as a point of least resistance in the entire organism, a weak spot in the line of defence against the pestilence that walketh in darkness, and this I think will be seen more clearly from the pathologic standpoint, when we come to examine the nature of the majority of the diseases to which it is subject. Head and shoulders above all other processes in these organs stands the "great white plague of the North," as the lamented Holmes vividly termed it—tuberculosis. Tremendous as have been the developments of this disease and wide as the differences of opinion may be as to the balance of its two factors in its etiology, the soil and the seed, all observers are agreed that its most powerful predisposing factor is the lowered resistance in the individual or organ attacked. Of all the deaths which are ascribed to diseases of the lungs in the mortality reports, pulmonary tuberculosis claims from sixty to seventy-five per cent. Nor, I believe, can this extraordinary liability on the part of the lung be accounted for solely or even chiefly upon the grounds of entry or exposure, for the tubercle bacillus is one of the most ubiquitous organisms which has yet been demonstrated in the human tissues. It is to my mind a significant fact that everywhere that it succeeds in effecting a lodgement and establishing a breeding-station is the point at which there are tissue elements of a low degree of resistance, either from rapid growth and the presence of immature cells or from the opposite process of atrophy and absorption. Its commonest sites are the lymph nodes, where the

blood is in process of manufacture; the growth lines of the bones, where a rapid and tumultuous production is constantly going on; the bodies of the vertebræ and intervertebral discs, where the notochord is even yet in process of absorption, and the points where the notochord longest persists are the regions of the vertebral column where tuberculous caries is most likely to occur. I cannot but regard the singular fatality of the pulmonary form of this disease as due not so much to the respiratory tract being the most common proof entry for the bacilli or their spores, but to the fact that here and here alone they find a thoroughly congenial soil in a vital part. Once let the tubercle bacillus get the organism by the lungs, and he can pull it down with as much certainty as the staghound his prey when he once gets it by the throat. Next upon the rôle of infamy comes the dread disease pneumonia, with nearly twenty per cent. of the entire lung mortality to its credit. A few years ago we should have found no support for, but in fact a contradiction of, our theory in the heavy death rate of this process, when it was regarded as an inflammatory and, in the old terminology, a typical "sthenic" disease. Now, however, we simply regard it as due to a lodgement and penetration into a vital organ of a germ which appears not infrequently present in the normal saliva; and its extraordinary preference for the lungs is probably again due to their character as a point of least resistance. Thus we have from eighty to ninety per cent. of the entire lung fatality due to two great diseases, whose chief determining factor is a lowered vital resistance.

Now let us look for a moment at the question of the favorite site or sites of disease in the lung. Is there any one part or region of the lung which clinical experience has shown to be more vulnerable or more frequently the starting-point of disease than any other? For the purposes of this inquiry I shall confine myself to the most frequent and important of the morbid processes—tuberculosis—partly because the changes in this have been more carefully and accurately studied, and largely also on account of the much more gradual and localized development of its symptoms. Pneumonia is as hard to localize as a prairie fire. In this case it is scarcely necessary to ask the question at the head of this paragraph. One of the commonest fundamental pathologic facts in our knowledge of tuberculosis is its extraordinary fondness for the apex of the lung. The proportions vary somewhat among different observers, but all declare that from fifty to eighty per cent. of all cases of pulmonary tuberculosis begin in the apex, and even the second-year student would instantly concentrate his attention chiefly upon this part of the lung in examining the case in which there was any suspicion of this disease. And the consensus of opinion also agrees that of the two apices the right is the more frequently affected in the proporton of about three to two. From time immemorial most elaborate explanations have been advanced to account for this striking and, at first sight, singular preference. I say singular because the apex is, in the first place, the smallest and most definitely limited region of the whole lung substance, and presents not a twentieth part of the area for infection which is offered by the base; and secondly, because if the disease has any connection whatever with irritant or infectious materials, introduced in the inspired air, it is the last place in the world where we would expect, upon *a-priori* grounds, that a lodgement or "settling" of these materials would be likely to take place. Even the bacilli and their spores are known to be ponderable and subject to the law of gravity, and would certainly tend to collect in greatest numbers and with the greatest facility at the lowest instead of the highest part of the organ. The same of course is true as regards the course of congestion or stagnation of either the blood or lymph systems, although it has been gravely declared that certain peculiarities in the arrangement of the pulmonary veins are such as to prevent a proper drainage of this area of the lung and cause it to be a point of deficient circulation and consequently special pathologic liability. And this in the face of the fact that all hypostatic, congestive, or purely inflammatory processes which are known to pathology invariably begin at the posterior aspect of the base. Another explanation which is offered is that in the apex we have a literal cul-de-sac, a point of "no way out here," for both blood and air. The statement must be admitted as perfectly correct. But is it any more true of this region than it would be of any part of the margin of the lung, whether anterior, posterior, or inferior? It is true it is a constricted and cone-shaped projection, but it is not one-half so compressed or "knife-edged" as any portion of the thin leaf-like inferior border, or the irregularly jagged anterior border, particularly on the left side. And it has the advantage of the whole influence of gravity in favor of the return of the blood, instead of against it, as in these other localities. Last, and most weighty of all, we have the theory advanced that the apex is a point of least perfect expansion, and the air-cells, in consequence being less perfectly extended, are more liable to collapse or become filled with catarrhal or serous effusion. As to this purely mechanical version of the expansion theory, I think that only a moment's inspection is necessary to show not merely its inadequacy, but even its absurdity. The cells of the lung are filled not by muscular force or circulatory energy, but simply by the pressure of the atmosphere; and while, if we were dealing with a fluid which had to be forced under pressure into every part of the cavity, we might naturally expect that the highest portion of the cavity would be the one most likely to be imperfectly filled, yet when we remember that we are dealing with a gas, and a heated one at that, the probabilities are absolutely the reverse. Heated air, like any other gas, tends to seek and accumulate in not the lowest, but the highest point of its chamber, and, as far as the mechanical distention is concerned, the cells in the upper part of the lung in the neighborhood of the apex would be more abundantly supplied with air than those in the middle or lower parts of the organ; and this is actually found to be supported by histologic investigation, which has shown that the air cells in the apex are larger and better developed than those in any other part of the lung. The other version, however, of this expansion theory is both rational and weighty, and that is, owing both to the constricted form of the chest at this point, the firmness and solidity of its bony walls, the absence of cartilage and limited movement of the first rib, and the pressure of the shoulder girdles and its great muscles, the normal respiratory rhythm in this region is decidedly limited, and especially is this the case in sedentary occupations or in some forms of manual labor, such as digging, chopping, ploughing, etc., which tend to drag the shoulders forward. This has been developed by Clough into the so-called "postural" theory of the disease. The normal expansive movements being imperfectly performed results in a lowering of the general nutrition and the production of a sort of functional anæmia, which of course predisposes toward almost any kind of morbid process. I would scarcely dispute that, in many cases at least, the stagnation in distention which this theory supposes does actually exist, and is an important factor in the localization of the disease, and yet I am inclined to doubt whether the actual state of activity of the apex has not been very much underestimated. It is perfectly true, of course, that the bony framework of this part of the chest is both limited and rigid, as compared with the

lower regions. But when we remember that we are dealing, as we have already seen, with a heated gas and not with a fluid, and that the whole elastic resiliency and weight of the entire chest wall will, at each expiration, expend itself not only upon driving the air out of the trachea, but also to some degree up into the apices; and further, that while this portion of the chest has firm lateral boundaries, it has no definite roof, and that the pleural cavity actually extends from three-fourths of an inch to one and one-half inches above the border of the first rib, we shall, I think, be justified in questioning whether the immobility of this part of the lung has not been unduly insisted upon. It is of course difficult to get actual observations upon this point, for the reason that after post-mortem rigidity has set in the elastic and continual changing roof of the pleural dome becomes as rigid and unyielding as its bony walls, and even artificial respiration is but a poor substitute in such instances as this for the natural process. I happen, however, to have seen personally two operations in the surgical clinic for the removal of huge masses of (tuberculous) cervical glands, in the process of which the upper aspect of the pleural sac was freely exposed, and the way in which it plunged up and down in response to the respiratory rhythm was little short of appalling, and seriously added to the risks of the operation and the possibility of an accidental puncture by the surgeon's knife. In one case, in a child of about seven, the membrane appeared to have a range in the vertical direction of at least an inch if not an inch and a half, although, seen at the bottom of a gaping wound in the neck half filled with blood, its real range would appear distinctly exaggerated. Be this as it may, I think that I am justified in declaring that neither this theory, nor any other which has heretofore been proposed, is at all adequate to satisfactorily account for the extraordinarily high morbid liability of this region of the lung. When, however, we turn to morphology, we are instantly confronted with the striking and suggestive fact that the apex is precisely the point at which the most active change in the area of the lung is taking place, and hence is again the point of greatest instability and lowered vital resistancee. It is, I think, generally admitted that while the respiratory cavity in mammals is undergoing progressive limitation at both its cephalic and caudal extremities, yet, in man at least, these changes are most active at the cephalic end. This is shown, first, in the not infrequent persistence in adult life, and constant appearance in the embryo, of cervical ribs upon one or both sides; second, in the not infrequent atrophy of the first rib, and, in the internal structure of the lung, in the disappearance of the eparterial system of bronchi. Upon the left side this disappearance is complete, but upon the right side atrophic traces of the system still linger, in the shape of the upper or so-called first lobe, and it is, as we have seen, precisely in this lobe that sixty or seventy per cent. of cases of apical tubercle have their origin. In other words, we have the disease most frequently beginning in that part of the lung which is undergoing the greatest amount of ancestral retrogression, and especially frequent upon that side in which there is still an atrophied remnant of the former development. In fact, I regard tuberculosis as a disease preferring not only the most unstable organ in the body, but the most unstable regions of that organ, and of those regions that side of the median line in which retrogression is still going on. It attacks the weakest side of the weakest part of the weakest organ in the body.

Of course I am aware that the objection will at once be raised that the vestigeal or degenerate nature of this lobe is by no means satisfactorily proved, although the preponderance of investigations and authority appears to point decidedly in that direction. Abey, for instance, from his most careful and elaborate studies of the question, has come most decidedly to the conclusion that the right upper lobe has no remaining counterpart upon the left side, and although Hasse's further investigations have rather supported the view that a process of onward growth headward has been taking place in the human lung, of which the right upper lobe is the first result, yet Weber, LeBouck, and Howes have brought forward considerations which decidedly support the original view of Abey. Unfortunately the ontogeny of man throws but little light upon the question as to whether a symmetrically tri-lobed lung with paired eparterial lobes was the ancestral condition or not, although three cases of a pair of eparterial lobes in man have been reported by Dalla Rosa, and indeed the arrangement of the lungs, as to symmetry, throughout the mammalian kingdom is of the most apparently arbitrary and uncertain character. In a few species, for instance, Bradypus, Equus, Elephas, and Phoca, there is a paired eparterial lobe. But these can hardly be regarded as ancestral or specially primitive forms; nor does there seem to be any possible relation between the phylogeny or the environment of the various forms which will account for either their symmetry or lack of it. In Hystrix, for instance, both the eparterial lobes and their bronchi disappear completely. Nor does our premammalian ancestry throw any further light upon the problem, except that in their very earliest appearance, in Dipnoi, the dividing of the lungs begins at the posterior extremity, the anterior extremities remaining united, and hence the anterior lobes might be regarded as the newest part of the lung. Almost the moment that we land among the amphibia, the symmetry which is originally present begins to disappear, sometimes in favor of the one lung and sometimes of the other, though in the great majority of cases we find the interesting and possibly suggestive condition that the left lung is the one which begins to atrophy, and in the snakes totally disappears. It would of course be a very far cry to say that this ancestral preponderance of the right lung had any bearing upon the marked mammalian tendency for the supernumerary lobe to be retained upon the right side, which of course is the condition in the vast majority of cases. The great name of Wiedersheim must also be added to the support of the "vestigeal" theory of the right cephalic lobe, and the impression is strong from a general view of the entire field that a bilateral symmetry was the original condition of affairs, and that where that symmetry was disturbed the strong tendency is for this to occur at the expense of the left lung. However, as I have said, this is still a disputed question, and Hasse and one or two other investigators of highest standing in Germany are decidedly of the opinion that it represents a new growth, and I have been informed by Dr. Huntington in private conversation that his own studies in this direction have led him rather to this view of the case. However, for the purposes of this discussion, it makes but little difference which view is accepted, all that my postulate requires being that the region should be in a condition of marked instability, which of course would be true in either case. I stated just a moment ago that there appeared to be no connection whatever between the life and habits of any of the mammals in the development of this part of the lung, and so far as balance between the two apices is concerned this is true, but not as to the proportion between this part of the lung and the base in some of the species. Although there are many exceptions, it may, I think, be laid down as a general rule, and indeed I have the high authority of Dr. Huntington for the statement, that the proportional development of the cephalic end of the lung is, if we might use the expression, in excess of the normal in the ungulates, and

particularly in the bovidæ and cervidæ, while, generally speaking, it is below the average in the carnivora. The suggestion has made itself to my mind that probably this condition may be due in the graminivora to the constant pressure exerted upon the base of the lung by the enormously distended paunch, which pressure is so great that in certain forms of gastritis (rumenitis), and also of colitis in cattle and horses, respiration will be so seriously interfered with as to produce fatal asphyxia and rupture of the diaphragm may even result. Be this as it may, we are justified, I think, in stating that the posterior or caudal extremity of the lung in ungulates is to be regarded as the point of the greatest tendency to recession. And here again we have what is to my mind a most interesting and suggestive coincidence, and that is that in domestic cattle the point of most frequent attack and the initial pulmonary lesion of tuberculosis is in the dorso-caudal lobe, though not quite in the same preponderance as in the apex of the human lung. However, Friedberger and Frohner declare that between sixty and seventy per cent. of all cases of pulmonary tuberculosis begin upon the dorsal aspect of the caudal lobe. It would be interesting to compare the morbility of the different extremities of the lung in the carnivora or in the horse with his double eparterial lobe, but unfortunately for our purposes both of these are largely immune to tuberculosis. But it certainly seems a singular coincidence, if nothing more, that this typical disease of lowered resistance should attack in its two principal victims the human and bovine families, in just that part of the lung which lies at a disadvantage either ancestrally or mechanically.

There is one other disease of the lung which it really seems we might almost be justified in regarding as ancestral, and that is emphysema. It has always been something of a puzzle to pathologists why, when every other organ in the body, if inflamed, would undergo either actual solidification or atrophic or sclerotic changes, due to fibroid degeneration with shrinking in bulk, the lung, on the other hand, displays an extraordinary tendency, under almost any form of chronic irritation, to pursue exactly the opposite course and become lighter and more expanded. The usually assigned "back pressure" of cough, or the gasping respiration of asthma, is of course absolutely inadequate by itself, but when we remember that any or all of these causes are acting upon a web of tissue which has gradually grown by complex folding and refolding and meshing from a simple smooth-walled, distended, epithelial sac, such as is still found in the frog and mudfish, we can, I think, hardly avoid the belief that the rarefaction and expansion of the lung in emphysema is simply, as is the case with so many other morbid processes, a reversion to an ancestral stage. No other hollow organ in the body tends to become lighter and more expanded under the influence of chronic inflammation, and no other organ has a similar pedigree. I was much interested in talking with a professional friend a few weeks ago to learn that the great Fothergill had advanced an almost similar suggestion, stating that the "barrel-chest" of chronic bronchitis or asthma was a reproduction of the turtle lung with its expanded air-cells and rigid chest wall; and while the suggestion of the last clause appears at first sight a somewhat whimsical one, yet we have grounds for believing, as I hope to show at some future time, that even the fixed and rigid chest wall, not merely of the asthmatic but also of the consumptive, has an ancestral basis.

Tuberculosis in Cold-Blooded Animals.—Professor Dubard, of Dijon, shows that tuberculosis occurs in cold-blooded animals and can be communicated to them experimentally.—*Province Médicale*, May 15, 1897.

THE TREATMENT OF CANCER BY A NEW METHOD, VIZ., THE ELECTRICAL DIFFUSION OF NASCENT OXYCHLORIDES OF MERCURY AND ZINC.

BY G. BETTON MASSEY, M.D.,

PHYSICIAN [illegible] THE DANE CLINIC [illegible] PHYSICIAN TO THE HOWARD HOSPITAL, ETC.

THE cancerous affections, carcinoma and sarcoma, have been successfully treated by electricity at various times in the past. How extensive the bibliography of the subject is was admirably shown in an article in an English magazine, *The Contemporary Review* for March, 1892, compiled by Mrs. Edith Faithfull, who gave as a reason for her interest in the subject that she herself was a sufferer from epithelial cancer and had been under electro-surgical treatment after two failures of the knife to prevent a recurrence. Some months had then elapsed since an apparently successful result.

Granting the undoubted occurrence of cures by this agent in the many isolated cases reported, it is of interest to inquire why the method has not been more generally used, in view of the reported increase of mortality from this affection under the recognized treatment. This reason was most likely of a threefold nature, including an inadequacy of the method in advanced cases, uncertainty of dosage from lack of acquaintance of the operators with means for measuring the current, and the general dependence of the profession of late on cutting operations.

To Steavenson and Inglis-Parsons, of London, is due the revival of the remedy under modern conditions of electrical knowledge, the latter succeeding in curing a number of mild cases by massive doses of the current, flashed and reversed through the growth from needles of platinum inserted into it and attached to both poles.

It was with these encouraging precedents that I began experimenting with carcinoma of the cervix uteri a number of years ago, and later with sarcoma of other portions of the body, and after several preliminary publications I am now in a position to report results which, though few in number and not always successful, are yet of truly momentous importance to the human race. For as a result of these experiments I can confidently announce that a real cure has been found for sarcoma in accessible locations, and a probable cure for carcinoma similarly situated.

The principle of my method is the interstitial diffusion and impregnation of the growth with nascent oxychlorides of lethal metals by electricity in massive doses. The destructive effect of caustics on these neoplasms is well known, but they act only where placed, exactly as the knife does. By my method a relatively infinitesimal portion of the oxychloride of mercury acts lethally on the cancer cells because of its nascent condition, and because it is carried by the current into the very cells themselves. But the most important point is that by the method we may cause the medicinally laden current to seek out and follow the paths of proliferation of the growth, failure to destroy which is the cause of its reappearance after attempts at extirpation with the knife. It is evident that the cancer cell has less resistance to this interstitial attack than normal tissue, for it is found to lose its vitality at some distance from the electrode without causing necrosis of the healthy tissue, though all tissues in the central portion of the mass will succumb to the method.

The metallic substance is diffused by electrolytic cataphoresis—that is, it is produced by the electrolytic

[1] Read before the section on practice of medicine of the American Medical Association at Philadelphia, June 4, 1897.

destruction of a metal placed within the substance of the growth, the atoms of the metal uniting with the oxygen and chlorine and also with the albumin of the tissues, and this compound, together with still nascent atoms of the metal, is conveyed physically into the tissues by what is called cataphoresis, following the lines of least resistance toward the other pole. Considerable diffusion occurs in all directions beneath this active pole, since the lines of current flow spread out in a widely diverging brush-like form; hence for a proper saturation it is necessary to bring the metal in close contact with all portions of the growth, or else employ a strong current to convey an efficient density to the desired point.

This diffusion of a metal from a corrodible electrode occurs only at the positive pole; it is therefore necessary to connect the active electrode to this pole of the battery. Up to the present time my work has been conducted with active electrodes of zinc, heavily coated with mercury, though it has recently occurred to me that gold and mercury would be a better combination. In action this zinc (or gold) becomes smaller by erosion, but the greatest loss of substance occurs in the mercurial coating, which must be renewed before each use of the electrode. The exact constitution of the metallic oxychloride thus formed has not yet been determined, but it is most probably in the main an oxychloride of mercury.

The cardinal point of the method being a complete and quick saturation of the growth and its ramifications, it is essentially monopolar, the position of the negative pole being so arranged that the whole of the possibly diseased area shall be traversed by the current on its way from the positive or active pole to the negative. This is accomplished in two ways, as follows:

If the growth be small the active electrode is placed within it, and the negative, in the shape of a large pad, on some indifferent surface of the body. Under this arrangement the current traverses a large portion of the body, and on account of the diffusion that will occur through healthy parts I have never employed more than five hundred milliamperes in this way. Cocaine anæsthesia, simultaneouly produced by cataphoresis, is sufficient up to one hundred and fifty milliamperes, but the pain developed above this amperage makes general anæsthesia often best. At the lower current strength it is essential that the application be daily or thrice weekly, and kept up until the whole of the morbid area has been either destroyed or changed into normal tissue before the cavity thus made is allowed to heal. Besides small and recent growths, this method is also applicable to inoperable growths of large size, in which the situation of blood-vessels or important organs renders the more massive and immediate destruction unwise.

The second method, in which an operable sarcoma or carcinoma is destroyed at once, is applied as follows: The patient being anæsthetized, a dozen or more lancet-shaped amalgamated zinc or gold electrodes are inserted around the periphery of the growth, just beyond the area of infiltration, each electrode being attached to one of a leash of fine wires that lead to the positive pole of the battery. The negative pole, a disc covered with absorbent cotton saturated with a solution of potassic arsenite, iodide, or some other salt with a lethal electro-negative radicle, is placed in the centre of the growth itself. It will be necessary to make openings in the skin or mucous membrane for the zinc lancets, owing to their brittleness and dulness. Everything being in readiness, a current of about a thousand milliamperes is turned on through a controller and reliable meter from a current source of proper voltage. The growth will blanch and shrink at once, while areas of destruction appear about each blade and probably in the centre. After a duration of from five to fifteen minutes, according to the size of the growth, the current is turned off, the electrodes are removed, and a dry dressing or acetanilid ointment is applied.

Such is a brief outline of the methods and their technical details, but it should be understood that these details are subject to change in adapting the method to individual cases. The underlying principle that constitutes the novelty is that there is a virtue in the electric diffusion of nascent chemicals throughout a malignant growth which, when of sufficient density per area, will cause an interstitial death and ultimate absorption of the malignant cells at a distance from the electrode, without destroying the connective tissue surrounding them, and that this intracellular lethal action is independent of and additional to the ordinary destructive action of a strong current in the immediate neighborhood of the electrodes. With this important fact established, the cure of cancer in certain localities becomes a mere engineering problem in this age of electric power.

I am happy to state that the truth of these propositions has been corroborated by the independently conducted observations of Dr. J. McFadden Gaston, of Atlanta, Ga., who reported the clinical details of a successful case at the recent meeting of the American Surgical Association at Washington.

The discovery of this peculiar action of nascent oxychloride of mercury and zinc was made while the writer was treating a case of inoperable carcinoma of the groin in August, 1893, by means of a carbon electrode used as the positive pole. The rapid disintegration of the carbon-ball instrument under heavy currents suggested the value of cataphoresis, then already in use in endometritis and other benign conditions, and the mercury was first employed to keep the zinc from adhering to the surface of the wound. But there was an improvement noted in the growth at some distance from the electrode by the next day, and this, coupled with the facts that the use of one hundred milliamperes each time required that the mercury be frequently renewed and that the wound became rapidly aseptic, showed that there was some special advantage in the mercury thus apparently diffused. This case, in which the carcinoma was about three inches in diameter and adherent to the great vessels of the thigh, became much better under prolonged employment of the milder method, nearly the whole of the diseased area filling in with healthy granulations and the gentleman regaining the power to walk, but it was unfortunately impossible to eradicate the cancerous infiltration of the femoral artery and vein, and the termination was ultimately fatal.

Case II.—The second case, and the first apparently complete success, was a recurrent sarcoma of the palate which had been partially destroyed by the writer by ordinary electrolysis in 1893. This man, W. H. L——, aged thirty-nine, had been sent to me by Drs. Hemminger and Bixler, of Carlisle, Pa., with a sarcoma of the left palatal arch fully the size of a goose egg, which he had declined to have removed at the University Hospital. Respiration and deglutition were greatly interfered with. Nearly complete destruction by electrolysis with platinum needles gave him comfort for a year, when it was noticed that lumps were re-developing in the scar. He was at this time (in 1894) placed on the mild zinc-amalgam method, which was kept up daily for six weeks, resulting in a disappearance of the growth after some additional treatment. Three years have since elapsed, and late advices report no sign of return.

Case III.—The third case treated by the method was J. B——, a farmer of Salem County, N. J., aged fifty-five, with an immense epithelial cancer of the face, extending from the external angle of the right eye

to the under border of the lower jaw, the functions of the corresponding eye and ear being abolished and the right ramus of the lower jaw destroyed. Before admission to the Howard Hospital the patient was kindly examined by Dr. Duhring. An effort was made to change the character of this immense surface by the milder method described, the current not exceeding one hundred milliamperes, and the treatment was kept up for some months. As no permanent change of sufficient magnitude was produced, he was finally sent home in a slightly improved condition. I have learned since that he died about a year later.

Case IV.—Mrs. ——, aged fifty, was sent to me by Dr. Saylor Brown, formerly of Williamsport, but now a resident of this city, on October 8, 1895, in a condition of profound anæmia and cachexia from a sigmoidal ulceration of twelve years' standing. She suffered from considerable pain in the right groin, and had from twenty to twenty-five black foul-smelling stools a day.

Local treatment was undertaken with a new hollow sigmoidal electrode devised for the case, with an olive-shaped active surface consisting of mercurialized zinc, and so connected with a syringe that its insertion was facilitated by a cushion of albolene dilating the rectum ahead of the electrode bulb. A stricture was encountered about six inches from the anus, which was extremely sensitive. From forty to one hundred milliamperes were employed with mercury cataphoresis. After several applications a piece of tumor tissue came away, about the size of the last joint of the little finger, and was sent to Dr. Alfred Stengel for microscopic examination, who pronounced it carcinoma. A large number of such pieces came away subsequently, and after a prolonged treatment she was sent home considerably improved in weight and general health, and having not more than two or three stools per day.

Case V.—The fifth case, Mrs. H——, aged thirty-six, of Muncie, Ind., came under my care, March 3, 1896, with a recurrent sarcoma of the left pectoral muscles, about three by four inches in superficial extent, and apparently pressing upon the brachial plexus and axillary vein, for the left arm was swollen and the seat of constant pain. Less than two years before, in July, 1894, the left breast had been removed by Dr. Joseph Eastman, of Indianapolis. This case was an excellent one for the stronger method described, which had not yet been developed. An opening was made through the skin, and a zinc-mercury electrode inserted daily with about one hundred milliamperes, under cocaine cataphorically applied. After a number of applications the swelling and pain in the arm disappeared, and later a piece of the sarcomatous tissue came away, about two and one-half by four inches in size. This resembled a piece of sponge filled with cheesy material, and after its removal the wound was in a fair way to heal. Unfortunately acute mania developed at this time, the patient's mental condition having been suspiciously exalted for some time before admission, compelling her husband to take her home, where the acute mental affection speedily terminated fatally.

Case VI.—Mrs. A——, aged fifty-one, of Salem, N. J., came under my care in June, 1896, suffering from general prostration. In searching for the cause I found a suspicious ulceration of the os uteri, the cervix being enlarged, hard, very irregular in outline, badly ulcerated, and exuding considerable discharge with characteristics of carcinoma. Suspecting malignancy, I at once conferred with her husband and suggested the new treatment. He, however, decided to take her elsewhere for counsel. A week later he brought his wife back to me, saying that he had taken her to Prof. Theophilus Parvin, who concurred in suspecting carcinoma and advised curettage, to be followed later by removal of the uterus. Being still dissatisfied, the patient was taken to a homœopathic physician, who after examination pronounced the affection carcinoma, but proposed that she come under his care for electrical treatment. This latter suggestion caused the gentleman to bring his wife back to me, and she was at once placed on mild daily applications of the mercurial cataphoresis, with currents varying from fifty to one hundred milliamperes. This active treatment did not continue quite six weeks, the local conditions improving rapidly, when she was sent home to return for an application three times a month. This was changed later to once a month. The uterus is now normal, the diseased area being completely healed and general health restored. By appointment I took the patient to Dr. Parvin, May 28, 1897, to verify her present condition.

Case VII.—Mrs. P——, aged seventy, is now under treatment at the dispensary of Howard Hospital for carcinoma of the cervix of the scirrhus variety. The cervix had practically disappeared by erosion when the treatment was begun in the fall of 1896, and the patient suffered from frequent hemorrhages, continuous watery discharges, and hypogastric pain. Under mild applications the hemorrhage ceased, the discharge lost its offensive nature and has nearly ceased, together with the pain, and a cachectic condition has been replaced by relative health. It should have been stated that extensive infiltration of the pelvis existed at the outset of treatment, the vagina being but about one inch in depth and surrounded by unyielding walls. This rigidity of the shortened and narrowed vagina continues, but the whole mass can now be slightly moved.

Case VIII.—Mrs. E. M——, aged forty-seven, came under my care at the Howard Hospital in the autumn of 1896, and hers is the only case so far operated upon by the stronger method described in this paper. A tumor existed in the scar tissue and skin at the site of the right breast, the breast having been removed by Dr. J. William White, at the hospital of the University of Pennsylvania, about three years previously, for carcinoma. The tumor was about the size of a half of an orange. The glands of the axilla had not been removed at the operation previously performed, and were normal. An attempt was at first made to arrest the growth by the milder method, but, this appearing too slow, the tumor was operated upon by mercuric cataphoresis with one thousand milliamperes, at the hospital, May 3d last, in the presence of Drs. A. E. Roussel, E. P. Bernardy, and the hospital residents. The tumor at this time had increased considerably since first seen, measuring three and one-half by three and three-fourths inches. An immediate blanching and shrinking of the growth was noticed, with the production of small necroses at the site of each electrode and in the centre. At the end of thirteen minutes the current was turned off, the electrodes were withdrawn, a dry dressing was applied, and the patient put to bed. The necrosed portions separated painlessly in ten days, leaving an apparently healthy granulating surface; but before this time the interesting fact was noted that the tissues between the electrodes, which had been hard, swollen, vascular, and purplish with malignancy, but had not become necrosed, were now level with the surrounding surface, soft, and possessed of a healthy pink color, showing that an influence or substance passed between the electrodes capable of destroying the cancer cells that was unable to devitalize the normal tissues containing them. All evidences of malignancy had disappeared, except at one spot about the size of a marble, which may require additional treatment.

A review of these eight experimental cases will per-

mit a provisional classification about as follows: Two were cured; two apparently cured; two benefited, of which one is hopeful; and two were failures to arrest the disease.[1]

INFLAMMATION OF JOINTS IN GONORRHŒAL PATIENTS.[2]

By EMANUEL J. SENN, M.D.,

INSTRUCTOR IN SURGERY, RUSH MEDICAL COLLEGE, CHICAGO.

In order to be practical, it is best to speak with Koenig of inflammation of joints in gonorrhœal patients. As a matter of convenience and brevity, it is well to speak of gonorrhœal arthritis, because that term implies etiological and pathological specific meaning. It is rather the exception than the rule to find the specific organism in the exudate of the joint. Nevertheless, the pathological conditions, together with the clinical history, point as conclusively to the gonorrhœal origin as heredity and pathological conditions of a tuberculous joint point to its specific bacterial origin; although the bacteriologist often fails to find the bacillus in the joint contents. Notwithstanding that the joint affection known as gonorrhœal rheumatism was recognized for centuries, it did not receive the attention it deserved until the discovery of the gonococcus by Neisser; when its specific nature, like other forms of metastasis of gonorrhœal origin, was demonstrable in enough instances at least to establish a common origin. Petrus Farestus, in 1507, was the first author who wrote extensively on this subject. At the end of the last century the study of gonorrhœal arthritis gained credence through the observations of Hunter and Ricord; latterly of Loraine and Rollet, who did much to make the affection a distinct nosological entity. Montiggia, at the close of the last century, pointed out the connection between gonorrhœa and rheumatism, and proved gonorrhœal rheumatism to be a distinct form of rheumatic disease. Brandes, in 1854, was the first to bring it before the public as it is known to-day. Gonorrhœal arthritis is not a very prevalent disease, occurring in about two per cent. of all cases of gonorrhœa. It is almost impossible to get a correct ratio of the joint complications accompanying gonorrhœa, for the reason that they appear during the later stages of the acute disease, or a gleet; and when a careful clinical history is not elicited during the course of such a complication the disease is not apt to be traced to its proper source. Patients never think of such an association; in fact, the natural tendency is to shield the guilt of gonorrhœa, and lay stress on the symptoms of the joint complications. It is needless to say that in an enormous number of these cases the affection is erroneously diagnosed as tuberculosis, rheumatism, or otherwise, and consequently the percentage of such complications cited in literature is small. Many theories have been advanced to explain the etiology of gonorrhœal joint complications. We must first consider whether the parent disease is general or local. Andry says that it is inconsistent to speak of a gonorrhœa as a local and at the same time as a general disease. It must always or never be a general affection. It must be admitted that ordinary typical gonorrhœa in its evolution presents no general manifestations in the way of fever or general symptoms, and we should emphatically consider it a local disease. It is only under certain conditions that metastases occur. After the discovery of the gonococcus by Neisser in 1879, gonarthritis became more important in the eyes of the pathologist, as the etiological factor opened a pathway which was formerly shrouded in mystery. Bacteriological examinations of joint effusions were made, and, as failure often attended such efforts, other theories were advanced as an explanation of the primal cause. Rosolimas believed that the gonorrhœal poison produced pathologic conditions at a distance through reflex action on the vasomotor nerves. This theory is also supported by Lewin. Senator explains the cause through inflammatory irritation gradually propagated from the urethra to the sacral plexus and spinal cord, where it affects the trophic nerve fibres. Guyon and Janet have the opinion that gonorrhœal metastasis is the result of toxæmia produced by the ptomains of gonococci in the urethra. Shuster claims that the joint affections may be due to syphilis and gonorrhœa combined. Diday, although believing in the specific infectious character of gonorrhœa as the exciting cause, gives due importance to a rheumatic diathesis as a cause of complications of the disease, such as cystitis, orchi-epididymitis, iritis, and arthritis. Thiry and Guyon maintain that there is no direct connection between gonorrhœa and rheumatism, but surmise that the former through the depressing effects on the system favors the development of a diathesis which has up to the time of the disease, that is, the gonorrhœa, been latent. Peter and Bouillard think gonorrhœal arthritis is due to rheumatism, the gonorrhœa simply provoking the rheumatic diathesis. Duboc is of the opinion that when the disease occurs in later life it is due to a gouty predisposition, because it is more often polyarticular on account of the awakening of the gouty diathesis.

Tammasoli and Hutchinson consider gonorrhœal arthritis only articular rheumatism. Garrod thinks it due to an anæmia. Loeb does not attribute the cause to the action of the gonococcus directly, but supposes that the gonorrhœal process in the posterior urethra plays an etiological rôle by acting as an infection atrium for pus microbes into the lymph and blood streams, and then to the locus minoris resistentiæ in the joint. As proof he mentions the observations of Traube, Koenig, and Lewin. Andry is of the same opinion. He injected gonorrhœal pus into the peritoneum and also into the auricular vein of rabbits without positive results. That the joint affections follow gonorrhœa he thinks is beyond question, but claims that they can also follow ordinary catheterization. Fournier regards gonarthritis to be due to injury of the urethra, and calls it urethral rheumatism. Panas offers this explanation for the arthritis which follows catheterization: "There is erosion of the mucous membrane of the urethra, which acts as an infection atrium to the small superficial vessels. Congestion of the kidneys is the result, not by reason of reflex action, but due to the septicæmia, which causes uræmia and secondarily articular affections." Ricord and R. Bergh think that posterior chronic urethritis is a necessary concomitant for gonorrhœal arthritis. Auvergniot assigns the cause to the gonococcus, although there must be a predisposition. Kammerer believes that as in osteo-myelitis, in which a previous injury may produce a point of least resistance for transient pus microbes, so in gonorrhœal arthritis a previous injury may be a prominent factor. Bond believes the joint complications are caused by a phlebitis of the prostatic veins rather than by an inflammation of the lymphatics, for it is common for the lymphatics to be affected in the early stage of the disease and it is not followed by joint complications. Guérin, Loraine, and Lesègne considered gonorrhœa a general disease, and pointed out in support of their theory the fact that it could produce remote complications. They ascribed the local manifesta-

[1] The last patient mentioned was placed under a second cataphoric operation on June 4th before invited guests from the association and the remaining nodule destroyed by a monopolar application of five hundred milliamperes.

[2] Read before the Tri-State Medical Society, St. Louis, Mo., April 6, 1897.

tions of the disease as a period of incubation, and insisted that no remote complications would ensue if the disease could be stopped during this period, or if it did not extend beyond it. That inflammation of joints during an attack of gonorrhœa, irrespective of whether it occurs during the acute stage or at a later period, is caused solely through the invasion of the gonococcus *per se*, is the *fin-de-siècle* opinion of to-day. Great weight was given to this etiological basis by no less an authority than Fournier. Not only did the discovery of the gonococcus throw light on its migratory character, but the possibility of cultivation of the diplococcus was the basis for philosophical deductions and the means of demonstrating cause and effect. The introduction of the Wertheim nutrient medium (blood-serum agar) opened a new field for the study of the pathogenic action of the gonococcus upon the different tissues. Paltauf and Lang were the first to find the gonococcus in joint effusions and to confirm it by cultivation on nutrient media. Columbina from a joint effusion of gonorrhœal arthritis was unable to obtain any pus germs whatever upon ordinary media; but upon human blood-serum agar obtained abundant pure cultures of the gonococcus. Petrone, Kammerer, Sonnenburg, and Smirnoff found the gonococcus in joint contents, while Leistikow, Haslund, Hoffa, Haab, and Bornemann were unable to find it, but cultivated upon the media instead the staphylococcus pyogenes. Kraske, Brieger, and Ehrlich in numerous examinations have failed to find the specific microbe. Haslund examined the joint exudate in four cases of gonorrhœal rheumatism in periods varying from two to seventeen days after the initiation of the symptoms without finding the gonococcus. Pure cultures from cases of gonorrhœal arthritis have been obtained by Höck, Neisser, and Uffreduzzi, the observation of the last named being conclusive, as the cultures were tested with positive results by inoculation into the urethra. Petrone in two cases of gonorrhœal rheumatism found a micrococcus identical with that described by Neisser in the pus discharge of the urethra, in the blood, and also in the effusion of the affected joint. He concludes that gonorrhœal rheumatism is a metastasis of the specific cause, being transmitted through the medium of the blood to the tissue having a disposition for rheumatic affections. Hewes reports two cases of gonorrhœal rheumatism in which the specific bacterial organism was found in the blood. In one case the cultures of the fourth generation were inoculated upon the vaginal mucous membrane of a dog; thirty-six hours later a thin puriform discharge was visible at the vaginal orifice. A bacteriological examination of this discharge revealed the presence of the biscuit-shaped diplococcus both within and without the pus cells. Distinct colonies of the diplococcus were obtained by culture from the discharge. Hall, of New York, demonstrated the presence of gonococci in the knee-joint in the fourth case on record. During the later stages of the disease he was unable to find them. Kammerer concludes that gonococci do not thrive in a joint fluid more than a few days. In one case he found gonococci on the second day, but was unable to find them later. However, the gonococcus was found in the elbow-joint on the twenty-sixth day by Wyscheminski, in the hip-joint on the fourteenth day by Löwenstein, and in the knee-joint on the twenty-second day by Bergmann.

Joint inflammation can appear during any stage of life, but is most prevalent in young adults, as gonorrhœa is more frequent at that time. Duboc in his able thesis comes to the conclusion that gonarthritis appears most often before twenty-four years of age. This form of arthritis has the appearance of being a primary osteo-periostitis of the epiphyseal cartilage, which is in a state of great physiological activity during this period. According to the same authority, it is often found in the wrist-joint, and most frequently in that of the right hand, because it is used the more often.

Gonorrhœal microbes may cause general infection and localize in joints without being germinated in a specific urethritis. Deutschmann, Panas, von Poncet, Galezowski, Lucas, Tundick, Zatvornicke, and Widmark observed cases following blennorrhœa neonatorum. In quite a number of cases the gonococcus was found in the secretions of the conjunctiva, and also in the effusion of the affected joints. Lucas reports two cases following purulent ophthalmia in infants. In one case, that of a boy eighteen days old, affecting both the left wrist and left knee, syphilis was positively excluded. The mother suffered from acute gonorrhœa at the time of birth. There was purulent ophthalmia of both eyes. The other, an infant three months of age, had an arthritis, implicating the left knee-joint. The child had ophthalmia four days after birth, but inasmuch as it concerned only one joint, Lucas thinks that the arthritis might have been due to accidental causes. Haushalter reports a case of gonarthritis in the newborn, the right knee and left wrist being involved. Purulent ophthalmia was also present. The effusion in the knee-joint contained polynuclear leucocytes and gonococci. In the newborn the affection is generally of a mild type, monarticular, and usually involving the knee-joint. There is little general disturbance, and cure takes place usually in about a month. Gonorrhœal complications of joints are not so likely to occur in the female sex as in the male. This coincidence is probably due, according to Foot, to the fact that the vaginal and urethral mucous membrane is thicker and tougher than the lining of the male urethra.

Davies-Colley claims that the disease occurs as often in women as in men. Auvergniot reports 111 cases of gonorrhœal arthritis in women. One joint was affected in 88 instances, in the remaining the disease was polyarticular.

Philpot reports a case affecting the metatarso-cuneiform joint in a girl nine years of age. Hartley reports 4 cases occurring in the female. Of 252 cases collected by W. P. Northrup, 230 were male and 22 female.

While the disease has a predilection for single joints, in many instances it assumes a polyarticular aspect. Julien found the disease polyarticular in 59 instances and monarticular 41 times. Finger found the knee affected 136 times; tibio-tarsal, 59; wrist, 53; fingers, 35; elbow, 25; shoulder, 24; hip, 18; temporo-maxillary, 10; metatarsal, 7; sacro-iliac, 4; sterno-clavicular, 4; chondro-costal, 2; and intervertebral, 2 times. Northrup found the knee affected 91 times; ankle, 57; foot (small joints), 40; wrist, 27; heel and toes, 21; elbow, 18; hip, 16; shoulder, 16; hand (small joints), 11; sterno-clavicular, 3; and temporo-maxillary, 2 times.

Hortelloup reports two cases of gonorrhœal arthritis of the sterno-clavicular joint. Loeb says the knee-joint is most often affected and the wrist-joint very seldom. Davies-Colley declares that the disease can occur in any joint, but he found it most frequently in the elbow-joint. In those predisposed to gonorrhœal arthritis, one attack does not furnish a lease of immunity to subsequent attacks. When the joint lesion is due to a specific urethritis, each catheterization is liable to cause an exacerbation of the joint symptoms or to produce the disease in other joints. Later attacks of gonorrhœa, whether due to an awakening of a latent process or to an additional infection, are followed almost without exception by joint complications. Hermet reports a case, in the

service of Professor Fournier, of a man thirty-five years of age, of apparent good health, who in six years contracted gonorrhœa five different times. Each attack was followed by conjunctivitis and polyarticular arthritis. Basset observed a patient who in one year had gonorrhœa five times, presumably an auto-infection, followed each time by painful arthritis. There was a typical hydrarthrosis of the knee and elbow. The disease also attacked the smaller joints, not the usual seat of rheumatism, such as the temporo-maxillary, sterno-clavicular, metatarso-phalangeal, and the bursæ of the retro- and sub-calcanea. After each catheterization for cystitis and stricture, there were exacerbation of fever and pain in the joints.

The gonococcus does not, as a rule, leave its habitat, the mucous membrane of the urethra or conjunctiva, while it is exerting itself in acute inflammation. It is only when the acute symptoms have subsided that the latent microbe finds its way, through some secondary cause unknown at the present day, into the general circulation or into the lymphatic system, and subsequently by it reaches a serous membrane at a distant seat. Of sixty-five cases of gonorrhœal rheumatism, Brandes in fifty-one found gleet as its precursor, in seven acute gonorrhœa, and in seven it was impossible to tell whether the joint lesions originated in an acute or in a chronic gonorrhœa. The gonococcus on mucous membranes such as the urethra and conjunctiva acts as a pus microbe; but in its migration to serous membranes it plays an inferior rôle, exciting rather a plastic inflammation. Bumstead says that gonorrhœal rheumatism is essentially a hydrarthrosis and suppuration very rarely occurs. Instances of suppurative arthritis have been observed during a gonorrhœa, although such is rarely the case, and then it is in all probability not pus due to the action of gonococci, but is the result of a mixed infection, the same as an infective arthritis following scarlet or typhoid fever. On mucous membranes the gonococcus has the action of a pyogenic microbe; the pus is not the direct result of the gonococcus but of the chemical substances produced by it. This is evident from the very fact that pus corpuscles appear before the specific agents have reached the vascular layer of the membrane. The gonococcus first attacks the surface of mucous membranes and only after passageways have been formed by the inflammatory changes do the deeper structures become implicated. The gonococcus has a special predilection for mucous membrane, as is well shown by the regularity with which purulent ophthalmia is produced by the infection of the conjunctiva with gonorrhœal pus. The real seats of gonorrhœal infection are the mucous membranes lined with columnar epithelium. Andry believes that the gonococcus, when in course of emigration to predisposed joints, maintains its viability in the blood through the oxygen it contains. Again its possibility of thriving on serous membranes speaks in favor of cells of the papillary type for its maintenance. Aubert says the blennorrhagic secretion is alkaline. The gonococcus thrives better on membranes with an alkaline reaction. In the bladder the gonococcus is not so persistent as in the urethra, which is alkaline. It is well known that the life of the gonococcus in joint cavities is short, since effusions of gonorrhœal joints have been examined soon after the symptoms presented themselves, with positive results as regards the specific cause, while subsequent examinations proved negative, although the symptoms pursued the typical cycle after the disappearance of the primary cause. This has been the verdict of some of the most expert and competent pathologists, including Kammerer, and for this reason the specific cause from a metastatic standpoint is still doubted by a small minority of authorities on this subject. Analogically speaking, we need only look to the peritoneum, which is a specialized form of mesoblastic tissue similar to the synovial membrane of joints. Consider, as pointed out by Sinclair, the two different pathologic rôles played by the same microbe on tissues of different embryological origin. The gonococcus, while causing purulent inflammation of the mucous membrane of the Fallopian tubes, in the surrounding connective tissues is not prone to suppuration, but manifests an intrinsic vegetative capacity by the formation of adhesions. We find the same pathological condition in joints. Of two hundred and seventy one cases observed by Bornemann, only three were of a purulent nature. Of eleven cases in which Haslund aspirated gonorrhœal joints, he found the contents in ten of a purulent nature, or on the border line of being pus, the so-called catarrhal pus of Volkmann; but he was not able to find the specific cause. In the other case the contents were hemorrhagic. The patient was constitutionally undermined, and the joint was massaged for a long time. He compares this condition to the analogue of an incipient hemorrhagic exudate in pleurisy, the result of a low constitutional condition. The ten so-called purulent cases were not evidently of pyogenic origin, but simply simulated pus. In the last few years, Koenig has done more than any one else in the investigation of the pathological anatomy of gonorrhœal joints. As he states, the mortality of this disease is so small, and arthrotomy is so seldom called for, and the opportunity for visual inspection of the pathological field is so limited, that at the present time the true pathology is in need of enlightenment.

Koenig gives the following classification:

Gonorrhœal arthritis.

1. Hydrops articularis.
2. Hydrops articularis sero-fibrinosus et catarrhalis (Volkmann).
3. Empyema of joint.
4. Phlegmon of joint.

The simple hydrops is the mildest form and has a tendency to definitive healing. The fluid contents are of a clear synovial type. The fibrinous form is characterized by a hydrops in which there are flocculent masses and which has a great tendency to cause ankylosis. Empyema of a joint in gonorrhœal patients is rare, as verified by statistics. The phlegmonous type is a severe form of inflammation, in which the ravages of the gonococcus are of a very destructive character. There are erosion and disintegration of cartilages, thickening of the capsule and ligaments, and a phlegmon of surrounding connective tissues often accompanied by inflammation of bursæ and tendon sheaths. In the severe forms of joint inflammations, even with little external swelling, great damage can be done. Koenig has seen a marked genu valgum formed and a backward luxation of the tibia in arthritis of only ten or twelve days' standing. The same authority has observed absolute bony ankylosis, in which the entire joint cavity was obliterated without a vestige of its anatomical identity being left, in three months' time. There is no other disease with such a marked tendency to ankylosis, except a form of arthritis following puerperal fever, which also manifests a marked tendency to ankylosis and which probably ultimately is of gonorrhœal origin. Bradford reports a case of ankylosis of the vertebræ following gonorrhœal rheumatism and extending from the seventh cervical vertebra to the sacrum. Fournier mentions a form of gonorrhœal arthritis which has a predilection for the small joints of the foot, causing great deformity. He speaks of the subject under the title "Pied blennorrhagique." Amarel wrote an exhaustive thesis on this form of arthritis. He called

it "Affection polyarthrite deformante progressive pseudo-noueuse." It attacks the phalanges, which are deformed, and there is amyotrophy of muscles. He observed nine cases of this variety in Fournier's clinic, and concludes that it is probably an atrophy of reflex origin. According to Roustan, when there is a gonorrhœal peri-arthritis there is great liability to muscular contractures. Dercum reports the case of a man thirty-six years of age with gonorrhœal arthritis of the right knee and right elbow, followed by inflammation in other joints. Four weeks later there was muscular wasting of the upper and lower extremities. Electrical examination showed no qualitative change in the muscles. At the time of the report the patient was improving. Myrtle reports the case of a man thirty-two years of age—gonorrhœal arthritis of the right knee and wasting of muscles of both sides from the hips downward, showing the origin of the atrophy to be central and not due to the arthritis. Souplet, His, Leyden, Councilman, and Wilms observed cases of gonarthritis complicated by endocarditis and myocarditis.

The clinical history of gonorrhœal patients is variable. There is a complexus of symptoms which are characteristic of the different forms. Gonorrhœal joint complications may be acute or chronic. The rule is that when the precursor is a chronic urethritis the joint invasion is initiated by acute symptoms. It is very seldom indeed that joints are infected during the acute disease. The inflammation may attack one joint alone; but often it may first be multiple. Roustan described cases in which the pain was not localized. About three weeks after the incipiency of the gonorrhœa, there was slight fever with tenderness in the neighborhood of certain joints, but without marked swelling or œdema in the region of a particular joint, and which lasted several hours or days. The same symptoms appeared in other joints, being of a fugitive nature, when finally the disease selected some joint in particular and became monarticular. He is of the opinion that this peculiar localization of the disease needs further observation and investigation. Acute gonorrhœal arthritis usually makes its appearance from four to six weeks after the primary symptoms of the gonorrhœa. The pain is intense. There is elevation of the temperature to 103° F., or even 105° F., and a corresponding acceleration of the pulse, often ushered in by a chill. The pain is worse at night and the slightest movement causes the patient to cry with pain. The whole area around the joint is tender, but there is no particular spot of tenderness. There is flexion of the joint due to the patient assuming the position affording the greatest degree of relief. According to Bond, a pathognomonic sign is tenderness of the heels in walking. The swelling of the knee-joint is peculiar and almost diagnostic, the effusion being most marked in the upper part of the joint under the vasti muscles. After exudation into the joint, digital palpation will reveal fluctuation. When the inflammatory process has become peri-articular, there is great œdema. The muscular structures above and below the joint become atrophied. The discharge from the urethra diminishes or ceases to flow during the height of the joint inflammation, but when the acute symptoms begin to decline it again appears. The acute form can gradually become subacute and then chronic. During the course of a gonorrhœa, the chronic form of arthritis may assert itself, coming on insidiously with slight symptoms. There is a gradual filling of the joint with a catarrhal transudate. These cases present almost identical symptoms with a tuberculous hydrops, except that in the latter there is often a point of tenderness in the epiphyseal line, denoting a primary osseous tuberculosis and a secondary synovitis. In adults the diagnosis is difficult, as the synovial tuberculosis is primary. The clinical history and macroscopical and microscopical examination of the aspirated joint contents will throw light on the diagnosis. Koenig believes that the urethra should be investigated in every case of acute catarrhal inflammation of joints, and that in ninety-nine out of every hundred it will be found to be of gonorrhœal origin, provided there is a blennorrhagic discharge. This positive opinion of such an eminent authority should have great weight, as doubtless hundreds of cases of gonorrhœal hydrops are diagnosticated and treated as tuberculous affections. Hutchinson's contention is that in patients who are gouty or rheumatic, any urethral discharge, specific or not, may give rise to symptoms similar to those of gonorrhœal rheumatism.

The disease with which it is most apt to be confounded is polyarthritis rheumatica. The fever in gonarthritis does not continue long. The disease is more chronic, continuing, according to Nolens, two months or more; while, according to Lebert, in polyarthritis rheumatica the average duration is only forty-one days. Gonorrhœal rheumatism affects one or few joints. If a new joint is attacked, the one previously disturbed does not become free, as is the case in acute rheumatism. The joint affection is between a serous and a suppurative synovitis. Gonorrhœal arthritis is more often complicated with inflammation of tendon sheaths and bursæ than articular rheumatism, while in the latter endocarditis is more often a concomitant.

The prognosis as regards the mortality is favorable. Death is seldom caused by this disease, except when there is an accompanying gonorrhœal endocarditis or meningitis. On the other hand, it is very grave when considered in reference to functional results. According to Koenig, when the joint effusion is of a distinctively catarrhal nature (Volkmann), the prognosis is relatively good. If passive motion is resorted to early enough, the patient may escape even stiffness of the joint, much more ankylosis. The rule is, however, that, in spite of the best medical and surgical care, there is apt to be more or less functional interference. The outlook is more favorable if the ankylosis be of a fibrous nature, but unfortunately it is more often osseous. Auvergniot reports twenty-three cases affecting the wrist; in sixteen there were no bad after-effects, in the rest stiffness and ankylosis. In thirteen cases involving the knee-joint, only four subjects escaped permanent injury.

The treatment rests upon the etiological basis. In the absence of more convincing evidence we must assume a predisposing cause in conjunction with the essential one, the gonococcus. The fact that joint complications appear only in two per cent. of all cases of gonorrhœa bespeaks a predisposition, whether anatomical, rheumatic, or gouty. The fact that salicylic acid and its salts have a favorable action on the disease, although they do not shorten the duration, forces us, I believe, to assume a rheumatic diathesis as a prerequisite at the present time. Alkalies, such as salicylates, salol, carbonate of lithium, and citrate of potassium, are antirheumatic and antiblennorrhagic. The routine medical treatment of these cases in the surgical clinic of Rush Medical College is the iodide of potassium in moderate doses, and the results are invariably good. Jullien claims that the oil of wintergreen comes nearest to being a specific of any of the remedies used. R. W. Taylor reports favorable results from internal administration of this drug in twelve cases. Shuster works on the basis that joint complications may be due to gonorrhœa and syphilis together. Swellings of the tuberosities of the tibia, the sternal joints, or sacrum should call for mercurial treatment. Jullien treated a sixteen-year-old girl, suffering with gonorrhœal rheumatism, with subcutaneous injections

of corrosive sublimate. After nine injections the disease was cured. The fever was combated with antipyrin and salicylates, which remedial agents were in all probability the true cause of the favorable result. The original focus should not be lost sight of. Lucas, in a case of purulent gonorrhœal ophthalmia which was the primary cause of the general dissemination, applied strong lotions to the eyes and diminished the discharge, with a correspondingly improved arthritis, followed later on by a complete cure. Ricord and R. Bergh, believing that posterior urethritis is necessary for gonarthritis, claim to have prevented it by means of abortive injections, thus limiting the urethritis to the anterior portion of the canal. The urethra should receive antiblennorrhagic treatment; especially strictures should call for proper treatment, as an infection atrium is liable to remain posterior to such an obstruction. The joint should be placed at rest on a splint and surrounded by hot fomentations, followed later on by equable pressure by means of adhesive strips. Absorption should be promoted by pressure, external medication, or puncture, as occasion demands, for the tendency of these effusions is to remain and cause ankylosis. Jullien recommends external inunction of ichthyol ointment in the strength of fifty per cent. in lanolin. The French even to-day resort to vesication in para-articular processes. Koenig believes in the external use of tincture of iodine in phlegmonous peri-arthritis. He lays great stress on the proper application, and insists on not simply applying a salve but thorough medication to the point of blistering. In the hydropic form, Koenig taps the joint, injects carbolic acid, and also resorts to vesication and compression. When the hydrops is sero-fibrinous, aspiration and injection are all the more necessary. Fütterer, of Chicago, injected one-half drachm of the oil of sandalwood in the affected joint, with brilliant results. He resorted to this treatment in four cases. During the first forty-eight hours after injection all the symptoms were exaggerated, but a gradual permanent amelioration followed, with no functional disturbance remaining. In case of empyema of the joint, immediate incision and tubular drainage are indicated.

Christen is very radical in the treatment of this disease. He advises arthrotomy in all cases as soon as possible after the onset. If the disease is multiple, two or three joints should be opened daily. He claims immediate cessation of pain, falling of temperature, and no ankylosis. The subsequent treatment consists of immobilization and massage. After the acute symptoms have abated, absolute rest may be maintained by a plaster-of-Paris cast, but this should be of short duration. Vicious position should be guarded against in case of ankylosis. If there is an inclination to erosion of the cartilages or bone in the joint, traction by weight and pulley is of great importance to remove the pressure of contiguous structures. For the realization of the best ultimate hopes, too much stress cannot be laid on the importance of scientific massage and active and passive motion.

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Sarcinæ and Torulæ.—

℞ Acid. sulphurosi . . . . . ℥ i.–iss.
Infus. columbæ . . . . . ℥ xi
M. S. Wineglassful ten minutes before meals.

—Lawson.

A STATISTICAL STUDY IN EPILEPSY.

BY L. PIERCE CLARK, M.D.,

FIRST ASSISTANT PHYSICIAN AT THE CRAIG COLONY FOR EPILEPTICS, SONYEA, N. Y.

In a careful study of ninety-five hundred and forty-five seizures which occurred in one hundred and fifty cases of epilepsy admitted to the Craig Colony during the past year, considerable attention was devoted toward ascertaining whether the attacks occurred in periods; but the results showed that there was no periodic recurrence of seizures which could be at all definitely predicted from time to time. These observations are contrary to the experience of some investigators in epilepsy, who maintain that the malady is as much a regularly periodic disease as it is a convulsive one.

It has been frequently stated by neurologists that the generative functions are in close connection with the higher cerebral centres, and in most mental diseases, as well as in many convulsive ones, the organs of generation are diseased, which disorder is very often regarded as a cause of the nervous disease or figures prominently as a result of it. During the year's study upon the female epileptics at the Craig Colony, it was noticed that, although at the time of their admission many patients (and very frequently their friends) stated that the seizures appeared regularly at the menstrual period, yet this was not borne out by observation of such cases after admission. For several months the convulsions, in a very few cases, appeared three or four days before and after the menstruation began, but when such patients had become thoroughly accustomed to colony life the apparent association disappeared. The greater number of the female patients were remarkably free from genito-urinary disorders.

When we take into account the fact that epilepsy is a disease which often makes its first appearance during the night, and may exist for years as such, we would naturally infer that the greater number of attacks would occur at night; but the records kept at the colony show that the greater number of attacks occur during the day rather than by night, being in the ratio of five to four. This may be accounted for in a measure by the fact that the treatment in the majority of cases was a bromide-chloral one, and chloral, when given at night, is a well-known remedy which throws nocturnal seizures into diurnal attacks. A plausible explanation for this fact rests upon the physiological action of the two drugs. The ultimate effects obtained from bromide and chloral are about the same. The effects of bromide are much longer felt but are less slowly produced when compared with those of chloral. Both drugs probably have their main action upon the circulation. Obviously, for rapid effect, chloral would have the advantage over bromide. As morning approaches, after a night dose of chloral the unstable nervous centres approximate the condition of a fulminant, but receive a check by a relatively weaker drug which proves impotent to prevent the explosion of nervous substance. Consequently a seizure which would have occurred at night is, with chloral treatment, tided over until the morning or the following day.

The hour of the day (twenty-four hours) in which the greatest number of epileptic attacks occur has been differently stated by neurologists. Some have said that they occur with greater frequency in the early morning hours, between eight and ten o'clock. Féré has stated that practically no attacks occur between the hours of eleven and twelve o'clock in the forenoon.[1] In a study of nineteen hundred and eighty-five attacks, he found but three occurring at this hour. That this statement is not in accord with statistics at the Craig Colony may readily be seen by reference to the appended table of the record of nearly ten thousand seizures, which have been tabulated by each hour in the twenty-four during each month from March, 1896, to January 1, 1897—a period of ten months. The time of occurrence of each attack in the twenty-four hours, its duration, and its character are a part of the permanent record of each case at the colony. This table shows that three hundred and seventy-eight attacks occurred between eleven and twelve o'clock, making this hour rank sixteenth in the order of frequency of the whole number for the twenty-four hours. It will be seen that the number of attacks at this hour is only twenty below the average. The greatest number of attacks have been found to occur at the hour of four o'clock in the morning; the least number at seven o'clock at night.

TABLE SHOWING 9,545 EPILEPTIC SEIZURES, ARRANGED TO SHOW THE NUMBER OF ATTACKS WHICH OCCURRED IN EACH HOUR DURING THE DAY FOR A PERIOD OF TEN MONTHS.

1 A.M.	353	13 P.M.	412
2	411	14	443
3	433	15	424
4	537	16	337
5	453	17	341
6	498	18	253
7	392	19	224
8	339	20	344
9	355	21	455
10	420	22	485
11	378	23	394
12 M.	435	24	420
		Total	9545

The diet for epileptics has been so arranged that the heaviest meal of the day occurs at noon, and the progress of stomachic digestion of food is probably complete in two hours. Then we have a decided remission in the frequency of attacks, that continues until the nine o'clock hour, when they once more occur frequently. Nevertheless we should be guarded in accepting this explanation as an adequate one to settle the question, as the antithetical idea has been used to explain the supposed great infrequency of attacks occurring at the eleven-o'clock hour, which we have found to have little or no basis in fact.

Aside from the auto-intoxicant theory for convulsive disorders, which has been and is still being so assiduously urged by Haig and Bouchard, the epileptic is still known to be a person incapable of receiving any sudden excessive or otherwise abnormal impression anywhere throughout the whole organism, and especially in the alimentary tract. This is well exemplified by the fact that nearly one-half of the patients admitted to Craig Colony suffer from more or less severe constipation.

The reception of food and its assimilation are one of the very primitive habits of life, yet any abnormal departure from its regular and methodical processes cannot but act disastrously to the whole organism. The recognition of this fact has led to the present careful consideration of the dietary for epileptics. From a simple methodical principle, any abnormal departure in diet would act as a fulminant to the unstable nervous centres in the epileptic's cerebral cortex.

In drawing any conclusion in regard to the cause for seizures appearing more frequently at one time than at another, we should consider the metabolism of the whole organism and its influence reflexly upon the nervous system. This undoubtedly is the first and greatest factor which should be studied in order to solve the question of the frequency of attacks at certain hours during the day. As for the greatest number of attacks occurring at 4 A.M., two reasons may be

[1] Dana's "Text-Book of Nervous Diseases," chapter on Epilepsy.

given to explain the great frequency of the phenomenon. It is one of the sleeping hours when the epilepsy is farthest away from the sedative action of the chloral and bromide, as the patient generally awakens some time during the eight-o'clock hour. Again, the night spent in sleep is well known to be a time when reflex activity runs riot in the organism. All the vital forces are at their lowest ebb at 4 A.M., and, above all, the nervous system is especially defenceless and open to the reception of reflex action.

There are undoubtedly many other factors operative in certain cases of epilepsy besides reflex and digestive disturbances. While we are aware that such a study as is here presented in this article is not at all conclusive and final, yet we do believe that such a tabulation of statistics has a certain value and interest. We hope in time to see such studies, by means of such untiring investigation as has characterized scientific research in other more tangible diseases, contribute their share toward solving the mystery of the causation of epilepsy.

Clinical Department.

PROLONGED PREGNANCY AND PREMATURE OSSIFICATION OF THE CRANIUM, CAUSING DYSTOCIA.

By H. S. BAKETEL, M.D.,

DERRY, N. H.

Early in March I was engaged to confine Mrs. E——, multipara, aged twenty-seven. She expected her accouchement March 27th. I heard nothing from her until the morning of April 26th, when I was called in by the husband and given the subsequent facts. She had her last menstrual flow June 20, 1896. Shortly after its cessation she went away on a visit and was absent from her husband nearly two months. Her pregnancy had been uneventful. About March 25th she had pains, and, thinking the labor near at hand, sent for her nurse. These pains continued several days and stopped suddenly, leaving her very lame in the right leg. The fœtus at once became more active, but there had been no further signs of labor. The woman had given birth to three children. The first, born September 8, 1890, came at full term and lived twelve days. The second, born February 1, 1894, died shortly after birth; this confinement was twenty-five days later than expected. The third confinement came November 24, 1895, after a difficult labor, lasting seventy-eight hours; it was twenty-eight days late.

On examination I found the os undilated and labor evidently some time away.

About eleven o'clock on the night of April 28th I was summoned, and found the os dilated three fingers and made out a left occipito-anterior presentation. The pains, occurring about once in ten minutes, lasted on an average seventy seconds. The head had not engaged. One hour later examination showed no change, except that the os had fully dilated, and in two hours the conditions were the same.

Shortly after this the pains decreased in severity, duration, and frequency, and on April 29th did not occur more than once in twenty minutes. That night they assumed their former character, but repeated examinations showed no progress.

Pains continued intermittently April 30th and May 1st. Late in the night of the latter day I called in consultation Dr. David S. Clark and Dr. Frederick Perkins. It was decided to wait until daylight, and then remove the child with axis-traction forceps or do a craniotomy, as the circumstances warranted. I gave hypodermatically one-half grain of morphine sulphate and one-one-hundredth grain of atropine sulphate, and ordered repetition in two hours if the pains did not desist. Notwithstanding these precautions, there had been steady pain, and at eight o'clock the next morning when we saw the patient the head had engaged, but seemed wedged in position.

Under chloroform anæsthesia the low forceps operation was done, and the woman delivered of a male child weighing eleven pounds ten ounces. The delivery was so difficult that it was feared craniotomy would have to be resorted to, but perseverance rendered this step unnecessary. The child was large and finely developed, with diameters about three-fourths of an inch above the average. There was complete closure of the occipito-parietal fontanelle, while the fronto-parietal was exceedingly small. The sutures were very firm and could not be felt. The occipito-mental diameter was six and one eighth inches, the biparietal four and one-fourth inches, the fronto-mental four and one-eighth inches, and the suboccipito-bregmatic four and seven-eighths inches.

This woman, who is unusually strong, was in hard labor from Wednesday morning until Sunday morning, or ninety-four hours. She ran over the allotted two hundred and eighty days a period of thirty-six days, making her pregnancy continue three hundred and sixteen days. I am fully convinced of the truth of the mother's statement as to the last menstrual function and absence of intercourse. The large size of the child and his strength both in muscle and voice show advanced development.

It has been judicially decided in the United States that a pregnancy may last three hundred and seventeen days. Thompson[1] reports a case in which pregnancy lasted three hundred and seventeen days from the last menstruation, and three hundred and one days from the last coition. In the *Boston Medical and Surgical Journal*, May, 1859, a pregnancy of three hundred and thirty days was noted. Dr. A. L. Rodenstein[2] reported four cases, in which pregnancy was prolonged on an average two months. Maur[3] had a pregnancy continuing three hundred and thirty-four days. Olshausen[4] is of the opinion that the duration of pregnancy should not be restricted to three hundred days, but that the limit be extended to three hundred and twenty-five. Spiegelberg[5] and Winckel also believe that pregnancies can be prolonged far over two hundred and eighty days.

Legally the authorities of this country differ. In the case of United States *vs.* Collins,[6] tried in the United States District Court for the District of Columbia, in which the defendant was on trial for non-support of a bastard child, the presiding justice ruled that a living child could be born after a gestation of between six and twelve months; and the Supreme Court of Indiana, in the case of The State *vs.* Dill [7] for bastardy, allowed that pregnancy could continue three hundred and thirteen days.

Medical literature comments on the rarity of ossification of the cranium and prolonged pregnancies; hence this report.

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Persistent Furunculosis.—The internal use of ichthyol and arsenic sulphide, giving of the former from three to ten drops in capsules thrice daily, while the latter may be advised in doses of from one-hundredth to one-twenty-fifth of a grain thrice daily.—Cantrell.

BILATERAL CONGENITAL AMAZIA.

BY FRED. C. ZAPFEL, M.D.,

CHICAGO.

By referring to the literature on this subject I find that this is a rather rare occurrence, and one which, according to some authors, is found in monstrosities only. It has been my good fortune to have seen a case of this kind, and I take this opportunity of putting it on record.

Some time ago I was called to see a lady, who had been suddenly attacked by a violent pain over the heart, followed by unconsciousness. Upon examination I found a complete absence of both breasts. The chest was well formed, but there were no mammæ. It was not a case of micromazia, as I at first suspected, but a total absence. The nipples, however, were large, like a normal female nipple, and had a pigmented areola around them.

The lady is thirty-two years of age, married eight years, has had five miscarriages, all at about the sixth month, and has given birth to five children, two of which are twins. The labors were all normal. She has menstruated only once since her first pregnancy, and is now again four months pregnant. She gives a history of having never been sick, and claims that her breasts were at no time larger than they are now. She has an aortic insufficiency now. The history shows that this is not a case of atrophy, either primary or secondary, but of true bilateral congenital amazia, without a concomitant infantile uterus.

331 CLEVELAND AVENUE.

HYDRAULIC DILATATION OF THE URETHRA.

BY J. F. RUMER, M.D.,

DAVISON, MICH.

THE following is a short description of my method of treating retention of urine caused by any condition that produces a lessening of the calibre of the urethra short of absolute and complete closure. I have been advising this long enough to become perfectly satisfied that it is absolutely harmless, and if properly practised by an intelligent patient is of inestimable value. Instead of dilating with sounds or using a catheter, I have for the past two years instructed my patient that once every day, when getting ready to pass water, he should press the index finger firmly against the meatus so as completely to prevent the urine from escaping, and slowly and carefully exert pressure by contracting the muscular coats of the bladder. Thus is obtained a degree of water pressure that is considerable, and at the same time is equally distributed along the urethra, in such a manner that all irritation, such as cannot but be produced on the surface of that delicate lining membrane with a sound or catheter, no matter how skilfully used, is avoided. Pressure is made, and thus dilatation is effected in a safe, pleasant, and efficient manner. I firmly believe that there is also a general toning up of the muscular parts that are concerned in the act of micturition, and possibly of the seminal parts of the penis, as I have frequently had men impotent tell me that after practising this method a while they seemed to be regaining their lost functions. I believe it strengthens the muscular coats of the bladder, gives more power to the expulsive effort, increases the size of the stream, and makes the act of micturition in this class a natural physiological function instead of a pathological experience. Every physician can call to mind patients who day and night every two or three hours must go to the closet, take a catheter, and draw a few drops of urine, and scarce recover from the discomfort of the act before it must be repeated.

I am firmly convinced that, if this method of treating these cases is faithfully followed, very much suffering can be avoided.

SPINAL HYPERÆMIA WITH VICARIOUS MENSTRUATION.

BY FREDERICK D. TYRRELL, M.D.,

SPRINGFIELD, MASS.

TEN weeks ago I was called in to attend Miss J——, a strong, healthy, plethoric girl, seventeen years of age, for "paralysis." It had been her habit to flow five or six days each month, and during her last period, the night being warm, she placed her feet through an open window and fell asleep. Toward morning it grew very chilly, and when she awakened she found that her menses had ceased. She complained of a "fire in her backbone," pins and needles in the feet, and finally complete paraplegia with anæsthesia, as shown by pricking the limbs with needles and applying heat and cold. I made a diagnosis of spinal congestion caused by the suppression of the menstrual discharge, and resorted to the usual treatment of leeches, ergot, and quinine, with gratifying results.

During my absence she complained to her mother that her feet felt cold, so a hot flatiron was applied. In some manner the iron worked its way up as far as the calf of the leg, and caused an ulcer there the size of a silver dollar, which I dressed daily.

In the course of a week her menstrual flow appeared and continued for five days. Meanwhile, the sore on her leg bled profusely and ceased only when the menses had stopped. I paid no attention to this and continued to dress it regularly.

The next month when her menses again appeared, the heretofore comparatively dry wound again began to bleed, and, as before, continued throughout the period of menstruation.

The patient is now up and able to be about, and the wound is entirely healed.

ICHTHYOL IN A CASE OF CHRONIC PURULENT INFLAMMATION OF THE MIDDLE EAR.

BY THERON W. KILMER, M.D.,

NEW YORK.

THE case in question was that of a boy, six years old, who had complained of frequent attacks of intense pain and a continuous discharge from his right ear, dating from an attack of scarlet fever seven months previous. Upon examination I found a moderate amount of thick pus and crusts lining the auditory canal, which having been cleansed, the drum exhibited the following appearance: it was of a pale color, with a slight perforation in the posterior-inferior quadrant. Hearing was to some extent impaired. After thorough cleansing of the parts with warm water, a pledget of cotton was soaked with a three-per-cent. solution of ichthyol, and placed close up against the eardrum. A second piece of cotton was loosely placed over this as a means of protection. After two days the patient again visited my office, and the cotton was removed. All pain had ceased, the discharge was less, and the parts appeared better in every way. The ear was again packed as before, and with a third subsequent treatment the discharge was totally stopped, there has been no pain, and the hearing is a very little improved.

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GONORRHŒAL ENDOCARDITIS.

FOR a long time it was supposed that rheumatism was the principal cause of endocarditis, with its consecutive valvular defects, but evidence has been gradually accumulating that these complications may attend any infectious process, and possibly also any toxic process, under suitable conditions. In the case of the infections it may be assumed that, as a rule, an active, acute inflammatory process is set up as a result of the lodgment of infective principles (bacteria) upon and within the endocardium; while in that of the intoxications the process is rather a slow, chronic, hyperplastic, or degenerative one. It is to be borne in mind that under the former conditions a state of intoxication is often also developed, so that at times both sets of etiological factors are operative in the same case. The infectious endocarditis is most likely to be of the verrucose, ulcerative, or malignant variety; the toxic of sclerotic or indurative type.

That gonorrhœa, among other infections, is capable of causing endocarditis, as well as other serious complications, has come to be recognized only within comparatively recent years. Attention had been called prior to 1870 by French observers, and some ten years later by the Germans, to the occasional clinical association of the two disorders. MacDonnell, of Montreal, in 1891 insisted upon their etiological relation, and Leyden, before the Berlin Society for Internal Medicine in 1893, seems to have been the first to demonstrate the actual dependence of the endocardial lesion upon the activity of the gonococcus, which Neisser in 1889 had shown to be the cause of the urethritis. The infectiveness of the gonococcus has further been shown by its capability of inducing, beside urethritis, cystitis, epididymitis, orchitis, etc., also synovitis, arthritis, abscess, myelitis, and inflammation of serous membranes.

A considerable, withal not large, number of cases of gonorrhœal endocarditis has been reported since Leyden's communication upon the subject. In the majority, although the gonococcus could be found on microscopical examination, culture experiments proved unsuccessful, owing to the sensitiveness of the microorganism to external influences. An additional case of this kind was reported by Siegheim (*Deutsche medicinische Wochenschrift*, May 13, 1897), at a recent meeting of the Berlin Society for Internal Medicine.

The patient was a woman who came under observation on account of chills, followed by fever, occurring daily for two weeks between twelve and half-past twelve noon. Examination disclosed a faint systolic murmur over the tricuspid orifice, with a pulse frequency of 112, but no elevation of temperature. The appearance of the patient, however, aroused a suspicion of ulcerative endocarditis, and this was strengthened when it was learned from the husband that he was suffering from an attack of gonorrhœa. In the further progress of the case a systolic murmur became audible over the mitral, and later a loud diastolic murmur over the aortic orifice. The pulse increased in frequency, became dicrotic, irregular, and intermittent, and finally distressing palpitation and great dyspnœa set in. The fever pursued for a time a typical intermittent course, subsequently becoming irregular. The spleen became gradually enlarged and appreciable on palpation. Vomiting set in, and finally blood and albumin appeared in the urine, the secretion of which further became notably diminished. Dyspnœa and cough became aggravated, until death resulted amid symptoms of pulmonary œdema.

Post-mortem examination disclosed the existence of proliferative ulcerous endocarditis of the aortic valve, with myocarditis, pulmonary œdema, nephritis, parenchymatous hepatitis, endometritis, and purulent cystitis. During life inoculations of agar-agar and peptone-bouillon were made with blood obtained by puncture of a vein, but with negative results. Smear preparations likewise failed to disclose the presence of micro-organisms. Inoculations with blood obtained from the heart at the autopsy also yielded negative results, but in smear preparations and in sections made from the endocardial vegetations and examined under the microscope diplococci were found possessing all the characteristics of gonococci.

The failure of bacterial colonies to develop in the inoculated culture media in this case is considered sufficient to exclude the presence of the ordinary pyogenic cocci. The gonococcus, on the other hand, has been shown to be extremely sensitive to thermal variations, developing only within a certain narrow range of temperature. As the autopsy was made in this case twelve hours after death, the negative results of the inoculation-experiments need not therefore be viewed with surprise; nor can they be considered as throwing doubt upon the identity of the organisms observed under the microscope.

"THE IMMORALITY OF THE ANTIVIVISECTION MOVEMENT."

THE above is the title of a striking article in *The Open Court*, written by Dr. Paul Carus. In it the antivivisection movement is stripped of its sentimentalism and the subject is presented in a common-sense and practical manner. The antivivisection party have always posed as the exponents of the teaching of the Christian religion, and have insisted that Christianity and vivisection are incompatible. They hold that vivisection is immoral. This has been at all times their strongest argument. Dr. Paul Carus denounces

this proposition, and presents the case in a quite different light. He contends that the immorality rests with the antivivisectionists, and says: "The antivivisection movement, as it is carried on, is in a sense guilty of immorality, and we deem it our duty to state our views of the subject openly and frankly. The two greatest religious leaders of mankind, Buddha and Christ, have taught us to have compassion, but neither the one nor the other prescribed to avoid once and for all the infliction of any suffering. On the contrary, they taught that suffering is unavoidable. Buddha did not say that salvation is obtained by yielding unreservedly to the sentiment of compassion; he taught salvation by enlightenment. And Christ's mission is mainly a lesson of sacrifice, which means that salvation is obtained through suffering."

And again he says: "As to vivisection, we all know that it is not a pleasant duty of the physiologist, but it is an indispensable task that must be done for the sake of investigation. It falls within the same category with all sacrifices. Vivisection may truly have, and frequently will have, the tendency of blunting the sentiments of the vivisector; but so does dissection. Shall we surrender dissection as an obligatory part of medical instruction, lest the moral sense of the student be shocked?" The article concludes with these words: "Vivisection, if strictly kept within the limits of its important purpose, is a moral obligation; and he who would hinder the physiologist in the performance of his duties makes himself guilty of immoral conduct; but any cruelty to animals — viz., every lack of respect for life, every thoughtless or wilful infliction of pain, every delight taken in torturing, injuring, or destroying sentient beings — is a crime that should be denounced and reprimanded, and, if necessary, checked by the power of law."

THE ETIOLOGY OF MULTIPLE SCLEROSIS.

Although many of the etiological factors of this interesting disease have been determined in recent years, the true cause of the affection has not yet been established, and according to some studies of Blumreich and Jacoby it would appear that a variety of etiological moments may be invoked. The account of these investigations, based upon a clinical study of twenty-nine cases observed in Gerhardt's clinic at the University of Berlin, is published in the *Deutsche medicinische Wochenschrift* of July 8, 1897. Of the twenty-nine cases studied, twenty-three occurred in males, six in females. Twenty-two were between the ages of twenty and forty, and seven between forty and sixty. In some the first symptoms were noticed early in life. A number of the patients had suffered from infectious diseases during childhood; but in only one of all of the cases was there any direct relation between the infection and the nervous disorder. This case occurred in a man of twenty-five, in whom the symptoms of multiple sclerosis developed in the sequence of an attack of influenza. In only one of the cases could a history of syphilis be elicited with certainty; in three a doubtful history of this kind was obtained. In six of the cases there existed the possibility of intoxication as an etiological factor. Two patients were addicted to alcoholic excess, but in both instances other causative influences might have been operative. One patient had suffered from carbon-monoxide poisoning nine years before the advent of his nervous symptoms. Three patients had been exposed to industrial intoxications. Two of these were painters, who had, however, never exhibited other symptoms of plumbism. In one there had been chronic suppurative disease of the ear from childhood, together with eye changes suggestive of multiple sclerosis prior to exposure to lead. In the other the first symptoms of nervous disorder followed immediately upon traumatism. One patient was occupied in exhausting glass bulbs employed for incandescent electric lighting, and had suffered from mercurial intoxication. In nine cases the patients attributed their trouble to grief and overexertion, but in five of these there existed the possibility of other etiological influences. In all of the cases special inquiry was directed to the influence of traumatism in causing the nervous affection; and in eleven cases positive evidence of this nature was secured. In the remaining five the presence of other etiological possibilities and the length of time between the two events caused doubt as to the relation between the injury and the disease of the brain and cord.

This study shows that there is no constant, universal cause for multiple sclerosis. In some cases the mode of origin escapes recognition. In others there are three main groups of exciting causes, viz., acute infectious diseases, intoxications, and traumatism. These may operate by the direct action of the injurious agencies in inducing the anatomic changes in the nervous system; by rendering apparent previously latent disease; and by acting as predisposing influences that favor the action of the exciting causes. It is possible that traumatism may not really play any part in the etiology, being perhaps in many instances an accident due to the vertigo and unsteadiness symptomatic of the already existing neruous disorder.

COMPARATIVE EFFECTS OF DIFFERENT ALCOHOLIC DRINKS ON MAN.

The investigations of Lancereaux concerning the changes taking place in the nervous system from the abuse of various alcoholic drinks are of much interest. The following are some of his conclusions regarding the effects of spirits, wine, beer, and absinthe: "In excessive use of alcoholic drinks of high percentage of alcohol, the tactile and thermal sensibilities do not seem to be greatly altered, while sensibility to pain seems exaggerated. In those who use absinthe and similar drinks to excess, the plantar reflexes are increased, light tickling causing movement, while slight stroking of the knees, legs, or abdomen causes pain severe enough to make the patient complain. Similar results, though less marked, are to be observed in the upper extremities. In wine drinkers this sensitiveness of the skin is much less in the lower extremities, above

there may be a zone of hyperæsthesia, while still higher normal skin sensation is the rule. Psychical symptoms in absinthe drinkers are stated to be fewer than is generally supposed, and, as is taught in the ordinary text-books, wine and alcohol drinkers are prone to attacks of acute delirium, while in those who drink alcoholic essences forms of dementia are more liable to follow."

News of the Week.

The Floating Hospital of St. John's Guild was struck by lightning on Friday last, and a baby was killed in its mother's arms. The same shock caused the premature birth of another child.

Obituary Notes. — Dr. Charles O. Baker, a prominent surgeon of Auburn, N. Y., died at his residence, July 16th, from cerebral hemorrhage. He was born near Auburn in 1852, and was graduated from the medical department of the Syracuse University in the class of 1873, practised general medicine in and about Auburn until 1890-91, when he visited Europe, taking a special course of operative surgery under Lawson Tait. After that he devoted himself almost exclusively to abdominal surgery. — Dr. William Thurman died at his home in this city last week, at the age of fifty-six years. He was a graduate of the College of Physicians and Surgeons in this city in 1864, and served later on the house staff of the New York Hospital. He was an active member of St. John's Guild, and had always been especially interested in the work of the floating hospital. He was also a school physician, having been appointed by the mayor about a year ago.—Dr. Louis F. Kiefer died in this city on July 23d, at the age of forty-five years. He was a graduate of the College of Physicians and Surgeons in 1886, and then served as interne in Roosevelt Hospital. He was prominent in masonic circles. —Dr. Delos A. Crane died at his home in Holland Patent, N. Y., on July 22d, at the age of seventy-six years. He was a graduate of Castleton (Vt.) Medical College in 1844.—Dr. William H. McNaughton, of Watervliet, N. Y., died on July 22d, at the age of thirty-four years, from pulmonary tuberculosis.

A Prize for the Discovery of the Bacillus of Yellow Fever.—It is announced that a bill has been introduced into the Brazilian legislature, offering a prize of $220,000, in two equal parts—one to the author of a work demonstrating the existence of the bacillus of yellow fever and the surest and readiest means of its recognition; and the other to the discoverer of an effective treatment of the disease. The decision upon the award shall be made by the Medical Institute of Rio Janeiro, the Hygienic Institute of Berlin, and the Pasteur Institute of Paris. A further provision of the bill authorizes the reservation of a sum of $110,000 for the founding of an establishment for the preparation of a curative serum, the discoverer of the same to be the organizing director of the institute. The first of these prizes will doubtless be awarded to Dr. Sanarelli, whose paper announcing the discovery was published in the Medical Record of last week, and it is most probable that the second will also fall to him. Such substantial rewards for medical discoveries are only too rare.

Reports of the State Board of Charities. — The State board of charities' report on the deaf has lately been issued, and from a perusal of it the facts are gathered that in the various schools in the State there are a total of 1,467 pupils, 817 of whom are males and 650 females. On the whole, these children seem to be well cared for both in mind and body, but the inspectors wish to call the attention of the managers of each institution to the differences in the tables containing the standing of their schools. According to the report of the committee on Craig Colony, it is in a satisfactory condition, and has, since its opening in January, 1896, made marked progress. In the case of the epileptics, open-air employment has been found to be very beneficial. Commissioner Bergen reports on Kings County Hospital in very unfavorable terms. He states that the overcrowding is excessive, the accommodation for nurses is defective, and the lighting is bad. He characterizes the institution as improperly equipped and ill constructed. Commissioner Marvin reports on the various institutions in the third judicial district, and says that he finds that those institutions under the management of sisterhoods and the hospitals in charge of trained nurses are more successful than those otherwise controlled. The report of the State commissioner on the poorhouses in the eighth judicial district is in most respects favorable. There were at the time the report was made 1,151 inmates in the eight poorhouses in the district. The commissioner passes severe strictures on the management of the Erie County poorhouse, but the seven other ones appear to be in a good condition. The report of the committee on the institutions in this State for idiots and feeble-minded states that all these establishments are under the best care and management. Many structural improvements are needed, however, at the State asylum in Rome, the dining-rooms in the basement being in a very unsanitary and uncomfortable condition.

The Chautauqua County Medical Society.—The annual meeting of this society was held at Chautauqua, N. Y., July 13, 1897, under the presidency of Dr. E. S. Rich. The annual election of officers resulted as follows: *President*, Dr. Morris N. Bemus, Jamestown, N. Y.; *Vice-President*, Dr. V. M. Griswold, Fredonia, N. Y.; *Secretary and Treasurer*, Dr. Charles A. Ellis, Sherman, N. Y.; *Censors*, Drs. T. D. Strong, Westfield, N. Y.; W. M. Bemus, Jamestown, N. Y.; J. Murphy, Sherman, N. Y. The president's address was "Notes on Puerperal Eclampsia." A large number of cases was reported. Dr. W. W. Hotchkiss, of Jamestown, N. Y., read a paper on "Tonsillitis." Dr. T. D. Strong, of Westfield, read one upon "Influenza." Dr. Lucien Howe, of Buffalo, presented a case of "Diphtheritic Membrane of the Eyelid," which had existed many months. At 8 P.M. Dr. R. R. Ross, superintendent of the Buffalo General Hospital, lectured upon

the *x*-rays, illustrating with the apparatus as he proceeded, taking a photograph of a fractured femur at the close.

The Hamburg Hospital.—Dr. H. Kümmell, surgical director of the New General Hospital (Neues Allgemeines Krankenhaus) of Hamburg, in the name of the local Hamburg committee and also in that of the general imperial committees of the Twelfth International Congress, invites those going through Hamburg on the way to Moscow to inspect the hospital, and particularly the new hygienic establishments in that city. The medical men will be at the hospital daily, from 10 A.M. to 2 P.M. Still they request that American visitors will kindly notify them, if possible, of the day of their visit.

Appendicitis and the Berry Crop.—The seed theory of appendicitis has become so widespread among the laity that it is said to have interfered very seriously with the sale of small fruits this season. The result is that the unsuperstitious and the "appendicized" are enjoying an abundance of the healthful berries, to the scandal of their timid neighbors.

The Independent Medical College, of Chicago, would appear to be an institution needing investigation by the postal authorities. It is advertising in the daily papers to make lawful physicians of those who pursue a "home course" of study.

The Prince of Wales' Hospital Fund. — The largest contributor to this fund was Mr. W. W. Astor, who has promised to give $5,000 annually, the next largest annual contribution being $1,250.

The Russian Red Cross Society, in return for the action of the New York society, has established two beds, one at St. Petersburg and the other at Odessa, for the care and comfort of patients from the United States navy.

A Grave Charge against a Surgeon.—The charge has been made that two Hindoo girls were assaulted at the Khana plague inspection camp by European officials. A surgeon, police sergeant, and a hospital attendant have been suspended for their alleged participation in the assaults, and the governor of Bengal has ordered an inquiry to be made concerning the charge.

A Monument to the Hunters.—At a recent meeting called in Glasgow, a committee was appointed to collect subscriptions for a monument to William and John Hunter. It is hoped to raise about $20,000 for this object.

Mortality among Foundlings in Italy. — The Roman correspondent of *The Lancet* called attention a short time ago to a foundling asylum in Naples, in which in the course of two years among eight hundred and fifty-six patients admitted only three had survived. Among other causes for this incredible mortality was the nursing of three or four infants by one wetnurse. An only less ghastly exhibit is made by the foundling hospitals of Venetia, the area of which is twenty-four thousand square kilometres, and the population nearly three million inhabitants, and which sends annually to the foundling hospitals a mean of one hundred and forty thousand infants, the vast majority of which are illegitimate. Among this number the mortality is fifty-two per cent., as a result primarily of want of nourishment, and secondly of neglect of every description. The administration of the several hospitals costs annually some $3,000,000, derived from the bequests of benefactors and the contributions of the provinces and communes.

Mississippi Valley Medical Association.—At the next meeting at Louisville, October 5, 6, 7, 8, 1897, the address on surgery will be delivered by Dr. J. B. Murphy, of Chicago, and that on medicine by Dr. John V. Shoemaker, of Philadelphia. Title of papers should be sent to Dr. H. W. Loeb, secretary, St. Louis, Mo.

The Italian Society of Internal Medicine will hold its eighth congress at Naples in October next, under the presidency of Dr. Guido Baccelli. In connection with the congress there will be an exhibition of hydrology and climatology, and of instruments and appliances used in medical practice.

Prosperous Ophthalmic Surgeons.—*The Lancet's* special commissioner on hospital abuse says that the leading ophthalmic consultants in London daily have to send away patients who pay the highest fees, simply because there is no time to see them all. This is probably the reason why the Queen sent to Germany for an oculist to examine her eyes, the London men being doubtless too busy to attend to her. The same writer says that no one in London will operate on a poor man for cataract for a fee of $50, unless he is moved thereto solely by a feeling of charity.

Grandmotherly Legislation in the United States.—An anticigarette bill has passed the lower house of the Tennessee legislature by a unanimous vote, and it is expected that it will also pass the senate. The bill prohibits absolutely the sale of cigarettes and of cigarette papers in the State. The law is to come into effect on May 1, 1897. If it be true that every people has the government which it deserves, the good folk of Tennessee would appear to be of those of whom it was said, "Blessed are the meek."—*British Medical Journal.*

A Monument to Duchenne of Boulogne.—On Sunday, June 27th, a monument was unveiled in the square of the General Infirmary of the Salpêtrière to the memory of the celebrated Duchenne, who was born at Boulogne in the year 1806, and is universally known by the title of Duchenne of Boulogne. M. Barthou, the minister of the interior, presided at the ceremony, and Professor Joffroy, physician to the Asylum of St. Anne and president of the memorial committee, pronounced a eulogium on Duchenne. He recalled the two great names of Trousseau and Charcot—of Trousseau, who made generally known the work of Duchenne with regard to locomotor ataxia; and of Charcot, who was, he said, the great worker in the science

of modern neuro-pathology and one who had rendered the greatest possible service to the study of affections of the nervous system. On the pedestal of the monument is the following simple inscription: "1806–1875. To Duchenne of Boulogne. Localized electrization; Physiology of movement; Neuro-pathology." Professor Raymond, physician to the Salpêtrière, charged himself in his official capacity with the duty of demonstrating in their midst the innumerable labors of Duchenne. Dr. Lerboullet, of the Academy of Medicine, read a paper by Professor Mathias-Duval upon the works of Duchenne, and after an address by Dr. Motet, of the Academy of Medicine, who spoke in the name of the Medical Society of Paris, M. Barthou concluded the series of speeches. In the most brilliant fashion the minister of the interior tendered his respectful homage "to the marvellous unity and modesty of the great savant to whom they that day, perhaps somewhat tardily, were giving his well-deserved tribute of glory." A point to which the minister did not refer at this official ceremony, at which the faculty and a host of medical officeholders were present, was that Duchenne never at any time was either a professor or a hospital physician. He worked all alone, going round the wards every morning examining and questioning the sick himself, and was looked upon as a madman by all the officials. Only by the worth of his works, and that at a long time after his death, has he attained his right position, for during his life he met with nothing but scorn from the official scientific world.—*The Lancet.*

International Conference on Railway and Steamship Hygiene.—The second international congress of "les services sanitaires et l'hygiène des chemins de fer et de la navigation" will be held in Brussels, on September 6, 7, and 8, 1897. Those desiring to take part in the congress are requested to send name and titles, with address and five francs, to Monsieur le Docteur J. de Lantsheere, Rue de l'Association, 56 Bruxelles, Belgium.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending July 24, 1897. July 20th.—Passed Assistant Surgeon L. W. Spratling detached from naval hospital, Norfolk, and ordered to naval hospital, Philadelphia, July 19th; Passed Assistant Surgeon R. M. Kennedy detached from naval hospital, Philadelphia, July 19th, and ordered to naval hospital, Norfolk; Assistant Surgeon J. C. Pryor detached from naval laboratory, New York, and ordered to the naval hospital, Mare Island, Cal.; Assistant Surgeon W. M. Wheeler detached from naval hospital, Mare Island, and ordered to the *Oregon;* Assistant Surgeon A. Farenholt detached from the *Oregon,* ordered to Washington with insane patient, then to the *Vermont;* Assistant Surgeon C. E. Riggs detached from the *Vermont* and ordered to the New York navyyard. July 22d.—Medical Inspector A. F. Price detached from the New York navyyard, July 14th, and ordered to the *Olympia* as fleet surgeon; Medical Inspector J. A. Hawke ordered to the New York navyyard, August 14th; Medical Inspector J. G. Ayers detached from the *Olympia* as fleet surgeon, ordered home, and granted two months' leave. July 23d.—Surgeon H. E. Ames detached from the *Cincinnati,* July 25th, and ordered to the naval hospital, Yokohama, per steamer August 14th; Surgeon J. C. Byrnes detached from the Norfolk navyyard and ordered to the *Cincinnati,* July 25th; Surgeon P. Fitzsimons detached from naval hospital, Yokohama, on relief, ordered home, and placed on waiting orders.

Dr. Donald McLean, of San Francisco, dean of the California Medical College, was shot on Friday last by a discharged employee of the college, and was dangerously wounded. His assailant killed himself when about to be apprehended by the police.

Don Juan Creuz y Manso, of Madrid, one of the most progressive and best known of Spanish surgeons, has recently died. He was the translator of the greater part of the Spanish edition of Ashhurst's "Encyclopedia of Surgery." He was the first surgeon in Spain to advocate and practise antiseptic surgery, and was also the first in that country to perform a successful ovariotomy.

Disease in India.—Reports from Bombay state that there has been an alarming increase in the number of deaths from cholera in the presidency since the middle of July, and that there has also been a slight increase in the number of cases of the plague, which had been regarded as practically extinct. The natives of India seem to be awakening to the need of greater efforts to eradicate the endemic diseases of the country, and the viceroy has announced that native chiefs of India have undertaken to found an institution for the scientific investigation of Indian diseases in commemoration of the jubilee.

Bellevue Hospital Medical College.—Dr. E. G. Janeway has been elected president of the faculty of Bellevue College, to fill the vacancy occasioned by the death of Dr. William T. Lusk.

Foreign Medical Practitioners in Italy.—Dr. Santini, a member of the Italian chamber of deputies, the author of the attempt to drive all foreign physicians out of Italy, occupies his time chiefly in inquiring of the government how soon the foreigners are to be forced to give up attending to their sick compatriots. The last time he interpellated the government, early this month, the representative of the latter replied that medical practitioners of non-Italian nationality would be allowed to practise among Italians in Italy if Italian medical men had the same privilege conceded them by the other nationalities in question. The sanitary laws, still in force, allow foreign medical men to practise among their compatriots resident in Italy if they do not extend their *clientèle* to Italians. The abuse of this privilege will be carefully guarded against in the future, as it has been in the past, but the Italian government is probably too wise to risk driving away many rich and money-spending tourists in an attempt to throw a few patients in the way of Dr. Santini and his fellow-practitioners.

Reviews and Notices.

NEURAL TERMS, INTERNATIONAL AND NATIONAL. By BURT G. WILDER, M.D., Professor of Neurology, etc., in Cornell University. Reprinted from the *Journal of Comparative Neurology*, VI., December, 1896.

ALTHOUGH by no means prepared to accept *in toto* the principles of Dr. Wilder's nomenclature or its application, nevertheless we heartily recommend this opuscle to our readers, neurologists and general practitioners alike. The careful painstaking labor, the comprehensive knowledge of his subject, we may even say the manly fashion in which the author receives the contumely and attempt at ridicule of those whose position in the scientific world makes such conduct particularly unfitting—all command our admiration. That Dr. Wilder is continually receiving converts to his mode of nomenclature is shown by the fact that Van Gehuchten, in the recent edition of his work on the anatomy of the nervous system, adopts it in many important respects.

DISEASES OF THE EYE AND OPHTHALMOSCOPY. A Handbook for Physicians and Students. By DR. A. EUGEN FICK, University of Zurich. Translated by ALBERT B. HALE, A.B., M.D., one of the Ophthalmic Surgeons to the United Hebrew Charities; Consulting Ophthalmic Surgeon to Charity Hospital, Chicago, etc. With a Glossary and 158 Illustrations, many of which are printed in colors. Philadelphia: P. Blakiston, Son & Co. 1896.

THIS work forms a volume of four hundred and eighty-eight pages, is of convenient size, well printed, beautifully and quite fully illustrated. The author may be congratulated on having secured such an admirable translation of his work; all the points of the original are retained and are expressed in excellent English, free from the Germanisms so frequently met with in translations from that language. The plane of the work is high, and it will be read most understandingly by students and practitioners who have already obtained some knowledge of physiological optics and clinical ophthalmology.

The part devoted to the discussion of external diseases is undoubtedly the weakest in a very strong whole. Omission of the discussion of some of the rarer diseases, as molluscum and actinomycosis, and failure to mention the pneumococcus as a cause of one form of acute conjunctivitis, are noted. One is surprised to find the following: "There is no doubt that infection with the gonococcus of Neisser and with the diphtheria bacillus of Klebs-Loeffler can produce a conjunctival diphtheria." The omission to mention the method of "expression" in the surgical treatment of trachoma, the suggestion to use hot compresses of camomile tea in the treatment of corneal ulcer, and the statement that keratitis striata is probably due to wrinkles in the cornea, do not comport with a work supposed to be up to date.

Honest criticism of the work would compel the statement that there is little that is new in its pages; indeed some of the text bears marks of antiquity, as the description of the pathology of retinitis albuminurica; however, these are minor faults and few. The work as a whole is well written and evidences a wide knowledge of ophthalmology on the part of the author and of the translator. The parts relating to physiological optics are excellent.

A NEW CLASSIFICATION OF THE MOTOR ANOMALIES OF THE EYE, BASED UPON PHYSIOLOGICAL PRINCIPLES, TOGETHER WITH THEIR SYMPTOMS, DIAGNOSIS, AND TREATMENT. The Prize Essay of the Alumni Association of the College of Physicians and Surgeons, New York, for 1896. By ALEXANDER DUANE, M.D., Assistant Surgeon, Ophthalmic and Aural Institute, New York. New York: J. H. Vail & Co. 1897.

THE care in preparation, exactness in statement, and beauty of expression which have always characterized the writings of this author are not wanting in this brochure of one hundred pages. The careful study of the action of the extrinsic muscles of the eye, extending over a long period of time, is presented in a carefully digested, impartial statement of the conditions met with, given in the light of a full knowledge of the work of others in physiological optics and in the normal and abnormal dynamics of the eye. A complete analysis of the movements of the eye, as produced by the individual and combined action of the eye muscles, is given, and this is followed by a very ingenious diagram illustrating these movements in a graphic manner. The discussion is sufficiently comprehensive to present a clear exposition of the subject; it is direct and free from verbosity. The laws given for the determination of feeble and paretic muscles, the discussion of the anomalies of individual muscles and the statements regarding contractures subsequent to insufficiences of opposing muscles, paretic or otherwise, are all excellent.

Although the classification advocated is somewhat cumbersome, it is based on facts, and the terms employed are accurate and clearly descriptive of the conditions to which they are applied. There is little to criticise and much to commend in this work. It should be read by all who are interested in the subject of the anomalies of the muscles of the eye.

INJURIES AND DISEASES OF THE EAR. Being reprints of papers on Otology. By MACLEOD YEARSLEY, F.R.C.S., Fellow of the British Laryngological, Rhinological, and Otological Association; Surgeon in Charge of the Department for Diseases of the Throat, Nose, and Ear, The Farrington Dispensary, etc. London: The Rebman Publishing Company, Limited, 1897.

AS stated in the preface, the papers have appeared before in various journals and have been collected together to form this little volume. There are six papers, making a volume of forty pages. The work is of value to the general practitioner, as it contains many precepts relating to the most common pathological conditions met with, in a readily accessible form. To the aurist there is little of interest except the last article, which treats of aural reflexes. There are no illustrations.

RETINOSCOPY (Or Shadow Test). In the Determination of Refraction at One Metre Distance, with the Plane Mirror. By JAMES THORINGTON, M.D., Adjunct Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine. Twenty-four Illustrations. Philadelphia: P. Blakiston, Son & Co. 1897.

THIS little volume of sixty-three pages is intended for the use of undergraduates in medicine and for those taking postgraduate studies. It is an extremely elementary exposition of retinoscopy, good so far as it goes, with the exception, perhaps, of some theories regarding the oblique position of the lens in certain cases, which are irrelevant and possibly not correct. A practical knowledge of retinoscopy may be gained by the perusal of the work. The pages are well illustrated.

CLINICAL LECTURES ON MENTAL DISEASES. By THOMAS S. CLOUSTON, M.D., F.R.C.P.E., Lecturer on Mental Diseases in the University of Edinburgh. Fourth Edition, Thoroughly Revised.

CLOUSTON'S treatise on mental diseases, although not the most scientific of British treatises on insanity, is unquestionably the most satisfactory to students and to physicians, and in every instance a safe, reliable guide in the handling of the diseases to which it is devoted. One rises from reading a chapter or a section with the fullest conviction that he has been listening to a man experienced in the practice, learned in the theory, and versed in the literature of his subject. The more the volume is studied the more convinced does the reader become of this fact. The book has its serious faults, from the viewpoint of the American psychiatrist, but some of these it shares with all other Anglican text-books on the same subject. The subject of paranoia is discussed in two pages. This, of course, is a decided gain, in what we venture to believe is the right direction, over complete ignoring of the subject, the rule in text-books on insanity by British "medical men." Nevertheless, it may be truthfully said the handling of the subject in the present edition scarcely inspires us with feelings of gratitude. We are not prepared to admit that "No paranoiac loves his wife, or his brethren, or his friends in the right and normal way." The question of love is at best wholly a personal, individualistic possession, and it occurs to us that we have encountered more than one paranoiac, naturally not of the type "paranoia sexualis," who has loved his wife in a way to meet the approval of the latter. In referring to King Louis II. of Bavaria, Clouston says: "In him there appeared to have been sexual perversion of the most

abominable description. In this country we rarely see such cases as are described in such repulsive detail by Krafft-Ebing and Schrenck-Notzing, and I think it is better we should not look too closely for them." Better said: "This country furnishes the daily press, yearly or oftener, the most abominable and sickening details of such perversion in people of all grades of notoriety up to royalty, who, for the weal of the community, have to be sent to prison or to a modern Van Diemen's land." It would be better by far for the good of humanity if they were looked for closely, instead of pushing the head far enough into the sand to obscure vision.

We have quoted the designation "medical men" above, having in mind Clouston's XIX. Chapter "Medico-Legal and Medico-Social Duties of Medical Men, etc." Considering that a respectable minority of the asylum physicians in this country are not men, may we not reasonably ask the author to substitute the word "physician" in future editions, at least for the American edition? We can assure him that the "medical men" will not feel aggrieved and the medical women will be touched by his tacit recognition of their existence.

TWENTIETH CENTURY PRACTICE. An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume X.: DISEASES OF THE NERVOUS SYSTEM. New York: William Wood and Company. 1897.

THE contributors to the volume on nervous diseases of this series are few and with one exception all are American practitioners.

The fifteen-page index would indicate that the field has been well covered. The chapters are upon diseases of the brain, intracranial hemorrhage, tumors of the brain, diseases of the meninges, hysteria, epilepsy, spasmodic neuroses, neurasthenia, disorders of speech, and disorders of sleep. All of these authors write well and their productions make rather more fluent reading than some of the translations from foreign authorities. The two contributions from the pen of Charles Féré on hysteria and epilepsy have, however, been marred by no literal rendering of idioms, the translation preserving all original fluency of the French. The first two hundred and sixty pages are covered by contributions from Joseph Collins, of New York. The various subjects show evidences of painstaking care in their preparation. Following this, Charles L. Dana has an extremely well written and practical article on apoplectic conditions, followed by "Tumors of the Brain" from the pen of Bernard Sachs, also of New York, who has treated the subject in a masterly way. Howell Pershing, of Denver, has presented a chapter on the difficult subject of disorders of speech, covering the ground in a creditable manner. Sanger Brown, of Chicago, follows with "The Disorders of Sleep," the chief of which here treated of being insomnia, somnambulism, and nightmare. Dana has also contributed the chapter on neurasthenia, which is short and to the point. The spasmodic neuroses, including chorea and the various tics, are well described by Dr. Féré.

The volume is a worthy and valuable addition to this masterly series.

THE DISEASES OF THE STOMACH. By DR. C. A. EWALD. Translated and Edited by MORRIS MANGES, M.D. Second Revised Edition. New York: D. Appleton & Co. 1897.

THIS excellent book, which is so well and favorably known, has received many additions from the author as well as from the translator. Full mention is made of the newer literature of gastric pathology. Several new drawings have been added, thus the gastrodiaphane of Einhorn, the re-current stomach tube of Hemmeter, and a few drawings from Osler illustrating dilatation of the stomach. There is no doubt this book will be read and studied by the American profession with the greatest interest and much profit.

EXPERIMENTELLE UNTERSUCHUNGEN ÜBER DIE WIRKUNG RASCHER VERÄNDERUNGEN DES LUFTDRUCKES AUF DEN ORGANISMUS. Von DRS. RICHARD HELLER, WILHELM MAGER, HERMANN VON SCHROETTER in Wien. Bonn. 1897.

THE writers of this work arrive at the following conclusions:

The blood of the organism is not subjected to any mechanical changes under the influence of compressed air.

After a rapid liberation from the compression, free gas may be shown to exist in the blood-vessels. This gas consists principally of nitrogen.

If the stay in compressed air is a prolonged one and the liberation from it quite rapid, pathological changes arise which act either upon the function of the heart and lungs and may lead to death, or upon the nervous system.

All these pathological changes are caused by the presence of free gas in the blood-vessels, and may be partly subdued by the judicious application of compressed air.

PRACTICAL PATHOLOGY FOR STUDENTS AND PHYSICIANS. By ALDRED SCOTT WARTHIN, PH.D., M.D. Ann Arbor: George Wahr. 1897.

THIS work may be considered as an excellent guide for the student and practitioner in all laboratory and dissecting methods, giving them as practically as possible, but yet thoroughly and completely. With regard to the differential diagnosis of tumors, we cite the following from page 100:

"For the differential diagnosis of sarcoma or carcinoma in the gross specimen, the following points are to be taken into consideration: Sarcomata possess, as a rule, a smooth homogeneous surface, from which no cloudy juice rich in cells can be scraped. An uneven, granulated cut surface, in which a stroma of connective tissue may be made out, containing cell masses which are easily scraped away with the knife as 'cancer juice,' speaks for carcinoma. Yet for alveolar sarcoma this distinction cannot be made, its cut surface resembling in all points that of carcinoma. Squamous-cell carcinoma gives a dry cut surface, from which the grayish cell masses may be squeezed out like comedones."

CLINICAL LESSONS ON NERVOUS DISEASES. By S. WEIR MITCHELL, M.D. Philadelphia and New York: Lea Bros. & Co. 1897.

THIS little volume, from the pen of the "chief ornament of the medical profession in the States," as the University of Edinburgh styled him on the occasion of his enrolment among her favored few as the recipient of honorary degrees, will undoubtedly find a large and appreciative circle of readers both at home and abroad. There are in it that epitomization of years of bedside experience, that evidence of clinical insight, that fund and wealth of resourcefulness in the treatment of obstinate nervous diseases—as evidenced, for instance, in the chapter on sciatica—which convince that it is a book to be studied, to be assimilated.

It is commonplace to mention Dr. Mitchell's literary style, but there are choice bits in this volume that the talented author does not often surpass in his medical writings. To select one sentence taken from the chapter "Some Disorders of Sleep":

"In the borderland of coming slumber, when we are not yet overwhelmed by its full power, the steadying contradictions of the external world are, in a measure, by degrees cut off, while the will holds a slowly lessening rule."

The physician who strives for the caresses of fame, from a literary standpoint, be he neurologist, gynæcologist, or professor in a medical college, may see in these delightful and most instructive Lessons an unerring signpost. Devoid of the intricacies with which even attempt at completeness causes the customary treatise on nervous diseases to be beset, this collection of seventeen lessons must be a welcome accession to the readable books of every medical practitioner.

Dr. Mitchell's graciousness in preface and text to his physician assistants is a noteworthy, a gratifying, and a commendable feature.

MANUAL OF STATIC ELECTRICITY IN *X*-RAY AND THERAPEUTIC USES. By S. H. MONELL, M.D. New York: William Beverley Harison. 1897.

THIS interesting book contains over six hundred pages devoted to the value of the static current. Beginning with a description of the mechanism and *modus operandi* of the instrument, the author treats of the various ways of applying the currents, and gives valuable points for the correction of various errors in the management of the same. An elaborate series of chapters on the treatment of various disorders, such as "Neuralgias" and "Rheumatism," "Hysteria," "Headaches," "Locomotor Ataxia," etc., follow. It is almost incredible to find that the author recommends the static current for the treatment of gastro-intestinal disorders in infants; in fact, he describes two cases of infants, one a child

seven weeks old, in which he used the current with excellent results. This was for the relief of diarrhœa, but he says that he changed the diet and gave some internal medication besides the static current. The subject of *x*-ray photography is given in an excellent manner. This is the best part of the book. To those desiring information on this branch, the author gives his views in a clear and masterly manner. He has had abundant experience here and the work is to be commended for its treatment of this interesting subject.

DEATH AND SUDDEN DEATH. By P. BROUARDEL, Professor of Medical Jurisprudence, Dean of the Faculty of Medicine, Paris. Translated by F. LUCAS BENHAM, M.D., B.S. Lond. New York: William Wood and Company. 1897.

WITH a striking title and still more striking contents, this book is destined to command wide attention and extensive reading. Its inherent conception is novel and its adaptability to practical needs is everything that could be desired. There is in reality no work with which we are acquainted that so effectually covers the ground as does this one. There are, in fact, so many interesting and important facts mentioned in it which can be found nowhere else in such a convenient compass that the little book has an intrinsic value. It represents a course of lectures on forensic medicine delivered by Brouardel and admirably translated by the English editor. In part I., under the signs of death, the author treats of the moment of death, of the uncertainty of some of the signs of death, and of the absolute proofs of the actual occurrence of death. The dangers of premature burial in cases of apparent death are fully set forth. It is comforting to such as may have exaggerated notions of the frequency of premature burials to know that the chances of such mishaps are reduced to the minimum, in fact are made impossible when the death is scientifically established. In estimating the relative value of the signs, that of cessation of heart beat ranks first, although the reader will be surprised to learn that cardiac action can be excited after a cessation of three hours in the stillborn. The reference to several illustrative cases of apparent death for hours and final resuscitation makes very interesting and instructive reading. The phenomena of decomposition are very graphically presented and many instances are related in which the cadaveric ptomains have in medico-legal cases been mistaken for ingested poisons. Part II. treats of the causes of sudden death as centred in the different vital apparatus, and many instructive instances are related of some curious forms of sudden death, the occurrence of which would not have been suspected without post-mortem examination. The concluding section is on sudden death in children, which forms a distinctive feature in a work which is instructive and interesting from beginning to end. We venture to say that no physician can read it without profit or consult it without benefit.

CONTRIBUTIONS TO THE PHYSIOLOGY AND PATHOLOGY OF THE NERVOUS SYSTEM. By ISAAC OTT, M.D.

THIS little brochure contains essays on the thermogenic centre in the tuber cinereum; effect of section of the vagi upon temperature, heat production, and heat dissipation; notes on the animal extracts; the rhythmic action of the bladder, effect of certain drugs upon it—the original publication of which materially helped to establish the writer's reputation as a physiologist.

ILLUSTRATED SKIN DISEASES. An Atlas and Text-book. By WILLIAM S. GOTTHEIL, M.D. New York: E. B. Treat, 1897.

PART IV. treats of the acute "exanthemata, morbilli, rubeola, scarlatina," etc. These are treated only from the point of view of the skin eruptions that characterize them. Varicella and variola are illustrated from typical and well-marked cases. The picture of vaccinia rash, on page 91, calls attention to a fairly common but little noticed general eruption. The same part and the next one contain the section on favus and ringworm, and are appropriately illustrated. Figs. 49 and 51 are especially good, representing ringworm and pitiriasis rosea. Part V. deals also with the parasitic skin diseases of animal origin and we note in them some excellent micro-photographs. The large section of eczema concludes Part V., and fills the first pages of Part VI. This important subject is represented in a number of photographs representing all its various stages and forms. Pemphigus, impetigo, and exfoliative dermatitis occupy the remainder of this part, the concluding pages being devoted to psoriasis. The color plates represent ichthyosis, keratosis, and zoster. It is interesting to note that almost every picture is from an original photograph. The parts are filled with practical information, and give very valuable prescriptions for the management of the various disorders treated. These three parts show an expenditure of great labor, and the author is certainly to be complimented on the successful result. The type is very clear, and the illustrations are large and distinct. In connection with this work we may say that it is a matter of wonder to us where the publishers of the numerous atlases of skin diseases issued the past few years can find profit. Hardly is one completed than another is begun. There are too many books published.

FIRST AID IN ILLNESS AND INJURY. By JAMES PITCHER, M.D., PH.D., Captain in the Medical Department of the United States Army. New York: Charles Scribner's Sons. 1897.

THIS work is probably the best of its kind ever brought out. The subject matter is set forth in clear and intelligible language, and the use of technical terms is avoided as much as possible. The illustrations are copious and good, and altogether the work is one that will prove useful in any household.

DISEASES OF THE EAR, NOSE, AND THROAT, AND THEIR ACCESSORY CAVITIES. A Condensed Text-book. By SETH SCOTT BISHOP, M.D., LL.D., Professor in the Chicago Post-Graduate Medical School and Hospital, Surgeon to the Illinois Charitable Eye and Ear Infirmary. Philadelphia and New York: The F. A. Davis Co.

THIS work, which is comprised in four hundred and ninety-six pages, is excellently printed and fully illustrated. It is designed to be of use to a large number of medical men, the student, the practitioner, and the specialist in his early studies. The author has endeavored to bring the work fully up to date, and much prominence is given to the consideration of recent advances in the knowledge of diphtheria and serum therapy, also to descriptions of recent surgical appliances. The first chapter is devoted to a statistical study of twenty-one thousand cases of diseases of the ear, nose, and throat. The descriptions of the conditions met with are characteristic of the author, clear and not too full. The specific definite manner in which the forms of treatment advocated are given makes the information valuable to the student and practitioner, and the number of methods and remedies mentioned is not sufficiently large to be confusing. The statement regarding the introduction of sprays and medicated vapors into the ear by means of tubes that do not enter the nasal cavities beyond the anterior nares would with the hypercritical raise the question as to what becomes of the residual air, and suggests an undue strain on the law of the diffusion of gases. A number of extravagant expressions are found. The style in parts might, perhaps, be criticised. Facetious phrases are sometimes met with. These features serve to illustrate the well-known personal peculiarities of the author, but they do not detract from the value of the information given.

INEBRIETY, ITS SOURCE, PREVENTION, AND CURE. By CHARLES FOLLEN PALMER. Fleming H. Revell Company. 1897.

IN this small volume the author, in a clear, easy style, discusses what he calls the nervous-mental organization in its causal relation to inebriety and allied manifestations of an abnormal nervous system, and draws the following conclusions: "Alcoholic inebriety is often based upon and dependent on diseased conditions which demand proper medical or hygienic treatment for their removal. The inebriate is a diseased person, and the disease has either preceded the inebriety or is dependent upon it." He believes in the possibility of altering the constitutional temperament by suitable training of the affected individual, preferably from earliest youth. This is to be accomplished by the choice of such physical, mental, and moral hygiene and exercise as tend to make a hardy, vigorous organism, and especially by the rigorous and systematic strengthening of the moral will power and self-control. He deems absolute abstinence from all

stimulants and narcotics an essential to the prevention or cure of inebriety in the disease type of individual under discussion. The author will probably be deemed oversanguine as to the results obtainable in the majority of cases, but his book contains many helpful suggestions for the treatment of neurotics in general, as well as those who are predisposed to alcoholism.

HYSTERIA AND CERTAIN ALLIED CONDITIONS. Their Nature and Treatment, with special Reference to the Application of the Rest Cure, Massage, Electro-therapy, Hypnotism, etc. By GEORGE J. PRESTON, M.D., Professor of Diseases of the Nervous System, College of Physicians and Surgeons, Baltimore; Visiting Physician to the City Hospital, etc. Illustrated. Pp. 298. Philadelphia: P. Blakiston, Son & Co. 1897.

THIS is an exceedingly attractive little book, and, although it may not contain much that is new to the specialist, is a valuable contribution to the voluminous literature of a familiar subject. It will be especially useful to the general practitioner, for whom, indeed, it is intended. The introductory historical chapter is quite interesting. The next two on etiology and pathology, and on symptomatology, are admirably clear and succinct. Chapters IV. to VIII. (inclusive) deal with motor disturbances, convulsive attacks, mental conditions, and visceral and vasomotor disturbances, and are well illustrated by plates and diagrams from Richer, Charcot, and de la Tourette. Three chapters are devoted to treatment, in which the advantages of massage, electro-therapy, and the rest cure are thoroughly discussed. Hypnotism receives due attention. With a concluding section on the surgical treatment of hysteria we are heartily in sympathy, especially the final sentence, viz.: "The rule, then, that should be adopted is that operations should not be performed on hysterical women for the relief of the nervous symptoms, unless some distinct disease of the reproductive organs can be detected."

LECTURES ON THE TREATMENT OF FIBROID TUMORS OF THE UTERUS, MEDICAL, ELECTRICAL, AND SURGICAL. By FRANKLIN H. MARTIN, M.D., Professor of Gynæcology, Post-Graduate Medical School of Chicago, etc. Pp. 174. Chicago: The W. T. Keener Company. 1897.

THIS little monograph includes a series of ten lectures, which present an excellent *résumé* of the most recent views on the subject of the treatment of this class of tumors. The first five chapters (sixty-five pages) are devoted to anatomy, pathology, and non-surgical treatment; the last five to descriptions of various operations, especially hysterectomy. The latter are excellent, and are well illustrated. Chapter VII. deals with the author's operation of ligating the uterine arteries, which he may be pardoned for making rather longer than its importance would seem to warrant in comparison with other more radical procedures. The style is clear and pleasing, and the little book will well repay a careful reading, especially by the general practitioner.

ORGAN DISEASES OF WOMEN, NOTABLY ENLARGEMENTS AND DISPLACEMENTS OF THE UTERUS AND STERILITY, CONSIDERED AS CURABLE BY MEDICINES. By J. COMPTON BURNETT, M.D. Pp. 156. Philadelphia: Boericke & Tafel. 1897.

IF it were not for the fact that our homœopathic friend takes himself so seriously, we should be inclined at first sight to regard this little book, like its title, as a medical joke. But the author is certainly an original character, as shown by his epigrammatic style and decided opinions. He sets his face firmly against Malthusian doctrines, and records triumphantly at the conclusion of most of his cases that "a bonnie boy" was the result of his purely medicinal treatment. It is difficult to pass judgment on views from which we differ so essentially, but even from a purely common-sense standpoint one is forced to conclude that the writer "doth profess too much."

ATLAS UND GRUNDRISS DER LEHRE VOM GEBURTSAKT UND DER OPERATIVEN GEBURTSHILFE. Von DR. OSKAR SCHAEFFER, Privatdocent an der Universitat Heidelberg. IV. Auflage. München: Verlag von J. F. Lehmann.

THE fourth edition of this well-known work has been thoroughly revised, and many additions have been made, especially in the section devoted to operative obstetrics. We note a new page on symphyseotomy, though it is to be regretted that there are no accompanying illustrations. The same comment applies to the new subject matter on *accouchement forcé*, a procedure which has assumed considerable prominence of late.

Of course the most valuable part of the book is the pictorial. The plates have been of the greatest assistance to generations of medical students and practitioners, and will not easily be superseded. The graphic representation of the more common obstetric operations (forceps and version) are beyond criticism. We are happy to add that through the enterprise of William Wood and Company this work, as well as the companion, "Essentials of Gynæcology," have been made familiar to non-German readers.

ATLAS AND ESSENTIALS OF GYNÆCOLOGY. By DR. OSCAR SCHAEFFER, Privatdocent in Obstetrics and Gynæcology at the University of Heidelberg. With 173 Colored Plate Illustrations and 54 Woodcuts. Pp. 288. New York: William Wood and Company. 1897.

TO say that the publishers of this translation of Schaeffer's work have improved on the original in their colored reproduction of the plates is sufficient commendation. When we add that the terse condensed style of the author has been closely followed without the sacrifice of good English, we have said enough to convince those familiar with the latest German edition that American students have now within their reach a most valuable aid in their practical work in gynæcology. Though praise of separate plates would be invidious, we are especially pleased with those representing the various forms of malignant disease of the portio and uterine displacements. The plate facing page 20, and those showing different varieties of fibroids, are also worthy of commendation.

The work of the translator is certainly deserving of praise. The reversal of the original order (the text being first in the German), and the tables of contents and of illustrations, are decided improvements. The type, binding, and *tout ensemble* of the American edition are unusually pleasing to the eye.

SYRINGOMYELIA: The Alvarenga Prize Essay of the College of Physicians of Philadelphia for 1895. By GUY HINSDALE, M.D. Philadelphia: P. Blakiston, Son & Co. 1897.

THIS essay has already appeared in the columns of the *International Medical Magazine*. It is now republished with some slight additions, a dedication, and an appendix.

Dr. Hinsdale treats his subject historically, as becomes a prize essay, and then considers the causation, symptoms, outcome, etc.; but it cannot be said that he has done so exhaustively. Although there is a very lengthy bibliographical appendix, the text does not convince one that the wealth of material indicated by this appendix has been carefully and comprehensively digested. The discussion of the pathogenesis of syringomyelia, its development, and even its morbid anatomy are by no means what they should be in a prize essay, particularly when it is borne in mind that the author has made no contribution to the subject save two very brief clinical histories. Although the monograph bears many evidences of haste and loose construction, in a general way it gives a fairly good *résumé* of the subject, and for those not familiar with German literature it may be recommended as the most lengthy exposition of the subject in English.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY. Being a Yearly Digest of Scientific Progress and Authoritative Opinion, drawn from Journals, Monographs, and Text-Books of the Leading American and Foreign Authors and Investigators, under the General Editorial Charge of GEORGE M. GOULD, M.D. Philadelphia: W. B. Saunders, 1897.

THIS year-book, like several others of a similar kind, essays to solve the extremely hard problem of how to present a sufficient and critical digest of contributions to every branch of medico-surgical literature that have been published during the preceding year. The endeavor to cover the whole range of medical science within the limits of one volume, however bulky, presents in many ways almost insuperable obstacles. So far as the particular book under notice goes, it is well compiled, but its scope of usefulness and that of all year-books is necessarily a restricted one. This boiling-down, so to speak, of the medical work of an entire year is attended

with many drawbacks. To epitomize properly the medical and surgical writings of so long a period is nearly impossible. Dr. Gould's year-book is probably as successful an attempt as has been made in this direction. To criticise the book in detail would be to attempt a task beyond the powers of any one individual, so that no decided opinion can be given as to whether the subjects dealt with have been judiciously selected or appropriately touched upon. Judging from a somewhat cursory perusal, the chosen portions appear to provide as nourishing literary food as can be expected.

A few changes have been made in the names of those in charge of some of the departments, but on the whole the editorial staff remains the same as that of the issue of last year. It is our judgment that the days of usefulness of all "year books" are past, and that their continued arrival is in the nature of "pot boilers," by both editors and publishers. No wideawake physician needs books of this sort, for he keeps himself better informed by means of his weekly journals.

APHASIA: The Cerebral Speech Mechanism. By WILLIAM ELDER, M.D., F.R.C.P. London: H. K. Lewis. 1897.

THE writer of this treatise is known to the readers of medical literature from a remarkable contribution which he made to the subject of aphasia, published in the Edinburgh Hospital Reports a short time ago. The greater part of the present volume is the author's thesis for the M.D. degree of the Edinburgh University.

The author shows his familiarity with modern literature, especially that of the school of Déjerine, from the writings of which he has evidently got much inspiration. The burning questions in the subject of aphasia to-day are, first: Is there such a territory as the speech area? second, If there be, are there four definite centres, one for articulate speech and one for written speech, constituting the motor side of language, and an auditory and visual centre constituting the sensory, receptive side of language? It is well known that this was the conception of Charcot and the great majority of writers since the former gave it to the medical world. During the past decade, however, there has developed a school, headed by Déjerine, which refuses to follow Charcot's dictum in the face of absolutely contradictory evidence, and deny the existence of a graphic motor centre, while affirming the existence of one receptive speech area, injury of which in any part will invariably entail some disorganization of internal language. After reading Elder's chapter on agraphia and the question of the existence of a graphic centre, it seems to us that he denies such existence; yet when we turn to page 55 we find that such a centre is beautifully delineated in colors occupying the area to which Exner, in one of the most unscientific contributions ever made to medicine, allotted it, and on which Charcot based his teaching of the existence of this centre, and which Bar thought he corroborated by the publication of his case.

Space prevents us from an analysis of this very interesting book of Elder. Its most serious fault seems to us a deficiency in the critical faculty and evidences of too close study of Wyllie's recent work, which we regret to say we cannot believe is "the most accurate and comprehensive account of the whole subject that has yet been published," as it appears to Elder. Those who are familiar with the subject of aphasia will have much pleasure and profit in the perusal of the book before us, while those who are not familiar with the subject will get some of both.

Diagnosis of Small Ovarian Tumors.—Dr. Davenport (*Boston Medical and Surgical Journal*, 1896, No. 15) concludes his article with the following propositions: 1. Small intrapelvic growths give rise to marked symptoms. 2. Pain is usually noted, but does not bear a constant relation to the location or kind of tumor. 3. Menorrhagia or metrorrhagia is frequently present, especially in cases of cystic ovaries adherent to the uterus. 4. When uterine hemorrhage exists in connection with an intrapelvic tumor, and is not affected by intra-uterine treatment (curettage or electricity), the tumor is probably ovarian rather than uterine. Reflex symptoms are rare with small tumors, at least in the earlier stage of their development.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON GENERAL SURGERY

Stated Meeting, May 10, 1897.

W. W. VAN ARSDALE, M.D., CHAIRMAN.

Stab Wound of Abdomen; Perforation of Intestine; Suture; Recovery.—DR. P. R. BOLTON, in presenting the patient, said that one point which the case illustrated was the usefulness of salt solution on the peritoneum. The patient was a man of twenty-six, who had been brought to the Hudson Street Hospital last September, very soon after having received a stab of the abdomen. There were marked shock and a wound in the abdomen about four inches in length on the left side, through which there protruded a mass of intestines well smeared with fæces. The wounds of the intestine were found and sutured, and salt solution was used very freely both before and after reduction of the intestine. The usual antiseptics were employed for the abdominal wound, and this was closed. It was interesting to note that within the abdomen, where only salt solution was used, no inflammation or trouble followed; whereas at the abdominal wound, where bichloride, etc., were used, suppuration took place. The patient made a good recovery, with some weakness of the abdominal wall, over which he now wore a bandage.

Nephrectomy, Subsequent Uretero-Lithotomy on Opposite Side.—DR. F. KAMMERER showed a patient, aged thirty-one years, upon whom he had, in the summer of 1895, performed nephrotomy and nephrectomy on the right side for a large renal calculus and degeneration of the substance of the kidney. The patient had done very well for one and one-half years following these operations, and had gained thirty pounds in weight. Although she had previously suffered for several years from renal colic on both sides, she had never had any pains on the left side since the operations in 1895. In February, 1897, the speaker saw her again, and she gave the following history: She had had severe pains on the left side for the past two weeks; very little urine had passed during the last week. She was nauseated at times and feverish. On examination the left kidney was rather sensitive to the touch. She was watched for a few days, but when anuria had been noted for thirty consecutive hours an incision was made, exposing the pelvis of the left kidney in the lumbar region. After incising the ureter near the pelvis, a stone the size of a bean was discovered, about four inches from the junction of the ureter with the pelvis, which was after some exertion pushed toward the incision in the ureter and removed. The pelvis of the kidney was drained through an incision in the kidney substance for two weeks, and the kidney irrigated with normal salt solution. The incision in the ureter was closed on the fifth day with catgut sutures. In about two months the entire wound had closed. The urine still contained some pus, but no renal elements.

Lithotomy, Common Bile Duct.—Dr. Kammerer also presented a woman, thirty years old, who had always been healthy, and had had four children. Her first illness began seven months ago, when she had a typical biliary colic. Severe attacks had occurred off and on for the last seven months. For the past six months she had had increasing jaundice; urine dark, stools clay-colored. Not having been benefited by any internal treatment, she was referred to the hospital for surgical interference. She had never passed stones to her knowledge. She was fairly well

nourished; icterus was intense and the liver was enlarged. From the history and examinations it was evident that some obstruction existed in the common bile duct, but excepting the enlarged liver palpation proved negative. The transverse incision according to Courvoisier, parallel and about one inch above the border of the liver, was made; there were extensive adhesions about the gall bladder, which latter was finally exposed by separation of the former. The attempt to separate the pylorus and duodenum from the cystic duct, in order to expose the latter, proved futile. The adhesions between the organs mentioned were so dense at this point that the somewhat distended cystic duct suddenly gave way during manipulation, and a large quantity of bile was discharged through the rent thus produced. A probe passed into the duct was arrested at a distance of two and one-half inches (in the common duct). Further attempts to separate the pylorus and duodenum were also in vain, as the parts were so densely enveloped in adhesions that they could not be differentiated from one another at this point. The stone, on the other hand, could be distinctly felt through the walls of the stomach. All attempts to dislodge the stone from the opening in the cystic duct failed—forceps, spoons, hooks, etc., being used. After a great deal of manipulation and the use of an amount of force scarcely warranted, the stone was finally moved by pressure upon the walls of the stomach and ultimately delivered through the rent after the latter had been considerably enlarged. It was of about the size of a small walnut. The opening in the cystic duct was now closed with catgut sutures, and Murphy's tube introduced into the gall bladder for drainage, alongside of which a tampon was pushed to the point at which the cystic duct was sutured. The patient made a slow but uninterrupted recovery, complete healing being accomplished in about six weeks.

The interesting point in this case was the dense adhesions of the digestive to the bile tract. The time consumed in the delivery of the stone was almost one hour, and the speaker thought the pressure exerted upon the stone through the wall of the stomach was very great. But he did not think any one would advise incision of the stomach to get at the common bile duct, which otherwise would have been a necessity in this case, owing to the changed anatomical relations of the parts, although the procedure by incision had been eminently successful when the duodenum was the viscus covering the common bile duct (Kocher).

Drainage of the Kidney and Pyrexia.—Dr. Samuel T. Alexander remarked, in relation to the fall of the temperature in Dr. Kammerer's case after removal of the drain leading to the kidney, that he had in several cases found pyrexia persisting after operations upon the kidney until the drainage tube had been withdrawn from the kidney.

The Chairman asked whether iodoform gauze had been used in all of these cases, and Dr. Alexander replied that it had not been in all.

Dr. Walker's observation had confirmed that of Dr. Alexander.

Dr. Kammerer thought the question of getting the wound leading to the kidney and that in the kidney to close would depend much upon the condition of the kidney. In the same case, one kidney the seat presenting stone without suppuration, the other with suppuration, no difficulty might be encountered in securing healing on the one side, but there might be great difficulty on the side of pyelitis.

Dr. Alexander had recently induced healing by the use of one of the ozone solutions, in a pus pocket in the kidney, which had been found to be the cause of persisting sinus.

Wound Infection by the Bacillus Aerogenes Capsulatus.—The paper was written by Drs. John Erdman and H. R. Brooks, and was read by the former. It was in 1891 that Dr. William Welch published an article in which he described the bacillus aerogenes capsulatus and the method of its cultivation. Dr. Welch had also contributed to the subject subsequently, and twenty-three cases, not all of them surgical, had been described in which this bacillus was found. Its habitat was thought to be the soil, and Dr. Erdman believed it was often present in the intestine, from whence it found its way to wounds. The infection might be a simple or a mixed one. An analysis of the cases of Welch, Flexner, and Dunham would seem to show that recoveries had been confined to the cases of mixed infection. In these, pus was usually present. The infection might take place through the circulation or through instruments. Among the symptoms which arose when the wound became infected by the bacillus aerogenes capsulatus were rapid pulse, rise of temperature, delirium, discoloration of the area involved, emphysema of the tissues, and rapid distention of the abdomen when the peritoneal cavity was involved. The rapidly developing delirium, stupor, and somnolence seemed to be due to toxæmia. Incision and drainage, and it might be amputation, were indicated.

The authors reported one case which had come under their observation, and in which the bacteriological report was made by Dr. Dunham. In a fall the patient had sustained compound fracture of the right humerus, contusion of the shoulder, and slight scalp wound. The infection of the arm wound by the third day by the bacillus aerogenes capsulatus was attended by increased pulse, temperature, and respirations, and delirium soon developed. The emphysematous condition of the tissues soon extended to the chest, so that amputation of the arm was deemed improper. The patient died three days after the original injury and one day after the infection alluded to.

A summary of the cases of Welch and Flexner which had a surgical bearing, and of others, including that of Dr. Bryant, brought the number up to sixteen. Four patients recovered. Two cases were of pure infection, and in both of these the patients died. In the others the best results were obtained when amputation was resorted to. The most frequent mixed infection was with the streptococcus; in a number there was the bacillus coli communis. In their conclusions the authors stated that, in view of the frequency with which the bacillus aerogenes capsulatus occurred in the peritoneal cavity and its association with the colon bacillus, they were justified in believing that its habitat in man was in the intestinal tract. When introduced from without it was probably from the soil. The mixed infection was not so grave. This suggested a possible treatment by an antitoxin serum or germ infection. The surgical treatment was by free incisions, with drainage or amputation. Dr. Halstead had brought out a treatment by immersion in a bath, which Dr. Dunham would comment upon.

Dr. E. K. Dunham opened the discussion, and confined his remarks chiefly to points suggested by the treatment which Dr. Halstead said he now applied to cases of infection, placing the patients in a full bath of warm water—96° to 98° F. The water was renewed at intervals of about two hours. He claimed excellent results from this treatment in various forms of infection, including one or two cases of infection from the bacillus aerogenes capsulatus. He was unable to give Dr. Dunham a good explanation of how the bath acted, but it seemed at least to promote the discharge of the poisons from the wound. In view of these facts, Dr. Dunham had made a number of experiments with the bacillus aerogenes capsulatus. The bacillus was a strict anaerobe, or incapable of growing in free oxygen. It had occurred to him that one might

take advantage of this fact to prevent or check infection by exposure to oxygen. In certain culture tubes he freed the bouillon of oxygen, in others exposed it to oxygen. The bacilli developed in the former, and little or not at all in the latter. When they did get a start, the evolution of gas in their development still further favored their growth. This became apparent in experiments with pieces of the liver of an infected animal, the evolution of the gas within the tissue causing it to rise in the water in which it was submerged. This did not occur with pieces of the kidney, which would seem to show that the sugar in the liver favored this gas formation. Perhaps it would not be so in life, as the liver might then possess inhibiting influence upon the bacilli. Just how much oxygen the blood might carry to act as an inhibiting influence on the growth of the bacilli in the tissues was a question. The experiments would seem to point to the wisdom of getting rid of the dead tissues as quickly as possible, since they favored the development of these bacilli, and to expose them as soon as possible to oxygen. Regarding Dr. Erdman's statement that the cases of mixed infection had been least virulent, it was not yet safe to draw the conclusion from this fact that the presence of the other germs rendered the bacillus aerogenes capsulatus less virulent. On the contrary, the latter was known to possess varying degrees of virulence in pure culture, and when the conditions were not favorable it did not grow. Now necrotic tissue with the presence of other germs might cause the less virulent germs to grow, whereas if these conditions were absent they would not develop at all. In Dr. Erdman's own case, this bacillus was not very virulent; Dr. Dunham had been unable to kill a guinea-pig with it.

Kidney Tumors Derived from Suprarenal Rests.—Dr. P. R. Bolton read the paper and gave the history of a case. The classification of these tumors was, he thought, in a state of chaos. There was little American literature on the subject. The gross and microscopic appearances of the tumor in his case were studied by Dr. Warren Coleman. The patient was an Englishman, fifty-six years of age; family history negative; he had had African fever ten years ago. He had noticed a mass in his left side for a year. The urine was dark red and contained albumin, many blood clots, and a few casts. Having ascertained that the other kidney was sound, Dr. Bolton removed the tumor, which involved the kidney and capsule. The diameters were fourteen, eleven, and nine and one-half centimetres. The visible surface of the kidney measured five, four and one-half, and three and one-half centimetres. At one point of section there was distinct connective-tissue limitation between the tumor and the kidney. So far as the examination had proceeded no part of the kidney was involved by new tissue, but the kidney was the seat of chronic diffuse nephritis. The tumor contained roundish, yellowish, small opaque masses, surrounded by irregular fibrous stroma and larger and smaller hemorrhages. No opinion had yet been formed of the nature or origin of the tumor, but so far as the examination had proceeded it was independent of the kidney proper. Speaking of tumors of the suprarenal capsule in general, Dr. Bolton said they were either benign or malignant, but even in cases showing distinct characters of cancer the patient might live several years. Out of thirty-five cases the male sex was affected in twenty-two, the female sex in thirteen. The age had varied from two and one-half to seventy-nine years, but in the majority of cases it was over forty. The right and left kidney had been affected about equally. Metastasis had occurred into various organs. The treatment, when possible, was nephrectomy.

Dr. Dunham said he had met with only one case of tumor of the kidney which he thought had its origin from the adrenal body. It was of very small size, and attracted attention only at autopsy.

Section on General Medicine.

Stated Meeting, May 18, 1897.

Louis F. Bishop, M.D., Chairman.

The Composition of Cream and a Consideration of the Desirability of Establishing a Standard.—Dr. J. H. Huddleston read a paper on this subject. In 1896 the city consumed about nine million quarts of cream. It came from within a distance of three hundred miles. About half of it was consumed by families, the other half by ice-cream factories, bakeries, etc. The former usually received it in bottles, the latter in cans. The bottle method was best if the bottles were properly cleansed; otherwise it was the worst. The cream was called gravity cream when collected by allowing the milk to stand and the cream to rise; separator cream when separated from the milk by some one of the centrifugal machines. The latter method was the quickest way of collecting the cream, the gravity method requiring about twenty-four hours for the cream to rise to the surface. But this length of time seemed to be of little consequence in the minds of the dealers, for they usually retained the cream some days, even a week or longer, as age added to its thickness and therefore apparently to its richness. It had been shown that this thickening from age was due to the multiplication and action of bacteria in the cream. There was no standard richness of cream. Dealers supplied only two kinds, what they called light and heavy cream. For the latter they charged considerably more, but the amount of fat which either kind contained was variable. This was probably due to the fact that there was not yet a well-considered plan as to cream tested by fat quantity. For instance, the dealer might sell a can containing a certain number of quarts, say forty, which he estimated would produce a certain number of pounds of butter, say thirty-five, but when this had been tested the amount of butter obtained had not corresponded with the estimated amount by a number of pounds. One could not tell the composition of the cream by its appearance, for the same cream presented a different appearance according to its age, etc. The effect of sterilization or pasteurization was to make the cream appear thinner, for the reason that germ growth was checked. But sterilization made it unsuitable for some purposes, and pasteurization as usually carried out left a considerable number of bacteria. Still, such cream kept longer than that which was not pasteurized. If the temperature were carried above 70° C. the cream would have somewhat a cooked taste. The regulations of the board of health required that milk sold in the city should conform to certain tests. Skimmed milk could not be sold. The author thought the people should be able to purchase cream of a certain fat test, and suggested the possibility of a plan to supply certified cream similar to the plan of Dr. Coit for supplying certified milk in Newark. Such cream could be of any desired fat quantity and of known age.

Dr. Hubbard, secretary, read a letter from Dr. Henry Coit, of Newark, regretting his inability to be present, and suggesting as one requirement for certified cream a fat percentage.

Dr. R. G. Freeman thought that since cream was usually valuable in proportion to the amount of fat which it contained, and this amount varied so greatly in substances sold under the name cream, there ought to be some standard. Cream which was collected by

the old process would require to be tested, but it was likely that that which was collected by centrifugal machines would usually come up to the regulations, so many quarts of cream to so many quarts of milk, allowing that the latter conformed to the requirements of the health department. He understood that the standard for milk had been placed so high in Boston that dealers had found it necessary to take all their milk to a central station and mix it to avoid any portion falling below that standard. Of course this required manipulation. The less manipulation which milk received the better for it. The ideal method was to have milk properly bottled at the dairy and not opened until it reached the consumer. It gave less chance for contamination. He agreed with Dr. Huddleston, that skimmed milk had a certain nutritive value for the healthy and sick, and at present a great deal was thrown away at large dairies because it was not allowed to be sold in this city. He thought it ought to be permitted to enter the city and sold at some price as skimmed milk. Regarding pasteurization of milk in large plants, he thought that had injured the reputation of pasteurization, for as thus carried out, in some plants at least, the milk was raised to a certain temperature and almost immediately cooled. It was far more effectual to keep that temperature for from fifteen to thirty minutes. A temperature of 68° C. for thirty minutes was more effectual in sterilizing milk than a momentary temperature of 80° or 90° C., and, of course, it changed the taste less.

Dr. L. Emmet Holt felt that every time the subject of the milk and cream supply was brought up, new impulse was given toward securing a clean and reliable supply of these nutritive fluids. At present there certainly was the greatest possible variation with regard to the cream, and he supposed it was because there had not yet been sufficient demand for a cream of a definite standard. He thought it did not make so much difference just what figure was taken, whether fifteen or twenty per cent., only that there should be some standard. Perhaps twenty per cent. would be the nearest for our supply, and would change the price least. With regard to skimmed milk, it certainly was valuable in certain conditions. He had been experimenting with it in certain intestinal disorders and typhoid fever in children, with extremely good results, especially after peptonizing it.

Dr. W. L. Stowell said there were two sides to the question, the one the commercial, the other the scientific or food value. It certainly made a difference to a person from the point of view of nutrition whether what he purchased contained twenty-five or whether it contained only fifteen per cent. of fat. Heavy cream contained forty to forty-two per cent. Light cream which he had tested contained fifteen to twenty per cent. Most cream supplied to the city was centrifugal cream. It ought to be certified as to the percentage of fat and the purity of the milk from which it came. On the same farm the surroundings of the horses might be found models of neatness, while those of the dairy cows were dirty.

Dr. H. G. Piffard said criticism had been offered upon the double standard required for milk sold in this city, that of the fat test and the test for solids. They did not correspond. For practical purposes he thought the fat test was sufficient, it could be applied more easily. He would make it higher than that required at present, for the average milk in the district from which New York received its supply contained 3.75 per cent. of fat. When cows failed to give milk of that standard the farmer should sell them to the butcher and replace them by those which gave richer milk. He had read that some dairymen in the West would not think of keeping cows which gave less than four per cent. fat. Perhaps dealers would do as they did in Boston, pool their milk, but that could be prevented by occasional tests being made at the farms. Dr. Piffard also referred to the value of skimmed milk, and said that much of it was thrown away, though much was returned at creameries to farmers who fed it to their stock. As it was there pooled, he had in a paper called attention to the necessity for sterilizing it to prevent spread of tuberculosis. Regarding cream, Dr. Piffard thought there should be legislation prohibiting dealers from holding it back or selling it after it was a certain number of hours old, prohibiting the use of preservatives, and requiring a standard for butter strength.

E. Nelson Ehrhart spoke upon the subject of dairies and means of securing pure milk in general. He had been engaged to analyze the milk and point out necessary changes in several dairies, and was convinced that here was a field for educated and practical men. Some such system of preventing contamination of milk as that employed in Copenhagen was desirable. In talking with Mr. Martin, of the board of health, he had been informed that the sale of skimmed milk had not been allowed through fear dealers would mix it with other milk. It would seem, however, that licensed dealers ought to be permitted to sell it as skimmed milk, for it possessed food value.

Dr. W. L. Baner had tested the taste of gravity and centrifugal milk, and his preference had been expressed for the former. For some reason the taste was altered somewhat by centrifugal separation.

The Methods of Infection in Malarial Disease.—Dr. J. Richard Taylor read this paper. The first part was devoted to a brief statement of views expressed in comparatively recent papers, including Daily's, R. C. Newton's, Thayer and Hewetson's, Manson's, Darlington's, etc. Sternberg held to the old view of inhalation of marsh miasm; Daily advanced the idea that infection was through drinking-water; Manson held that man was the alternate host, from which the germs must escape in order to complete their life cycle, and this was by agency of the mosquito.

House Plants and Malaria.—Just after the Christmas holidays Dr. Taylor was called at Sag Harbor to a woman eighty-two years old, who had some paroxysms of fever with gastric disturbance, and at her suggestion that it might be malaria he examined the blood and found the Lavaran plasmodium. This was remarkable in view of the facts that the ground was covered deeply with snow, the patient had not been from home for four years, the well water could not have been contaminated, all ponds were frozen. Soon a daughter had similar symptoms. There were some potted plants in the house, and he was unable to make any definite impression upon the disease until these had been removed. At the same season, a third case developed in another house in which a trap door led into a cellar whose walls were covered continuously with mould. In still another house some weeks later, in the same town, malaria with the plasmodium of tertiary fever developed in a child, and no apparent cause could be found except the potted plants in the room occupied by the patient. When these were removed he was able to cure the disease. He then went to some florists in localities where there were no marshes, and where they were not likely to be infected by the water supply, and inquired their history and made blood examinations. He found in four different localities that the blood of these people contained the malarial plasmodium. These florists were not ill, but they were hardly ever quite well, complaining of digestive trouble, headache, and indefinite symptoms. They could be straightened up temporarily by a big dose of quinine.

Dr. Taylor then gave his personal experience when in Charleston. He took precautions about the drink-

ing-water to avoid filaria sanguinis hominis, and when he rode out he took the precaution to return early before the mists rose from the marshes. During this time he kept well, but later, not having time to ride until rather late in the evening, he contracted pernicious intermittent fever. He could then find the malarial plasmodium in his blood. From 1879 to 1883 he resided in the mountains of Colorado, and saw what he supposed had been called mountain fever, but all the cases which he saw were tertian intermittent fever. A German writer had spoken of a similar fever developing in the mountainous regions of Russia, at the time of the melting of the snow. This was in harmony with what he had seen in Colorado. But at Sag Harbor the snow was not melting and the region was not mountainous. There was no bad water to explain the malaria and the presence of the malarial body in the blood. These facts would seem to point to something emanating from the plants, or rather from the earth itself, as one of the surest means of infection. Yet the water theory should also be borne in mind. Some observations relating to the water system of Sag Harbor during one period pointed in this direction, but in the cases related above the water was not obtained from that system.

Dr. H. G. Piffard referred to the sudden development of chills in tuberculosis which sometimes simulated malaria, but the changes in the blood were different. In connection with treatment, he spoke of the value of Alonzo Clark's combination of ten grains of quinine and six of capsicum; also of boneset, fluid extract of the fresh plant. Regarding the plasmodia, which were supposed to take twelve or twenty-four hours to pass through their stages, he could not harmonize this view with the occurrence of chills within three hours after exposure, as had once occurred in his own person and often in sailors visiting tropical coasts.

Dr. R. C. Newton had little doubt that the potted plants were the cause of the malarial infection as mentioned in the paper. He could give some experience which would seem to confirm that view. He had a friend who was a florist, and while generally in good health he had to guard against exposure on account of taking "colds," which he could cure by quinine. The question of atmospheric temperature in relation to malaria required further study. Around New York malaria was most common during seasons when the diurnal variation in the temperature was greatest; when there were warm days and cool nights. There were not wanting microscopists who regarded the plasmodium as the consequence, not the cause of malaria. Nor was he convinced that infection could not take through drinking-water.

Dr. J. W. Brannan had not seen in literature potted plants referred to in connection with the etiology of malaria. It might be that there was more malaria in New York City than some doctors were disposed to admit, and in potted plants might be an explanation.

Dr. R. G. Freeborn said there was a good deal of malaria which originated in New York City. It was almost invariably associated with enlargement of the spleen, and usually the malarial organism could be found. But in his opinion malaria and enlargement of the spleen existed not infrequently when ordinary examination failed to reveal the malarial organism. These statements were based on what he had seen at the Bellevue and Roosevelt dispensaries in children not from out of town.

Dr. T. S. Southworth had almost invariably been able to find a history of previous residence in the country in cases of malaria in children in this city. It was possible malaria might develop from plants in the room by reason of soil brought from New Jersey or Long Island.

Dr. Taylor said, in closing the discussion, that he had been surprised during a visit here this winter to learn that in the German Hospital of this city there were nearly equal numbers of patients with pneumonia and with malaria at a season of the year when pneumonia was supposed to be frequent and malaria infrequent. It appeared from an article in one of the journals that malaria had been frequent in Philadelphia the past winter, as well as in New York.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE NEW HOSPITAL FOR INFECTIOUS DISEASES—THE CAVENDISH LECTURE—RELATION OF OVARIAN DISEASE TO PREGNANCY—ALCOHOLISM AND LEGISLATION—INCUBATORS—MEDICAL EDUCATION FOR WOMEN—VENEREAL DISEASE IN THE INDIAN ARMY—MERCER'S HOSPITAL DISPUTE.

London, July 16, 1897.

The Prince of Wales is doing a great work for the hospitals apart from the fund he is raising. On Monday, accompanied by the Princess, he opened the new Park Hospital, which has been built by the asylum's board for the further accommodation of cases of fever and diphtheria. For two years about eight hundred workmen have been engaged on these buildings, which are situated at Hither Green, near Lewisham, about six miles from London Bridge, in grounds of twenty acres. In 1896 there were 22,273 patients admitted into the board's hospitals for fever, but these were not sufficient for the metropolis, swollen to some five million inhabitants. Besides the small-pox accommodation, the board has nine hospitals for infectious cases, with forty-two hundred and fifty-four beds. The new building will add five hundred and forty-eight more. It is provided with everything of the most modern type. Another hospital, for five hundred and twenty beds, is in course of construction at Tooting, and it is proposed to build wards for seven hundred convalescents at Carshalton. When all this has been accomplished, there will be provision for six thousand patients at the disposal of London, which surely ought to suffice. The burden on the ratepayers is heavy, but it is felt that in the end they must benefit.

The Cavendish lecture this year was delivered by Sir John Williams, who devoted it to the consideration of the problems involved in cases of ovarian tumor in pregnancy. It has been asserted that pregnancy gives rise to these growths, but there seems no ground for the suggestion. If it were so, such tumors must surely be much more common. Taking the one thousand cases operated on by Sir Spencer Wells, and dividing them into groups according to age, the lecturer found, from twenty to twenty-five, ovarian tumors three times as frequent in the single as in the married, but after thirty-five the proportions were reversed. But then there is the great change in the relative numbers of the married and single with advancing age. At sixty-five single women have these tumors in the proportion of eight to one married, as far as the registrar-general's statistics show. By similar comparisons, Sir John Williams concluded that these tumors were less frequent in each successive pregnancy, and that there was no ground for Leopold's startling suggestion, based on two cases, that pregnancy is a cause of cancer of the ovary. It is surprising that such a notion should have been based on a couple of cases, one of Leopold's own and one of Spiegelberg; and that Wernich should have supported it on two others, one of his own and

one of Kursteiner. But strange things are "made in Germany." With regard to the conclusions from Sir S. Wells cases, it cannot be said that all the ovarian cases passed through that great surgeon's hands—a point which seems to me considerably to affect the statistics put forward, and, in fact, it is scarcely possible to furnish figures which statisticians would consider sufficient to build upon. The lecturer then considered the effect of such tumors on labor. The mortality, even when no great difficulty in delivery occurs, is "appalling"—and for explanation of this Sir John said we must look to injury done to the tumor itself and the parts adjacent, pelvic or abdominal. He saw but two ways of preventing such injury, either removal of the tumor during pregnancy or anticipation of labor by Cæsarean section. Not that all cases should thus be met, for small tumors in the abdomen or those which could be raised from the pelvis and retained in the abdomen do not suffer much injury during labor. With these exceptions he advised operation in all cases. Ovariotomy during the pregnancy had only half the mortality of cases left to natural labor. When this was impracticable, from adhesions or otherwise, he would have recourse to Cæsarean section.

Dr. Pitcairn, deputy medical officer of Holloway and Newgate prisons, read a paper on Monday on "Alcoholism and the Penal Laws of Europe and United States of America," before the Society for the Study of Inebriety. He awarded the distinction of having raised tippling to a fine art to Germany, where drinking has of late become, as it were, a part of the nationality of the people. He said most communities displayed the same attitude toward the public drunkard, who was regarded as a nuisance which it was attempted to abate by fines and imprisonment. The habitual drunkard has been too long ignored, though found everywhere. This he thought might be due to the worship of so-called liberty, and is perhaps a survival of the time when no disgrace was attached to intoxication. But during the last half-century there has grown up a conviction among psychologists that inebriety is a mental disorder requiring seclusion. The habitual drunkard has assumed a national instead of individual importance. Austria has recognized the necessity of grappling with the problems involved, and public opinion is ripe for reform of the laws of our own and other countries.

At the Victorian Era Exhibition there has been a private view of incubators. The "couveuse" so long adopted in France for rearing premature or sickly infants has been tried in some of our maternity hospitals with success, but the system has not been widely adopted here. In the exhibition mentioned, various improvements in the incubators are exemplified, especially as to the warming (by hot water) and ventilation. Portability has also been attained by the use of aluminium in their construction.

At the Woman's Congress on Education, held here this week, the idea of establishing a university for women alone was generally repudiated. Mrs. Garrett Anderson, M.D., was among the leaders, and gave some account of her own experience in the sixties in obtaining medical instruction. She delivered an address on medical education, in the course of which she said that with the six universities and three corporations now open to women, a new university for women only would not attract any woman to enter it. Meantime, the Women's School of Medicine is making great progress. The number of students increases, and the school is more than self-supporting.

The Indian government has taken steps to have a free hand in dealing with the prevention of venereal diseases among our soldiers. The viceroy and the commander-in-chief have both spoken forcibly in favor of the measures proposed. Nothing will be done that can be represented as encouraging vice, and this should disarm some of the opposition which is threatened. Already Mrs. Butler and Sir J. Stansfeld have raised their voices, and it is quite possible that their followers may give rise to considerable annoyance to the authorities, but they have no longer a chance of influencing the government, and public opinion seems to be against their views.

The Mercer's Hospital dispute has advanced a stage. Candidates have been found as I suggested — yes, twenty of them—and the governors have made their selection. But the end is not yet. Protests were handed in, and I am assured an appeal to law is impending. But that law is slow and uncertain. The lamentable fact remains that twenty men were ready to take the places of the dismissed staff—and we talk of the prestige and the honor of the profession!

OUR VIENNA LETTER.

(From our Special Correspondent.)

PROF. KARL TOLDT, THE ANATOMIST, ELECTED RECTOR OF THE UNIVERSITY—NEW SURGICAL AND GYNÆCOLOGICAL WARDS FOR THE VIENNA GENERAL HOSPITAL—CARBONIC-ACID BATHS FOR HEART DISEASE IN VIENNA—THE MENINGOCOCCUS INTRACELLULARIS AND EPIDEMIC SPINAL MENINGITIS—CANCER OF THE SINUS PYRIFORMES AND SO-CALLED BRANCHIOGENIC CANCER.

VIENNA, July , 1897.

PROF. KARL TOLDT, professor of anatomy, has just been elected rector magnificus of the University of Vienna for the scholastic year 1897-98. The tenure of office is but a year, and there is usually a rotation in the selection of candidates from the different faculties that constitute the university. Professor Toldt succeeds Professor Reinisch, a jurist.

It has at last been definitely decided that part of the old Vienna General Hospital must go. The increased traffic, with the incident noise and dust at the corner of Alserstrasse and Spitalgasse, made the wards here almost uninhabitable for patients. Since the advent of the electric tramway this state of affairs has been much worse. The line is one of the most travelled in Vienna, and is becoming more so. Its cars have had to be increased in number, and this will constitute more and more of an annoyance as time goes on. The old wards in the hospital have become a constant source of complaint, especially for the surgeons and gynæcologists. Aseptic surgery and aseptic post-operative courses are extremely difficult to secure with the limited facilities in the thoroughly old-fashioned hospital building. A series of wards on the pavilion plan are to be erected on the grounds of the Lower Austrian National Insane Asylum on Lazareth Gasse, which are to provide quarters for some eighteen hundred surgical and gynæcological patients; while the buildings at the corner of Alserstrasse and Spitalgasse are to be replaced by a large apartment house. Such is the ministerial decision, but as to when the plan will be accomplished, with the proverbial slowness of the Austrian government, especially when merely scientific matters are concerned, it is extremely hard to say.

For more than a year now series of observations have been made in two of the divisions of the hospital with carbonic-acid baths in the treatment of heart disease. The Schott or Beneke treatment has attracted a good deal of attention in America, too, so that the Vienna opinion of it will be of interest. They are not so enthusiastic over its success here as Schott himself is at Nauheim. It is not a novelty in therapeutics, however, to find that others do not meet with the same success in the use of a remedy as its originator.

Of course, here as everywhere else, except where there are abundant natural carbonic-acid springs, one labors under the disadvantage of having to employ artificial solutions of carbonic acid. Despite this, it has been found that in certain cases of heart disease, utterly intractable by the ordinary methods and remedies, the carbonic-acid bath is of great benefit. It has been found, too, that when the ordinary heart tonics fail to produce an amelioration of symptoms or are badly borne when employed only in conjunction with rest in bed, they regain their usual therapeutic effect after a course of carbonic-acid bathing. When used alone or in conjunction with the Swedish movements and absolutely without drugs of any kind, the baths often give excellent results, better than could be hoped for with ordinary methods of treatment. There are certain cases, however, in which they do not seem to produce the slightest effect. There are others in which, apart from aneurism or arterio-sclerosis, which are considered here absolute contraindications, they produce unfavorable effects. They increase cardiac arrhythmia, and sometimes occasion symptoms of collapse. It seems impossible to tell beforehand the cases in which these unfavorable effects will follow, as they are due to personal idiosyncrasy. On the whole, while the new treatment is a welcome adjuvant to the limited circle of cardiac therapeutic measures, it is by no means a universal panacea for heart disease, and needs care and judgment in its application.

A little epidemic of cerebro-spinal meningitis has been observed in Vienna in this last month. Several cases have turned up at the Franz Josef and Rudolf hospitals, and cases of meningitis occurring without easily recognizable etiology are suspected. For purposes of disinfection and necessary burial precautions, the post-mortem diagnosis is important, and that they make here with what is considered ample assurance from the bacteriological examination of the purulent exudate. The finding of the intracellular meningococcus decides the question in favor of epidemic cerebro-spinal meningitis. Weichselbaum's discovery of this coccus, its constant occurrence, and the description of its peculiarities have been confirmed by a number of German observers, until now its specific pathogeneity is considered settled. In a recent autopsy, in a case in which the clinical diagnosis had been meningitis from otitis media, and in which the destructive process in the petrous bone was very slight, while the meningeal suppurative exudate was widespread over the base and in the cord, the anatomical differentiation was considered to be assured only when the bacteriological examination of the exudate gave negative results as regards the meningococcus and showed the presence in large numbers of other pus-producing micro-organisms.

A case of recurring squamous epithelial cancer of the cervical glands, in which the patient succumbed after two operations, proved of special interest on the autopsy table last week. The most careful laryngoscopic examination by one of Vienna's best-known laryngologists had failed to discover any suspicion of neoplasm in the larynx or its neighborhood. At the autopsy a small cancerous nodule was found deep down in the right sinus pyriformis. It was evidently invisible to the laryngoscope, and yet undoubtedly the original seat of the cancer, which had given metastases to the cervical glands. These squamous epithelial cancers of the cervical region are often spoken of as taking their origin from embryonal vestigia of the branchial clefts, but one is tempted to wonder how often the simpler explanation of their metastatic origin from small cancerous nodules of the pharynx and larynx would be the real one. Undoubtedly this is the case much more frequently than is supposed.

DO ABNORMALITIES TEND TO DIE OUT IN THE COURSE OF TRANSMISSION?

[illegible]

SIR: In Dr. Park's paper upon "The Problems Which Most Perplex the Surgeon," published in the MEDICAL RECORD of July 3d, I find the following paragraph (page 3): "If cancer is transmissible by heredity and is not an infection, it should tend to die out in the course of transmission, as do all abnormalities. Thus, out of three hundred marriages in which both husbands and wives were deaf and dumb, in only five per cent. of the cases were the offspring similarly affected; while of three hundred and ten deaf-mutes married to those who could hear, the proportion of affected offspring amounted only to one in one hundred and thirty-five (Buxton)."

I feel a great deal of reluctance in challenging Dr. Park's statement; but my study of heredity, extending over a period of twenty years, leads me to the conclusion that congenital abnormalities are reproduced with very great certainty, and that it is extremely doubtful whether even the judicious mating of the sexes would "breed out" such pathological variations as epilepsy, hæmophilia, idiocy, and deaf-mutism. My opinion that congenitally abnormal persons should not marry, because they are likely to reproduce their abnormalities in their children, is supported by the views of such authorities as the late Oliver Wendell Holmes, the late Benjamin Richardson, Paget, Clouston, and Maudsley. It is most unfortunate that a physician of Dr. Park's eminence should teach that "all abnormalities tend to die out in the course of transmission," since it will encourage the physically deformed and the mentally incapable to marry without fear of the consequences.

Has Dr. Park proved that deaf-mutism "tends to die out in the course of transmission"? I trow not. Mr. Buxton (David Buxton, of Liverpool) is his authority, not mine, and the following quotation was addressed to the British Association in 1889 by Sir William Turner, who produced a mass of evidence, which he asserted "proves that it (deaf-mutism) is often hereditarily transmitted": "Mr. Buxton, who has paid great attention to this subject, refers to several families where the deaf-mutism has been transmitted through three successive generations, though in some instances the affection passes over one generation, to reappear in the next. He also relates a case of a family of sixteen persons, eight of whom were born deaf and dumb, and one, at least, of the members of which transmitted the affection to his descendants as far as the third generation" (*Liverpool Medico-Chirurgical Journal*, July, 1857: January, 1859).

But Mr. Buxton's evidence possesses a limited value, because he ignores the "metamorphoses" of heredity, and he pays very little attention to atavism. Moreover, he does not appear to have carefully distinguished between congenital and acquired deaf-mutism. The latter form of the disorder consists chiefly of instances in which deafness has followed some injury to the auditory apparatus before or shortly after the power of speech had been attained. This class (perhaps forty per cent. of all deaf-mutes) is large enough to influence statistics, and its existence partially explains the figures quoted by Dr. Park. Acquired deaf-mutism is, of course, no more hereditary than accidental blindness.

Every form of degeneration is liable to be transmuted in the course of generations. What is passed on from parent to offspring is a depraved constitution, which may manifest itself in half a dozen different diseases, such as hysteria, imbecility, idiocy, etc. Moreau (of Tours), in his "Psychologie Morbide," says: "It shows an incorrect conception of the law of hered-

ity to look for a return of identical phenomena in each new generation." Morel ("Traité des Dégénérescences") writes: "We do not mean exclusively by heredity the very complaint of the parents transmitted to the children, with the identical symptoms, both physical and moral, observed in the progenitors. By the term heredity we understand the transmission of organic dispositions from parents to children." My quotation from Mr. Buxton shows that he knew of this phenomenon as a factor in the heredity of deaf-mutism, although Dr. Park's quotation seems to prove that he underestimated its statistical value.

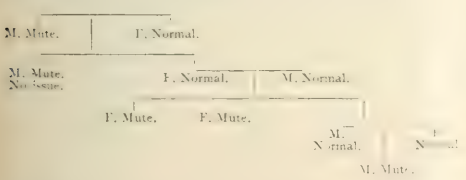
Ribot, in his work upon "Heredity" (page 42), writes: "We would remark that the returns of the Deaf and Dumb Institution of London, from its foundation to the present time (1875), are conclusive in favor of heredity." (Then follow statistics.) "The deaf-muteness of ascendants may, in their descendants, be transformed into an infirmity of some other description, such as obtuseness of the mental faculties or even idiocy. Of this the distinguished anatomist Menckel gives many instances."

Dr. Clouston, in "The Neuroses of Development," says: "Ordinary deaf-mutism is closely allied to idiocy, and is one of the hereditary neuroses. To me it is a physiological sin that marriages between such persons should be legal."

Congenital deaf-mutism is not mere inability to hear; if it were, I should not trouble you with this letter. It is a constitutional affection showing a markedly degenerate state, and is a sign that the family in which it is present is on the road to decay.

According to Prof. Graham Bell, idiocy is forty-three times as common, and blindness fourteen and one-half times as common, among deaf-mutes as among the general population. I assume that he means congenital blindness. I am sure that Dr. Park will agree with me that an idiot parent has a decided tendency to beget idiot children, however "normal," as it is called, the second parent may be. Professor Bell, a few years ago, wrote that "philanthropy is doing everything possible to encourage marriage among deaf-mutes. Unless this system is changed, we shall certainly have a deaf variety of the human race." Of this I see no danger, for, while we are increasing the supply of idiots, of lunatics, of deaf-mutes, of the deformed, *et hoc genus omne*, the tendency is for degenerated families to become sterile and consequently extinct.

The marriage of a deaf-mute with a so-called "normal" person is said to be unproductive of deaf-mutism in the next generation. "Normal" in this instance appears to mean that the individual can speak and can hear. I have no complete statistics of the results of this connubial combination, but I have sufficient evidence to lead me to suppose that it is productive of abnormality, not necessarily deaf-mutism, of course. The following case, a typical case of atavism, is vouched for by the Scotch Lunacy Commission:



With great respect, I submit that Dr. Park is mistaken in thinking that "all abnormalities tend to die out in the course of transmission." Upon the other hand, I feel sure that many pathological variations, when congenital, have a decided tendency to reappear in the next or some future generation. I believe I can demonstrate by irrefutable evidence that idiocy, insanity (not apparent till after puberty), epilepsy, the gouty diathesis, hæmophilia, color blindness, and the tuberculous diathesis—most of them signs of racial deterioration—are almost invariably transmitted.

LAWRENCE IRWELL, M.A., B.C.L.

[illegible] West [illegible] Street, Buffalo, N. Y.,
July 12, 1897.

THE TREATMENT OF TYPHOID FEVER.

To the Editor of the Medical Record.

SIR: In the issue of the MEDICAL RECORD for July 3d is an abstract of a paper in which my name was freely used—and also a synopsis of some remarks of my own, which in one respect does me too much and in another too little justice. Will you therefore accord me space to correct an erroneous impression which, in the MEDICAL RECORD, will have too large a circulation to be passed uncriticised?

Before remarking upon Dr. Upshur's allusions to "The Woodbridge Method" it is proper to say that he has my most hearty thanks for the polite and apparently sincere compliments he pays me, but when he characterizes the verdict rendered upon the clinical reports on the abortive treatment of typhoid fever as "erroneous conclusions drawn from cases of mistaken diagnosis," he is disparaging the achievements and discrediting the statements of a very large and very respectable class of American physicians, whose statements upon any medical question are quite as valuable as his own, and upon this subject much more so, since their remarks are the rehearsal of facts and the expressions of opinions that have been founded upon actual experience at the bedside, while his own can be fully characterized in no other way than as the liberal expressions of erroneous conclusions, the result of faulty reasoning from false premises.

Because Dr. Upshur does not understand the abortive treatment of typhoid fever, and because the exhibition of certain remedies produces results which he cannot believe to be possible, "unless the day of miracles had returned," he attempts to discredit it on the theory that "it had not been supported by the results"—a theory that can be sustained only on the assumption that the many hundreds of physicians who have aborted typhoid fever and have reported 8,434 cases treated, with 150 deaths (death rate of 1.88 per cent.), have made errors of diagnosis. Most of these deaths occurred in cases in which the treatment was instituted late in the course of the disease, or when the method was never properly applied, and yet all are included to silence all suspicion that the statistics have been "doctored," though they unjustly swell the death rate.

It is but just to Dr. Upshur to say that when he read his paper he was not aware of the enormous proportions that these statistics are assuming, but if he had read my book he would probably have found enough there to prevent him from putting himself in the dilemma from which he will find it difficult to extricate himself.

Let us examine the data contained in my paper read before the Ohio State Medical Society, which consisted almost entirely of brief quotations from the letters of hundreds of physicians from all parts of the country, from all walks of professional life, from the ablest professors, from physicians who were or who had been at the head of some of the largest hospitals in the United States, from the equally competent private practitioner—all of whom had used this method so successfully that many declared their convictions that death is a wholly unnecessary consequence of typhoid fever. Many whose ability to make correct diagnoses or to draw exact conclusions no man would

dare to question, said in most positive language that this method of treatment "aborts typhoid fever." Nearly all spoke in highest commendation of it. So far as I know, it has been adversely criticised by only twelve physicians who spoke from bedside, and some of these from an experience limited to the treatment of one, two, or three cases each.

This report dealt with the data of 5,449 cases of typhoid fever treated with 105 deaths (every death of which I had any knowledge)—a death rate of 1.92 per cent., and an average duration of illness in the 3,129 cases in which it was given of 12.7. These reports were accompanied by a large number of clinical charts or histories, and present conclusive evidence that they were the outgrowth of the most patient and painstaking observations, in which every precaution had been taken to avoid errors of diagnosis or judgment, and they show that the conclusions were justified by the results.

This paper was read on May 21, 1897, and since that day I have received more than three hundred letters containing the reports of 2,985 cases treated, with 54 deaths (a death rate of 1.80 per cent., which slightly reduces the death rate from that of the previous report), making the record stand now at 8,434 cases treated, with 159 deaths, or a death rate of 1.88 per cent., and an average duration of illness in the 5,372 cases in which it was given of 12.9 days.

Besides the bare statistics, the almost universal verdict of this host of observers is to the effect that the treatment greatly lessens the severity of the disease, causing it to run a mild course to quick recovery. Delirium or tympanites rarely develops after the treatment is instituted, and if present it generally quickly disappears, the tongue remains moist, the temperature runs lower or quickly drops to nearly or quite normal, and the "typhoid state" is unknown.

These results have been reported in thousands of cases in which the treatment was instituted after there could be no doubt as to the diagnosis, and it is to be regretted that Dr. Upshur has had the temerity to insult this great host of careful, scientific, self-sacrificing observers, and through them the whole medical profession, by stating that "the originator of the method must have drawn erroneous conclusions from cases of mistaken diagnosis."

The correction of the report of my own remarks may be very brief indeed. "He had never said a harsh thing about any member of the medical profession." This sounds well and I would it could stand unchallenged, but when I first declared that typhoid fever could be aborted the announcement was met by such sharp criticism, sometimes degenerating into personal abuse, that it would have required a much better temper than I possess to have enabled me to withhold all acrimonious retorts. The above quotation requires to complete it the qualification—until called forth and justified by the sharp criticism of a principle which cannot be successfully attacked. I was in a very apologetic mood when I made these remarks, which was due to the cordial reception which had been accorded me when I least expected it, and to the courteous and friendly letters which were then and are still coming from physicians who have used the method I have advised for the abortive treatment of typhoid fever and commend it.

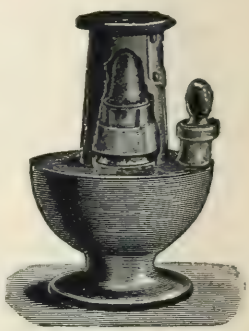
JOHN ELIOT WOODBRIDGE, M.D.
1257 PROSPECT STREET, CLEVELAND, OHIO.

The Austrian Universities.—The number of students at the Austrian universities last semester was: Vienna, 6,104; Gratz, 1,667; Prague, 1,391 German, 2,787 Bohemian; Innsbruck, 1,004; Lemberg, 1,556; Krakau, 1,296; Czernowitz, 391. Of the total number, 4,728 were medical students.

New Instruments.

A FORMALDEHYDE GENERATOR.

THE investigations of the last few years have shown that formaldehyde vapor is a most powerful germicide and antiseptic, exceeding in promptness and efficacy most of the disinfectants usually employed. In solution it is likewise a powerful antiseptic, and is now largely used for preserving anatomical specimens. What makes it so valuable as an air or room disinfectant is its lack of chemical action upon metals, colored fabrics, etc. A room may practically be saturated with it, and no metallic surfaces, bronzes, paintings, dresses, or the like will be injured by the vapor.



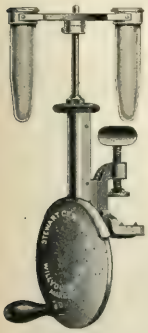
If chlorine or sulphurous-acid gas are used, articles which are liable to be injured must either be removed from the room, or coated with varnish or wax, or some other protective. In either case there is a chance that some of the germs intended to be destroyed are removed from the sphere of action of the disinfectant. With formaldehyde vapor this is different. Everything may be left in the room, uncovered or unprotected, and the apparatus set going. The accompanying illustration represents a generator for the diffusion of formaldehyde vapor. It is produced in this apparatus by a very simple application of the best method now available, viz., the passage of a mixture of the vapor of wood alcohol and atmospheric air through platinum gauze in a state of red heat, thus causing flameless combustion of the same. In less than one minute the process can be brought into operation and it will continue without further effort as long as the supply of wood alcohol lasts. The apparatus is manufactured by John Reynders & Co., of this city.

A SIMPLE, CONVENIENT, AND EFFICIENT CENTRIFUGE.

BY A. H. STEWART, M.D.,
PHILADELPHIA, PA.

THE great value of the centrifuge as an efficient and speedy aid to diagnosis is now well recognized by all. Having had occasion during the past five years to make considerable use of the centrifugal method, I became early convinced that most of the instruments were unnecessarily complex. I therefore undertook the task of designing an instrument which should be at once adequate to the purpose, as well as strong, and at the same time simple in construction. In this work I have been aided greatly by the mechanical skill and ingenuity of Messrs. Willyoung & Co., of Philadelphia, whose facilities were very kindly placed at my disposal. In the accompanying figure is illustrated the instrument which I have designed. There is but one pair of gears, viz., that made up of the large circular bevel gear, to which the handle is affixed, and a smaller beveled pinion at the base of the main shaft. The bearings are of polished, hardened steel; that of the large gear is long and the gear wheel

itself is very stiff, so that no twisting or binding of the gears can take place. The main casting and the clamp casting are separate, so that should the latter break it may be easily replaced. As both are very strongly ribbed, however, no breakage is anticipated. The clamp has considerable area and is so designed that it is impossible for the instrument to twist loose when in use. The thumb nut is above instead of below, so that attaching or removing the instrument is easy. The urine receptacles are of the usual conical test-tube shape, held in the ordinary aluminium guards; they have a capacity of ten cubic centimetres and one of them is graduated in tenths of a cubic centimetre.



The supporting frame merely slips upon the shaft and engages with the ring by means of a steady pin; no bayonet catch or screw action is found necessary. A soft rubber ring acts as a buffer in case the tubes drop too suddenly. In practice, however, it is found that this ring is not really needed, as the tubes drop slowly and freely into the vertical without any tendency to swing inside and strike the frame. A metal guard covers the gears and shaft, and makes it impossible for fluid to be thrown into them.

Each turn of the handle gives twenty-three revolutions of the main shaft, so that a constant speed of from one thousand five hundred to two thousand five hundred revolutions is provided for; this lower limit here mentioned has been found amply sufficient for all urinary, water, and milk analyses.

252 North Twelfth Street.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 24, 1897:

	Cases.	Deaths.
Tuberculosis	180	97
Typhoid fever	13	9
Scarlet fever	83	6
Cerebro-spinal meningitis	2	4
Measles	148	5
Diphtheria	184	22
Laryngeal diphtheria (croup)	5	2
Chicken-pox	6	0
Small-pox	0	1

Study of the American Medicinal Flora.—The Pan-American Medical Congress, at its meeting held in the City of Mexico in November, 1896, took steps to institute a systematic study of the American medicinal flora, through the medium of a general commission and of special subcommissions, the latter to be organized in the several countries. The subcommission for the United States has been formed, and consists of Dr. Valery Havard, U. S. A., chairman; Mr. Frederick V. Coville, botanist of the United States department of agriculture; Dr. C. F. Millspaugh, curator of the botanical department of the Field Columbian Museum, Chicago; Dr. Charles Mohr, State botanist of Alabama; Dr. W. P. Wilson, director of the Philadelphia Commercial Museums; and Prof. H. H. Rusby, of the New York College of Pharmacy. This subcommission solicits information concerning the medicinal plants of the United States from every one in a position to accord it. The principal points of study are as follows: 1. Local names. 2. Local uses, together with historical facts. 3. Geographical distribution and degree of abundance in the wild state. 4. Is the plant collected for market, and if so: (*a*) At what season of the year? (*b*) To how great an extent? (*c*) How prepared for market? (*d*) What is the effect of such collection upon the wild supply? (*e*) What price does it bring? (*f*) Is the industry profitable? 5. Is the plant, or has it ever been, cultivated? If so give all information on the subject, particularly as to whether such supplies are of superior quality and whether the industry has proved profitable. 6. If not cultivated, present facts concerning the life history of the plant which might aid in determining methods of cultivation. 7. Is the drug subjected to substitution or adulteration? If so give information as to the plants used for this purpose. While it is not expected that many persons will be able to contribute information on all these points concerning any plant, it is hoped that a large number of persons will be willing to communicate such partial knowledge as they possess. It is not the important or standard drugs alone concerning which information is sought. The subcommission desires to compile a complete list of the plants which have been used medicinally, however trivial such use may be. It also desires to collect all obtainable information — historical, scientific, and economic — concerning our native and naturalized plants of this class, and to this end invites the cooperation of all persons interested. Poisonous plants of all kinds come within the scope of the inquiry, whether producing dangerous symptoms in man, or simply skin inflammation, or, as "loco-weeds," being deleterious to horses, cattle, and sheep. In this respect, the general reputation of a plant is not so much desired as the particulars of cases of poisoning actually seen or heard from reliable observers. It is believed that much interesting knowledge can be obtained from Indians, Mexicans, and halfbreeds, and that consequently Indian agencies and reservations are particularly favorable fields for investigation. Such knowledge will be most acceptable when based upon known facts or experiments. In order to assist in the study of the habits, properties, and uses of medicinal plants, the subcommission undertakes to furnish the name of any plant specimen received, together with any desired information available. Owing to the diversity in the common names of many plants, it will be necessary for reports, when not furnished by botanists or others qualified to state the botanical names with certainty, to accompany the same with some specimen of the plant sufficient for its identification. While the subcommission will endeavor to determine the plant from any portion of it which may be sent, it should be appreciated that the labor of identification is very greatly decreased, and its usefulness increased, by the possession of complete material—that is, leaf, flower, and fruit, and in the case of small plants, the underground portion also. It is best to dry such specimens thoroughly, in a flat condition under pressure, before mailing. While any convenient means for accomplishing this result may be employed, the following procedure is recommended: Select a flowering or fruiting branch, as the case may be, which when pressed shall not exceed sixteen inches in length by ten inches in width. If the plant be an herb two or three feet high, it may be doubled to bring it within these measurements. If it possess root leaves, some of these should be included. Lay the specimen flat in a fold of newspaper, and place this in a pile of newspapers, carpet felting, or some other form of paper which readily absorbs moisture, and place the pile in a dry place under a pressure of about twenty or thirty

pounds, sufficient to keep the leaves from wrinkling as they dry. If several specimens are pressed at the same time, each is to be separated from the others by three or four folded newspapers or an equivalent in other kinds of paper. In from twelve to twenty-four hours these papers will be found saturated with the absorbed moisture, and the fold containing the specimen should be transferred to dry ones. This change should be repeated for from two to five days, according to the state of the weather, the place where the drying is done, the fleshiness of the specimens, etc. The best way to secure the required pressure is by means of a pair of strong straps, though weights will do. The best place for drying is beside a hot kitchen range. When dry the specimens should be mailed between cardboards or some other light but stiff materials which will not bend in transit. It is a most important matter that the name and address of the sender should be attached to the package, and that the specimens, if more than one, should be numbered, the sender retaining also specimens bearing the same number, to facilitate any correspondence which may follow. The subcommission requests that, so far as practicable, all plants sent be represented by at least four specimens. All packages and correspondence should be addressed to the Smithsonian Institution, Washington, D. C., and marked on the outside, "Medicinal Plants, for the United States National Museum." Franks which will carry specimens, when of suitable size, together with descriptions and notes, free of postage through the mails, will be forwarded upon application. Should an object be too large for transmission by mail, the sender is requested, before shipping it, to notify the institution, in order that a proper authorization for its shipment may be made out.

The Founder of Guy's Hospital.—Guy, the founder of Guy's Hospital in London, was as parsimonious in private life as he was munificent in public. A good story illustrative of this is told of him in connection with John Hopkins, one of his contemporaries who was nicknamed Vulture Hopkins, on account of his rapacious mode of acquiring his immense wealth. On one occasion he paid a visit to Guy, who, on Hopkins entering his room, lighted a farthing candle. Hopkins, on being asked the reason of his visit, said: "I have been told that you, sir, are better versed in the prudent and necessary art of saving than any man living, and I therefore wait on you for a lesson in frugality. I have always regarded myself as an adept in this matter, but I am told you excel me." "Oh," replied Guy, "if that is all you came to talk about, we can discuss the matter in the dark;" and thereupon he blew out the candle. Struck with this example of economy, Hopkins acknowledged that he had met his superior in thrift.

Treatment of the Wounded in the Græco-Turkish War.—Dr. Zavitziano sends to Surgeon-General Wyman, of the Marine Hospital service, a distressing picture of incompetence and cowardice displayed by the surgeons of the Greek army and Red Cross Society. It is interesting as well as sad, he writes, to note that the Greeks, who as individuals are so skilful and capable of doing so many good things, when assembled and forming a government are incapable of doing anything. The Greek Red Cross, for instance, was not of any assistance, and nearly the same may be said of the sanitary service of the Greek army, for the wounded, as well as the refugees, have rather suffered from them. The wounded and the refugees have been attended with efficiency by private physicians, by private persons, and by rich Greeks, who have substituted what the Greek government, the Greek Red Cross, and the sanitary service of the army have not been able to do. Before the beginning of the war the Greek Red Cross had established five hospitals for wounded, one at each of the following places: Volo, Larissa, Tyrnavo, Carvassara, and Arta. Each of these hospitals was fitted for fifty beds. The hospital at Larissa was complete, and it was made the headquarters of the Red Cross. All the Red Cross material had been accumulated there, and according to the lowest calculation there was more than $20,000 worth of material included in the armamentarium. The wounded of the Greek army have been deprived of this material, as the hospitals of Larissa and Tyrnavo were abandoned to the Turks by the physicians, who, Dr. Zavitziano says, had no sense of their duty or they had forgotten it at that moment. The sole excuse they could offer was that the Turkish army had fired on the Red Cross hospital at Arta. As a consequence of the above-mentioned cowardly action of the physicians of the Red Cross, as well as of the army surgeons, the poor wounded were left without any aid; but, thanks to civilian physicians, everything has been re-established, and the wounded, as well as the refugees, have been attended to and helped. Greek physicians from abroad have arrived in Greece in order to serve their country, and, thanks to them, the wounded have been attended. A Greek lady, whose example has been followed by others, established a floating hospital on a steamship, by which the wounded were carried from the seaports, near the battlefields, to Athens, Piræus, Khalcis, Patras, Cephalonia, and Corfu, where well-organized hospitals exist. All the wounded, except those whose condition did not allow them to be carried, and they are no more than two hundred, have been transported to the above-mentioned cities, where the populace does all that it is possible to do in order to relieve their sufferings. There are in Athens four large hospitals and five or six public or private buildings and houses transformed into hospitals. The latter are maintained by private contribution. There are numerous schools as well as large private houses on which a Red Cross flag is hoisted, where the victims of the war, or rather of the Greek government, are attended. It has been observed that the wounded Turks are constantly visited by the German minister, who visits only them.

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the United States Marine Hospital service during the week ended July 24, 1897:

SMALL-POX UNITED STATES.

		Cases.	Deaths.
Toledo, Ohio	June 1st to 31st	..	1
Brooklyn, N. Y.	July 10th to 17th	1	
Memphis, Tenn	July 10th to 17th	1	
New York, N. Y.	July 10th to 17th	..	1
Pensacola, Fla	July 3d to 11th	1 case Variloid.	

SMALL-POX FOREIGN.

Calcutta, India	May 29th to June 4th	..	2
Glasgow, Scotland	June 26th to July 3d	1	
Hong-Kong, China	May 25th to June 12th	..	1
Madras, India	May 28th to June 11th	..	5
Madrid, Spain	June 23d to 30th	..	3
Manaos, Brazil	June 12th to 26th	103	12
Sagua la Grande, Cuba	July 3d to 10th	124	4
Moscow, Russia	June 16th to 26th	1	1
Nagasaki, Japan	June 24th to 25th	8	1
Odessa, Russia	June 26th to July 3	2	
St. Petersburg, Russia	July 3d to 10th	10	3
Warsaw, Russia	June 26th to July 3d	..	1

CHOLERA

Bombay, India	June 8th to 22d	..	12
Calcutta, India	May 29th to June 5	..	29
Madras, India	June 5th to 11th	..	2

YELLOW FEVER

Habana, Cuba	July 8th to 15th	..	40
Panama, Colombia	June 23d to July 3d	12	7
Cardenas, Cuba	July 3d to 10th	3	
Cienfuegos, Cuba	July 9th to 10th	..	6
Sagua la Grande, Cuba	July 3d to 10th	40	3

PLAGUE.

Formosa, Japan	June 9th to 27th	91	
Bombay, India	June 8th to 22d	..	45

LEPROSY.

Jersey City, N. J.	July 18th	..	1

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Original Articles.

IS PAIN A VALUABLE SIGN IN THE DIAGNOSIS OF CANCER OF THE BREAST?

BY CHARLES N. DOWD, M.D.,

NEW YORK,

ATTENDING SURGEON TO THE NEW YORK CANCER HOSPITAL.

THERE is still a prevalent belief that cancer of the breast is painful in all its stages. Physicians as well as patients continually express surprise when such cancers have reached an advanced stage without pain; and even in one of our most recent systems of surgery the article on mammary tumors conveys the impression that we may expect a woman to be suffering pain if she has a cancer of the breast. This belief is probably due to the failure to discriminate between the early and late symptoms of the disease. In the late stages, after surrounding structures are pressed upon or ulceration exists, more or less pain is generally felt; but in the early stages it is seldom present.

In order to study the relationship between pain and beginning cancer, and to draw attention anew to the fact that tumors should not be considered bland because they are painless, I have examined the histories of the patients who have been treated in the New York Cancer Hospital for mammary cancer since January, 1889. In the history blanks there is a space for recording the presence or absence of pain and any other pertinent facts concerning this symptom, and this has usually been filled in with care.

The total number of cases was three hundred and thirty-one, in most of them the disease was far advanced.

In sixty-three cases pain was denied in any stage of the disease.

In fifty-six cases pain was not mentioned.

In one hundred and ninety cases pain came in the late stages of the disease after the surrounding structures were pressed upon.

In twenty cases pain was present in the early stages of the disease.

Hence in only 6.04 per cent. of the cases is there a record of pain at the time when the diagnosis should have been made in order to secure the best results from operation. Even in these few cases the pain was of such a character as to give little alarm to the patients.

In five instances it followed bruises.

In one instance it was caused by what was supposed to be a boil.

In seven there were only slight shooting or aching pains, which hardly attracted attention at the time.

In six there were severe pains at the beginning, which intermitted more or less afterward.

These six cases represented the greatest amount of early pain which was recorded in the entire series of three hundred and thirty-one patients. Yet the average duration of their disease had been twenty months when they were admitted to the hospital—an indication that the pain had not been very troublesome, else it would have been relieved sooner. People will not endure severe pain for twenty months when it can be so easily relieved.

Even in the later stages of the disease pain was not a prominent symptom. Many of the patients who denied pain at any time had advanced growths; and in the group of one hundred and ninety patients who had pain late in the disease there was seldom much suffering from this cause. The records usually say: "Occasional shooting pains," or "Dull pain from time to time." I have seen severe pain accompanying cancer of the breast only when there was abscess or phlegmon in addition to the cancer, or when axillary pressure caused œdema of the arm.

The explanation of this absence of pain is to be found in the peculiar nature of the growth. As the cancer grows it replaces the neighboring normal structures; it does not distend them, as acute exudative inflammation does. Cancerous, tuberculous, and syphilitic inflammation are similar in this respect, and all three usually progress without much pain; while inflammation in which there is an exudation of fluid under high pressure is very painful.

Abscess of the breast, acute articular rheumatism, and a "felon" illustrate this point, when contrasted with beginning cancer of the breast, tuberculous joint disease, and syphilitic dactylitis. The first three are very painful; the last three seldom give pain, excepting when motion or trauma brings pressure on nerve endings which are still sensitive.

Growing fibrous tumors in the breast are more likely to give pain than is growing cancer. There were thirty-seven such treated at the hospital during the time mentioned, and nineteen are recorded as painful in the early stages, the pain being usually of a sharp shooting character, frequently most severe at or about menstruation. This, indicates that, if a small nodule is painful, it is more likely to be fibrous than cancerous.

From a practical standpoint this freedom from pain in beginning cancer is most unfortunate, as people are not apt to seek medical or surgical advice about anything which seems so unimportant. We may well believe that in many instances they do not themselves know of their malady until it has existed for some time. We are, however, doing our best in the matter if we endeavor to call general attention to the real condition.

Vaginal Cystocele.—The operation for this condition, as performed by Dr. De Marsi, is described in the *Gazzetta degli Ospedali*, March, 1897, as follows: He first makes a longitudinal median incision through the mucous and submucous tissues of the anterior vaginal wall, extending from the fornix to the suburethral tuberculum, if necessary, and then two small transverse incisions, perpendicular to the first incision, at each end of it, and raises the square side flaps thus formed. He next sutures the two attached edges of these square side flaps together, and reduces the prolapsus, completing the operation by suturing the free edges of the flaps. By this means a solid foundation for the vaginal wall is secured and threatening prolapsus uteri averted. The same process could be applied to rectocele, with slight variations.

PERSONAL EXPERIENCES IN LAPAROTOMY.

BY MARY A. DIXON JONES, M.D.

My cases come within the period 1879 to 1889. I will now give my work, all that I have attempted or performed. My first case was that of a patient brought me from Maine by her husband; the tubes and ovaries were wrapped in a mass of disease. At the time it occurred to me that as these organs were incurable, and could be of no possible utility, they should be removed. This was the thought that forced itself upon me. I had not then heard of "Tait's operation" or of "oöphorectomy." So entirely engrossed had I been with my own practice that my medical journals were unopened, nor did I have time to think of the advance of surgery in any direction; but this procedure seemed so right, so self-evident, that I should have proposed it, had not attention, as I learned, been already called to it.

I invited Prof. B. F. Dawson to see this patient with me, and on the day of the operation, imagining she might have a better chance if Professor Dawson performed it, I invited him to do so, and he kindly complied. So now, when it comes to the arithmetic of statistics, I cannot put this, my first patient, on my list. Dr. Dawson reported the case to the New York Obstetrical Society[1] and before his class in the New York Post-Graduate School, presenting the specimens on each occasion.

My first laparotomy was performed October 18, 1884. The patient was brought to me from Connecticut by her parents, in June, 1884. She had been an invalid seven or more years—once she did not leave her bed for a period of eighteen months. After examination I informed the parents that I did not believe any amount of treatment would restore the organs to health, and that nothing would cure or relieve the patient but the removal of the hopelessly diseased structures. Still I advised treatment to see if an operation could not be avoided, or at least to get the patient in better condition. Careful and continuous treatment I gave this patient for four months; she may have improved somewhat in general condition, but I believe the organs were growing worse all the time, and in my report of the case I said the operation should have been performed years before; and now I say of her, as I can say of many or most of the patients in this list, that if she had not had the operation, she would long since have been in her grave.

My second case of laparotomy was for bleeding myoma. The patient came from Maine to see me, March, 1885, and on May 19th I removed the uterine appendages. She made a most happy recovery. Subsequently with the microscope I studied carefully the tubes and ovaries of this patient, to see what pathological changes might have taken place. In the tubes I found chronic interstitial salpingitis, and the ovaries were in acute and subacute inflammation. It was in the ovaries of this patient that I for the second time recognized diseased ova. In other cases of removal of the uterine appendages for myoma, I have made a thorough study of the pathological conditions of the appendages, and in every instance have found in them profound and chronic disease; so that I remarked, in an article in the *New York Medical Journal* of September 1, 1888, that in cases of fibroid of the uterus the tubes and ovaries were always so diseased that on that account their removal was demanded; and that probably this disease of the appendages caused the development of the myoma. Of this I have, from subsequent research, become more convinced.

[1] May 15, 1885. American Journal of Obstetrics, 1885, p. 1,192.

My third case of laparotomy was also for a helpless invalid, who for fifteen years had been suffering and had been refused admission into two hospitals, having been informed at one institution that "the hospital did not receive incurables." I admitted the patient into my private hospital. She made a most excellent recovery.

Every patient in the following list of laparotomies has an interesting history. The cases are from my private practice, from two dispensary clinics, and six patients were sent me by physicians. One of the dispensaries referred to had from eight to twenty patients daily, the other had from twenty to forty-five; and, what is a singular circumstance, in the first dispensary I seldom found a case of "pus tubes," while in the second I had them every day, and have counted in one clinic as many as seventeen patients with this disease. We could not possibly operate on all who needed operation, so for my cases I selected the patients who seemed physically to be in the most serious or dangerous conditions; and thus it transpired that I, without understanding the disease, had many cases of endothelioma of the ovary—a disease which I was first to recognize, and which at the time I submitted to the kindly consideration of the medical profession. Few diseases make such serious inroads upon the system, cause more pain, or have more pronounced symptoms. There are marked emaciation and, in advanced cases, almost the cadaveric hue of cancer or consumption, and a general cachexy of the system. The first patient in whom I recognized this disease was one on whom I had operated on June 25, 1885. Dr. Charles Heitzmann, in looking at the long protoplasmic masses of this growth, at first pronounced it "sarcoma," and subsequently said: "We shall have to term it either endothelioma or alveolar sarcoma."

The next case in which I found this disease was that of a patient on whom I operated for the removal of the uterine appendages, May 10, 1887 (Case No. 23). This patient was so emaciated, so cadaveric, that I at first thought she had phthisis, or, more likely, cancer of the liver. I presented the uterine appendages before the New York Pathological Society the same month, and, subsequently, microscopical slides of the growth. Also, Prof. Mitchell Prudden, then president of the society, at my request took a small section from each of the ovaries of this patient, and had them mounted in his laboratory. He wrote me it was "carcinoma," also sending a slide so labelled. I sent a microscopical slide of these ovaries, mounted by Dr. Louis Heitzmann, to Professor Waldeyer, of Berlin. He replied, October 18, 1887, that "the growth is carcinoma;" and certainly, in studying the minute anatomy of this growth I could readily believe it might be some form of cancer. I am still more impressed with this when I see the effects of the disease upon the system, as I said in an article in the *New York Medical Journal*, September, 1889: "When we look at this rapidly growing formation and the great masses of granules, the impression forces itself upon us that it may be malignant. Future investigation may prove it so. The cancer epithelia do not multiply more rapidly, or destroy the tissues more surely, or seem more threatening or monstrous in their appearance and growth."

While in this list I have included all my cases of laparotomy, whether for splenectomy, hysterectomy, or ovariotomy, yet most of the operations were for the removal of "diseased uterine appendages." Some eminent surgeons, as they have thought proper, have removed the uterine appendages for "ovaralgia," "dysmenorrhœa," and various nerve conditions; but I never could accept this idea. I have all the time maintained that whatever might be the symptoms, local or constitutional, the tubes and ovaries should not be re-

moved except for profound disease of the organs themselves, when they are incapable of being restored to health, and when their remaining becomes a positive injury to the system. I said in 1888,[1] and now repeat: "I have never operated on a case but I had full and substantial reasons to diagnose incurable disease of the appendages;" in the same article declaring: "I would not remove the uterine appendages for mental or neurotic diseases unless I believed the appendages were diseased," and the disease absolutely demanded their removal. I have even hesitated in some instances to remove the uterine appendages when they were profoundly diseased, and when there were indications even apparently necessitating an immediate operation. A patient, twenty-three years old, entered the Woman's Hospital, July 5, 1887. One ovary was enlarged to the size of a small orange and bound in on all sides by adhesions; the tubes gave evidence of pyosalpingitis. But this patient had had a child thirteen months before! If these organs are capable of these functions, why not leave them? Any one might have known that with conditions existing as they were in this woman it was impossible for conception to take place; but I wanted to give her the millionth part of a chance, so sincerely do I congratulate a woman who has children. The patient was in the hospital forty-six days and everything was done to improve her condition: she seemed in many respects much better and comparatively comfortable, so on the 20th of August I dismissed her from the hospital and sent her home. As soon as she commenced to be on her feet and go around, she realized that her sufferings were just the same, and just as intolerable. She returned to the hospital three days afterward, and again begged that the operation might be performed. In due time it was done. This is Case No. 33. The patient was in a dangerous condition, and should, when first in the hospital, have been operated upon without delay. Not only was there destructive disease of the tubes, but a blood cyst in the left ovary was in immediate danger of rupturing, with possibly fatal results. Besides, to show still more plainly how futile was the delay, every ovum in both of her ovaries was in helpless ruin.

Another patient to whom I tried in the same way to give the possibility of a chance—subsequent events proving it was quite as useless—entered the Woman's Hospital of Brooklyn, March 21, 1888. Hoping to save the tubes and ovaries, I gave her special local and constitutional treatment. She improved, and we dismissed her April 17, 1888. After returning home she realized that her trouble was still there, and of her own accord she returned to the hospital in four days, and again requested that the diseased organs be removed. This is Case No. 59. In this instance also I realized that it was not only a useless but a dangerous delay.

In September, 1888, Dr. B——, of Bridgeport, Conn., brought a young woman, twenty-six years old, married three years, and without children. In my report of this case, in the *Pittsburg Medical Review*,[2] October, 1889, I said: "It seemed so extremely sad for one so young and so lately married to be deprived of all chance of the sacred privilege of motherhood, that I suggested to Dr. B—— that the patient return home and have the cervix dilated and the anteflexion corrected, and thus give her, if possible, a chance." The patient at once objected to any delay, insisted upon immediate relief, and the physician added: "Treatment has been tried." This is Case No. 69. There was immediate demand for the operation. The pathological conditions showed that it should have been done without delay, even before the time the patient visited me.

In every case that I have operated on I have, in studying the pathological specimens removed, become more impressed that not only was there, in each instance, a necessity for the operation, but in each one it should have been done at an earlier period than it was performed. The great danger in these conditions is delay; and this delay is an injustice and a loss to the patient. As to delaying these operations for a possible conception, in every one of these patients, as was subsequently demonstrated, all capability of any physiological functions of the tubes and ovaries was destroyed by the existing disease; and in every one this complete destruction was still further emphasized by finding in the ovaries of each, as far as examined, only diseased and ruined ova.

In some, even of young women, I found complete destruction of these important structures, not one egg in either ovary; thus giving new proof of and new insight into what I said in 1886,[1] and repeated September 28, 1889:[2] "The disease that caused the suffering has also produced a profound sterility." After careful study into the pathology of every specimen I have removed, I again repeat, as was my impression on the first examination of the various patients, that not only was there a necessity for the operation, and that in each case the operation should have been done at an earlier period, but in every instance, as I told the patient, there was no capability or possibility of conception. My stereotyped expression, repeated to many, was: "With or without the operation, you can't have children." The operations were done to save life, and if possible to restore to health and active usefulness.

Of all the cases, there were of pyosalpingitis seventy-nine. Not only did the tubes contain pus, but their walls, as I afterward demonstrated, were more or less destroyed by suppurative inflammation. The ovaries were equally diseased. These all involved difficult and dangerous operations.

There were two operations for cystoma, or ovariotomy. Probably these were the least difficult of all the operations in the list; even the removal of a cystoma that contained over sixty pounds of fluid (Case No. 89) was in no way a difficult operation and was performed with great ease and celerity. Yet a writer uses this expression:[3] "I have long entertained the opinion that ovariotomy is the most difficult operation in the whole field of surgery." I must differ from the writer, for I have long maintained the belief that ovariotomy generally is one of the least difficult operations of abdominal surgery. Duncan says:[4] "It cannot be too strongly enforced that removal of the appendages for chronic disease is, in most cases, much more difficult than performing ovariotomy." Dr. G. Bantock says:[5] "Difficulties far exceeding those of nine out of ten of the ordinary run of ovariotomy." Sir Spencer Wells on the same occasion: "It is more difficult than ordinary ovariotomy." Dr. A. Martin, of Berlin: "The operation is not only difficult, but dangerous." Lawson Tait: "It is in almost all instances a difficult operation, sometimes one of exceeding difficulty." Dr. L. S. McMurtry[6] gives his testimony: "To remove pus tubes and adherent ovaries is among the most severe tasks of operative surgery." And Dr. Thomas Keith, nearly thirty years before, said: "There is no

[1] American Journal of Obstetrics, February, 1888, p. 165.
[2] Page 301.

[1] MEDICAL RECORD, August 21, 1886.
[2] New York Medical Journal, September 28, 1889.
[3] A. J. C. Skene: Proceedings of the Medical Society of the County of Kings, June, 1883, p. 222. "Diseases of Women," p. 510, 1888.
[4] British Medical Journal, p. 104.
[5] Transactions of the International Congress, 1881.
[6] Southern Surgical and Gynæcological Transactions, 1889, p. 202.

mystery in ovariotomy; it is not a difficult operation."

But certainly there is often great difficulty, and mystery too, in leading out diseased uterine appendages from a complexity of dense adhesions. So difficult is this that Dr. Thomas Savage, of Birmingham, said[1] that in five of his forty cases he was unable to do anything beyond the simple abdominal section, on account of the strength and character of the adhesions; adding: "In others I was obliged to leave behind a part of one ovary at least." Dr. C. E. Penrose, in reporting eleven cases, remarked: "In one case I found it impossible to remove the left tube and ovary, they were so firmly adherent." A similar record has been made by many great surgeons.

In this list there was one case of cancer, No. 55, carcinoma on the floor of the pelvis,[2] and the cancerous material had infiltrated the tubes and ovaries. At the time of the operation, March 19, 1888, so convinced was I of the malignancy of the disease and the hopelessness of the case, that immediately I informed the husband that the patient probably would not live three days. But she did so well and made so good a recovery that I dismissed the idea of malignancy until the following December, when, in due course, studying the pathology of this specimen, I found that it was not only cancer, but cancer of the most malignant type. In the specimen there were really three forms of cancer—scirrhous, adenoid, and medullary.

Further, in studying this pathological specimen, it was seen for the first time and clearly demonstrated that the indifferent or medullary corpuscles were changing to large polyhedral epithelia, and forming cancer nests. This change of inflammatory corpuscles to cancer epithelia had never before, so far as I know, been observed or mentioned. It was a startling thought.

Also in this specimen there was revealed the interesting fact that the lymph vessels carry the cancer epithelia. This had long been supposed to be the case, but so far as I know had never before been verified or demonstrated. Under high powers of the microscope the lymph vessels were clearly seen to be largely dilated and carrying their burden of cancer epithelia. It was a revelation!—marvellous!—to see these vessels so crowded and so infinite in number!

Another fact to be noted: This patient had suffered for years with the continued distress and irritation of diseased uterine appendages. If, ten years previously, these organs—even then profoundly diseased—had been removed, the unfortunate woman might have been saved not only the infection of her system from the diseased tubes and ovaries, but the subsequent development of cancer.

Dermoid cysts, one case (No. 34). This was one of the most difficult and dangerous of the whole list of operations. The case was reported to and the specimens were presented before the New York Pathological Society, September 28, 1887. Dr. William Goodell said:[3] "In my experience dermoid cysts are very apt to have firm and extensive attachments, which make their removal far from easy." Dr. Thomas Keith reports a dermoid cyst;[4] so far as I could make out the conditions, they were very similar in every respect to those in my case—ovaries in each universally adherent. The operation performed by Dr. Keith lasted three and one-half hours, and the patient died thirty-six hours later. In my case of dermoid cyst the patient made a rapid recovery, and subsequently had good health.

The number of cases of abscesses of or connected with the ovaries was twenty-eight. Dr. Lawson Tait said: "In a majority of instances probably death occurs from the rupture of the abscess into the peritoneum." He reports[1] one case before the British Gynæcological Society, and says: "Operation extremely difficult, and hemorrhage severe."

Intraligamentous cysts, one case (No. 62). Dr. Goodell says:[2] "Intraligamentous cysts present grievous complications, which tax the pluck and skill of the operator to the utmost." Dr. Paul F. Mundé says:[3] "They are to me the most formidable tumors of the uterine appendages; three out of five deaths after laparotomy occurred in intraligamentous cysts." My patient (No. 62) made a rapid recovery.

Endothelioma, twenty-two cases. This is a more frequent and a more serious disease than many imagine, not only causing much suffering but being destructive to health. I believe an untold number of women have died from this disease or from the complications arising therefrom.

Of hæmatoma, the outcome of endothelioma, there are ten cases. Dr. Howard Kelly, before the Obstetrical Society of Philadelphia,[4] exhibited a specimen of hæmatoma of the ovary with adherent Fallopian tubes, remarking: "The hæmatoma is about the size and shape of a large Spanish chestnut. The indications for operative interference, after I had made my diagnosis, were greater than in the case of any large ovarian cyst I have ever seen, and the prospects and results of any form of palliation were futile. Almost the whole of this large ovary is filled with a bloody cyst." Dr. A. P. Dudley reported to the New York Pathological Society[5] a hæmatoma of the ovary, occupying nearly the entire organ, for which previous to its removal he had "for a year adopted every variety of general internal treatment, with external applications, but the woman was not in the least relieved." Dr. Boldt has reported a rupture of hæmatoma, or blood cyst, and states that but for immediate operation death would have ensued. Dr. R. H. Reed says:[6] "Early surgical relief is the only safe and reliable course of treatment." Dr. R. A. Murray reported a hæmatoma of both ovaries,[7] saying: "There was an extreme amount of adhesions, which rendered the operation most difficult, prolonging it three hours."

Gyromatous cysts, eight cases. Gyroma is another disease which I was first to recognize. These cysts have hard, firm walls, sometimes in waxy degeneration, or in intense inflammation, or again are being reduced to firm fibrous connective tissue—in any state necessarily compressing delicate nerve fibre, and giving rise to various neuroses and reflex irritations.[8] As I said in the *New York Medical Journal*, May 10, 1890: "The irritation of these hard, firm growths amid the delicate tissues of the ovary not only causes pain, but, if anything would produce cancer of the ovary, the continued irritation of these nodular masses would seem to be sufficient."

Blood cysts, also the outcome of endothelioma, twelve in number. From their nature, growth, and mode of development, blood cysts are most serious conditions, constantly causing great pain and distress, and ever there is an increasing danger of their rupturing into the peritoneal cavity, possibly with fatal results.

In every case of blood cyst that I have had, I have carefully examined with the microscope all other portions of the ovary, and in every instance have found all profoundly diseased, no normal tissue in

[1] British Medical Journal, October 19, 1878, p. 590.
MEDICAL RECORD, March 11, 1893.
Medical News, March 11, 1885, p. 316.
[4] British Medical Journal, October 19, 1878, p. 591.

[1] British Medical Journal, May 8, 1886.
[2] Medical News, January 29, 1887.
American Journal of Obstetrics, January, 1888.
[3] February 3, 1886. October 26, 1887.
[4] Cincinnati Lancet-Clinic, January 28, 1890, p. 775.
[5] MEDICAL RECORD, January 15, 1887, p. 70.
[6] American Journal of Obstetrics, February, 1882.

No.	Name	Age	State	Number of Cases	Date of Operation	Place	Pathological Conditions	Operation.	Who Present	Adhesions	Result: Recovery or Death	Remarks	Where Reported
1	Miss V. Coming				Oct. 10, 1884	Her home	Pyo-interstitial salpingitis. Uterus in extreme retroversion; ovaries enlarged six or eight times their normal size, dislocated downward, and exceedingly tender, intense oophoritis, in many places commencing suppuration; ova diseased and ruined	Removal of uterine appendages	Drs. W. G. Wylie, J. H. H. Burge, C. N. D. Jones, J. Merrit;	Yes	R.	The patient said she had been sick for seven years; once did not leave her bed for eighteen months. Suffered with extreme pain. It would have been better for the patient if these diseased organs had been removed years before	N. Y. Med. Rec., April 16, 1892; N. Y. Med. Jour., May 14, 1892; Buff. Med. and Surg. Jour., Nov., 1892
2	Mrs. O.		M.		May 25, 1885	My private hospital	Bleeding myoma. Intramural and two subperitoneal fibroids, salpingitis; ovaries more than three times their normal size, and projecting from each one a cyst the size of a hen's egg; acute and subacute oophoritis; few ova and these diseased.	do.	Drs. C. C. Lee, C. N. D. Jones, S. King, F. J. C. Minnard.	Yes	R.	The patient made a rapid recovery; sixth day, pulse and temperature normal; twenty fifth day she left the hospital. When last heard from she was in excellent health.	N. Y. Med. Rec., Aug. 20, 1888
3	Mrs. S. McN.		S.		June 1, 1885	Private hospital	Endothelioma, or alveolar sarcoma of the ovary. Tubes dilated and closed at their unbalanced extremity. For fifteen years the patient had suffered with lacinating pains in the pelvis.	do.	Drs. W. G. Wylie, C. N. D. Jones, S. King	Slight	R.	Many thought the patient would not survive the operation, but after it was performed she gained rapidly in health, strength, and vigor.	N. Y. Med. Rec., Aug. 20, 1885; Buff. Med. and Surg. Jour., Nov., 1892; N. Y. Med. Jour., Sept. 25, 1886.
4	Mrs. H.		M.		Oct. 1, 1885		Pyo-interstitial salpingitis. The transparent attenuated walls of the pus tubes seemed ready to burst; they were bound by firm adhesions to the enlarged and diseased ovaries.	do.	Drs. W. G. Wylie, C. N. D. Jones.	Yes	R.	The patient had constant pain and soreness in the pelvis; for seven years she had suffered; she made an excellent recovery. The husband wrote that "he could not have imagined she would ever be so well."	N. Y. Med. Rec., Aug. 20, 1886
5	Mrs. McK.		M.		Dec. 10, 1885	Ib.	Pyo-interstitial salpingitis. Ovaries small, hard, and nodular, almost the whole normal structure was replaced by cicatrical tissue; endothelioma of the ovary, abscess near the peritoneum.	do.	Drs. C. N. D. Jones, Carey, F. J. C. Minnard.	Yes	R.	Epileptic attacks at every monthly period, patient made an excellent recovery, was up and around at the end of the second week and when last heard from had had no return of the spasms.	do.
6	Mrs. D.		M.		Jan. 1886	do.	Pyo-interstitial salpingitis. In the left ovary an abscess occupying nearly the whole structure, right ovary in a state of intense oophoritis.	do.	Drs. W. G. Wylie, Jones, Ingalls.	Yes	R.	Patient wrote March 2, 1886: "I am feeling perfectly well, never felt better."	do.
7	Mrs.		M.				Pyo-interstitial salpingitis. Each tube was folded and had two distinct sets of fimbriæ, ovaries atrophied and in a state of acute and subacute oophoritis.	do.	Drs. C. N. D. Jones and Ingalls.	Yes	R.	For patient had suffered five years great pain, and disease; not able to attend to her household duties, she made an excellent recovery from the operation, third day, pulse and temperature normal, and since she has had excellent health.	do.
8	Miss L. S.		S.		March 1, 1886		Uterus anteflexed and bound down by adhesions, tubes in a state of salpingitis; ovaries in acute inflammation, the right one contained a hæmatoma.	do.	Drs. Jones and Ingalls	Yes	R.	The patient had been suffering for five years; the operation was attended with great difficulty on account of firm and dense adhesions.	do.
9	Miss E.		S.		April 1, 1886	Ib.	Pyosalpingitis. Abscess in right ovary; oophoritis, waxy degeneration of the arteries.	do.	do.	Yes	R.	For five years patient had suffered with almost constant pain in the pelvis; by operation she was relieved of her suffering and restored to health.	do.
10	Mrs. C.		M.		June 29, 1886	Woman's Hospital of Brooklyn	Pyo-interstitial salpingitis. Ovaries enlarged to three and one-half inches in diameter, each one containing a blood cyst, the rest of the tissue in intense inflammation; in many sections no ova, and the few found were in intense inflammation or waxy degeneration.	do.	Drs. C. N. D. Jones and Caroline Pease			There were adhesions, and tubes were bound down by dense firm adhesions; the patient made an excellent recovery.	N. Y. Med. Rec., Aug. 28, 1886, p. 252.
11	Miss G.		S.		July, 1886	do.	Chronic interstitial salpingitis. Peritonitis; suppurative oophoritis; destruction of the ova.	do.	Drs. C. N. D. Jones and Samuel King	Yes	R.	The patient suffered great pain, was unable to work; after the operation she had excellent health.	
12	Mrs. S.		M.		July, 1886	do.	The patient was brought to the Woman's Hospital with septic peritonitis; the tubes contained pus, and the ovaries were in suppuration.	do.		Yes.	D.	There was apparently no hope when she was brought to the hospital; her whole system was septic.	
13	Miss S.		S.		Jan. 1887	do.	The right ovary containing an abscess was enlarged to three inches in diameter and dislocated low down in Douglas cul-de-sac; ectasia of the lymph vessels; much of the stroma was transformed into a fine globular hyaline mass; ova were destroyed.	do.		Yes	R.	Before the operation the patient suffered constant and intense pain in the pelvis and was not able to perform her daily duties; after the operation she was well and vigorous; third day, pulse and temperature normal.	N. Y. Path. Soc., March, 1887; Am. Jour. Obst., Feb., 1888.
14	Miss Kattie S.		S.		Jan. 26, 1887	do.	Salpingitis. Oophorectic cysts; intense oophoritis, in the dense walls of the cystomatous cysts were found imprisoned delicate nerve fibres; all ova were diseased, some in waxy degeneration.	do.		Yes	R.	The patient had been sick for years; after the operation her health was excellent.	do.
15	Mrs. L.		M.		Jan. 28, 1887	do.	Interstitial and catarrhal salpingitis. Ovaries enlarged, exceedingly sensitive, and low down in Douglas cul-de-sac; endotheliomatous growths extending to the periphery of the ovary; intense oophoritis, no ova; blood-vessels waxy.	do.		Yes.	R.	The patient recovered from the operation without a bad symptom; at the end of the third week was able to assume the burdens of her household duties. March 14, 1887, she was the picture of health, suffering no distress, strong, and able to work; in July, 1886, she had so improved that her physicians did not recognize her.	N. Y. Med. Jour., May 14 and 21, 1892, case 7; Am. Jour. Obst., Feb., 1888.
16	Mrs. M.		M.		March 9, 1887	do.	Bleeding myoma of the uterus. Hemorrhage for the last five months without a day's intermission, appendages diseased; inflammation of the ova and salpingitis.	do.		Yes.	R.	The patient made an excellent recovery; said "she had not been so well for twenty years."	Am. Jour. Obst., Feb. 1888.

Number of Case	Name	Age	Single or Married	Number of Children	Date of Operation	Place	Pathological Conditions	Operation	Who Present	Adhesions	Result: Recovery or Death	Remarks	Where Reported
12	Mrs. N.	..	M	3	March 14, 1887	Woman's Hospital of Brooklyn.	Suppurative parenchymatous salpingitis. Ovaries in intense inflammation; in some places commencing suppuration; large gyromatous cysts; endothelomatous growths; ova diseased and ruined.	Removal of uterine appendages.	.....	Yes.	R.	The uterus retroverted; the appendages enlarged, sensitive; and low down in Douglas' cul-de-sac; the patient made an excellent recovery; the temperature the second day after the operation was three-fourths degree better than the day before, and the third day it was normal, which it had not previously been for months.	Am. Jour. Obst., Feb., 1888.
13	Mrs. S.	..	M	1	April 6, 1887.	do.	Chronic interstitial salpingitis. Peritonitis; acute and subacute oophoritis.	do.	....	Yes.	R.	Her whole system was becoming septic; she made an excellent recovery.	do.
14	Mrs. C.	..	S	0	April 11, 1887.	do.	Each ovary enlarged into a blood cyst. Endothelioma changing to angioma and hematoma, remaining tissue of the ovary was in intense inflammation; only two ova were found, and they were in waxy degeneration.	do.	....	Yes.	R.	The patient suffered for years with intense pain in the pelvis; after the operation she gained in strength, health, and flesh, and wrote, June 4, 1889. "I am in perfect health, after fifteen years of suffering."	N. Y. Med. Jour., Sept. 6, 1890; Buff. Med. Jour., Nov., 1892.
15	Mrs. L.	..	M	2	April, 1887	...	Pyo-interstitial salpingitis. Suppurative oophoritis; tubes were enlarged and contained pus; small abscess in the walls of the tubes; tubes and ovaries bound down by dense adhesions.	do.	.. ..	Dense and thick	D.	The patient had been sick twenty years; had had repeated attacks of peritonitis, and specific constitutional disease rendered her whole system septic.	
16	Mrs. L.	..	M	..	April 12, 1887	do.	Blood cyst in the ovary. Endothelioma; intense oophoritis; waxy degeneration of the ova; mental disturbance.	do.	Dr. C. N. D. Jones.	Adhesions	R.	The patient had suffered for some years, was unable to attend to her household duties; after the operation she regained her health and improved in mental condition.	
17	Mrs. L.	..	M	..	April 13, 1887	do.	Pyo-interstitial salpingitis. Pelvic peritonitis; right ovary and tube were high up and adherent; left ovary and tube also fixed by firm adhesions, and in some places bound to the colon and to the appendix vermiformis. In the ovary, endothelomatous growths, gyromatous cysts; intense oophoritis; ova in waxy degeneration	do.	do.	Dense	R.	For five years the patient had suffered intense pain in the pelvis; she was emaciated, feeble, and not able to go around; after the operation she gained rapidly in strength and vigor, and was able to attend to her daily vocations.	N. Y. Path. Soc.
18	Mrs. L. Webster	..	M	3	May 13, 1887	do.	Both ovaries were enlarged, prolapsed and painful to the slightest touch. Each contained a forming blood cyst; endothelioma changing to hæmatoma; portions of both ovaries were in a state of myxomatous degeneration, some portions showing intense oophoritis; ova were all diseased and ruined, not a normal one in either ovary; salpingitis of the tubes.	do.	do.	Slight	R.	The patient came with her mother to consult me, March 30, 1887; she was pale, emaciated, cachectic, and had apparently tuberculous consumption; she said she had constant pain on each side of the pelvis, severe, sharp, and lacinating, and that she had suffered for years.	N. Y. Path. Soc., May, 1887; Dec. 12, 1888. N. Y. Med. Jour., Sept. 28, 1889; Buff. Med. and Surg. Jour., Nov., 1892.
19	Mrs. M. Carol Gerthes	..	M	8	May 14, 1887	do.	Left ovary enlarged into a blood cyst. Right ovary, cavernous angioma; small lakes of blood, or endothelioma changed to hæmatoma. Other portions of the ovary were intensely inflamed.	do.	do.	Adhesions	R.	The patient was emaciated, cachectic, and had all the appearance of phthisis; after the operation she was relieved of pain, gained flesh and strength, and was able to do the household work and washing for a family of eight persons; hernia was developed.	N. Y. Path. Soc., Sept., 1887; Dec. 12, 1888. N. Y. Med. Jour., Sept. 28, 1889; N.Y. Med. Rec., Sept. 6, 1890; Buff. Med. Jour., Nov., 1892.
20	Mrs. L.	..	M	..	May 16, 1887	do.	Both ovaries enlarged, prolapsed, and extremely sensitive; the right, pear shaped, measured two inches in diameter, and both were filled with an endothelioma tous growth in a far-advanced stage; lakes of blood corpuscles; the ova in both ovaries were ruined.	do.	do.	do.	R.	Before the operation the patient complained of distress and cramps, and extreme pain in the pelvis; not able to be around; she made an excellent recovery, and wrote: "I am able to work and am entirely well."	N. Y. Med. Jour., Sept. 28, 1889; N. Y. Path. Soc.
21	Mrs. ..	..	M	..	June .., 1887	do.	The uterine appendages were bound down in dense adhesions from repeated attacks of peritonitis. Pyo-salpingitis and oophoritis.	do.	do.	Dense	R.	The patient had been sick twenty years; after the operation her condition greatly improved.	
22	Mrs. V.	..	M	..	June .., 1887	do.	Suppurative oophoritis and gyroma. The rest of the ovarian structure was in intense inflammation.	do.	do.	Adhesions.	R.	The patient was weak and feeble, and suffered with constant pain in the pelvis; after the operation she gave every indication of good health, both of body and mind.	
23	Mrs. L.	..	M	..	June 17, 1887.	do.	Ovarian cystoma.	do.	do.	do.	R.	The patient made a good recovery.	
24	Mrs. H.	..	..	..	June 20, 1887	do.	Pyo-interstitial salpingitis. Tubes full of pus; adhesions so large and firm that many had to be ligated and cut. In the walls of the tubes and in the peritoneum were many miliary abscesses, ovaries in intense inflammation; large gyromatous cysts; walls waxy; no ova.	do.	Dr. A. M. Jacobus.	Very dense.	R.	The patient complained of constant pain in the pelvis, sometimes agonizing; unable to perform any kind of labor; fourth day after the operation, pulse and temperature normal.	N. Y. Path. Soc., Sept. 28, 1888.
25	Mrs. L.	..	M	..	July, 1887.	do.	Pyo-interstitial salpingitis. Ovaries enlarged, extremely sensitive, and with the adherent tubes dislocated low down behind a retroverted uterus; intense acute and subacute oöphoritis; gyromatous formations; diseased ova.	do.	do.	Dense	R.	The patient complained of constant pain and distress in the pelvis; was not able to be out of bed; pulse, 120; temperature, 101° F.; weighed seventy pounds; had indications of insanity, talked of self-destruction; after the operation her mental and nervous conditions improved.	N. Y. Med. Jour., May 10 and 17, 1890, case 11; Buff. Med. and Surg. Jour., Nov., 1892.
26	Mrs. Kate Helm	..	M	0	July 18, 1887.	do.	Pyo-interstitial salpingitis. The uterine appendages wrapped in a dense mass of adhesions, and adherent to the alimentary canal and to the appendix; tubes contained pus, and the pseudomembranous adhesions were in intense inflammation; in many places abscess formations; each ovary contained a blood cyst, fibroma, and waxy ova; diseased blood-vessels.	do.	Dr. Brush.	Very dense.	D.	The patient said she had suffered for nine years, and so much that she had often rolled on the floor in agony; the pus formations with the specific constitutional disease produced a septic condition of the system.	N. Y. Med. Jour., May 6, 1890, case 6.

37	Mrs. R.	34	M.	9	August 13, 1887.	Woman's Hospital.	The uterine appendages were wrapped in a dense mass of adhesions, and in the adhesions were many points of suppuration; tubes contained pus, closed at the fimbriated extremity, scarce a trace of the fimbria left; ovaries were in a state of acute inflammation and contained gyromatous formations, some of them waxy, some breaking down into endothelioma; there were no ova.	Removal of uterine appendages.	Dr. C.	N. D. Jones.	Very dense	R.	Constant distress, not able to attend to her daily duties; after the operation she was free from pain and able to work.	N. Y. Path. Soc.
38	Mrs. D.	..	M.	9	Sept. 6, 1887.	do.	Pyo-interstitial salpingitis. The tubes closed and contained pus; muscle fibres of the wall reduced to inflammatory corpuscles, in many places approaching suppuration; miliary abscesses, especially near the periphery; ovaries enlarged, one the size of a goose egg, and each one contained a blood cyst. One formed part of the wall of an abscess cavity. Some of the bands of adhesions were ¾ inch wide; ova in colloid degeneration.	do.		do.	do.	R.	Suffered constant pain and distress in the pelvis; not able to attend to her household duties; after the operation she was free from pain, and able to work; her health excellent.	N. Y. Path. Soc., Sept. 4 and 28, 1887; N. Y. Med. Jour., Sept. 28, 1889, case 7.
39	Hultm..	..	M.	9	August 10, 1887.	do.	Dermoid cyst in the right ovary. Ovary tightly wedged deep into the pelvis, and bound on all sides by firm adhesions; the right tube size of a lemon, full of pus, all traces of fimbria gone, and adherent on all sides, especially by old dense adhesions to the posterior part of the uterus; a large blood cyst in left ovary; also bound to the uterus and to the pelvic wall by firm adhesions. The left tube enlarged as the right and filled with pus, and the tube firmly bound to the uterus and to the walls of the pelvis.	Removal of dermoid cyst.		do.	do.	R.	The patient said she had been sick for fifteen years; after the operation she regained her strength and was able to work; said she scrubbed and washed and so produced hernia.	N. Y. Path. Soc., Sept. 28, 1887.
40	Mrs. H.	..	M.	9	Sept. 8, 1887.	do.	Pyo-interstitial salpingitis. Intense oophoritis; inflammation of the left ovary approaching an abscess; in the right ovary, hæmatoma and intense inflammation; very few ova and these ruined by disease.	Removal of uterine appendages		do.	Dense.	R.	Patient suffered, not able to do anything; after her operation she was free from pain, strong, and well.	
41	Mrs. I.	..	M.	9	Oct. .., 1887.	do.	The uterus in extreme retroversion, dragged down by enlarged ovaries so sensitive that the slightest touch gave distress, and increased pressure caused fainting and convulsions; intense oophoritis, gyroma, waxy degeneration of the ova.	do.		do.	Slight.	R.	Patient made an excellent recovery, gained strength, and was able to work.	N. Y. Med. Jour., May 15 and 17, 1897, case ..
42	Mrs. I.	..	M. yrs.	9	Oct. .., 1887.	do.	Chronic salpingitis. The tubes and ovaries wrapped in a mass of dense adhesions. Some were 4 inches in length and 1½ inches wide. Ovaries were atrophied to less than one-third their normal size; destruction of the ova; the menstrual periods ceased at the age of twenty-five.	do.		do.	Thick.	R.	The patient was emaciated and feeble, and complained of constant distress in the pelvis; after the operation she greatly improved in strength and vigor; left the hospital comfortable and in good condition.	N. Y. Path. Soc., Nov. .., 1887.
43	Mrs. Kid dinger.	..	M. yrs.	9	Oct. .., 1887.	do.	Uterus retroflexed and retroverted. Ovaries enlarged, prolapsed, and extremely sensitive; one, size of a small orange, contained a blood cyst; the other contained a large endotheliomatous growth which extended to the periphery; there were few ova, and they were diseased.	do.	Dr.	Willie Douglas.	Adhesions	R.	Patient said she had been sick for six years, had constant pain in the pelvis, the distress increasing; after the operation she spoke of her improved condition, that she was well, able to work, and glad that she had had the operation.	N. Y. Med. Jour., Sept. 28, 1889, case 5.
44	Mrs. I.	..	M.	9	Oct. 24, 1887.	do.	Pyo-interstitial salpingitis. Intense oophoritis; ovaries enlarged, prolapsed below the fundus of the retroverted uterus.	do.		do.	Dense.	R.	The patient suffered with pain, weakness, and constant distress in the pelvis; since the operation she says her health has never been better.	
45	Mrs. B.	..	M.	9	Oct. 24, 1887.	do.	Hæmatoma or blood cyst in each ovary. Intense oophoritis; both ovaries bound in with adhesions; peritonitis; peritoneal salpingitis.	do.		do.	do.	R.	Patient suffered intense pain, was weak and emaciated; by the operation she was relieved of her suffering, and gradually gained health and strength.	
46	Margaret Fisher.	..	M.	9	Oct. 24, 1887.	do.	Both ovaries enlarged, prolapsed, and exceedingly sensitive; tubes swollen to more than an inch in diameter, full of blood, and in a state of interstitial and catarrhal salpingitis; ovaries in intense inflammation, and contained fibromatous formations; ova diseased.	do.	Dr. C.	N. D. Jones.	Adhesions.	R.	The patient said she had pain in the pelvis all the time, so severe that she could not attend to her household duties; after the operation she repeatedly spoke as to "how improved were her conditions," and "how glad she was that she had had the operation."	N. Y. Med. Jour., May 15 and 17, 1897, case 2.
47	Mrs. I.	38	M.	9	Nov. 1, 1887.	do.	Pyo-interstitial salpingitis. Ovaries in intense inflammation; tubes and ovaries in the midst of inflammatory adhesions, in some places forming abscesses; some adhesions ¾ inch wide.	do.		do.	Dense.	R.	The patient complained of intense pain in the pelvis, was sick and not able to work; after the operation she said she was free from pain, able to work, and had excellent health.	N. Y. Path. Soc.
48	Mrs. I.	35 yrs.	M.	2	Nov. 1, 1887.	do.	Bleeding intramural myoma; weight, nine pounds. Chronic salpingitis, atrophy of the tubes; inflammation of the peritoneal membrane, oophoritis; gyromatous formations; blood-vessels diseased; ova in waxy degeneration.	Hysterectomy	.....		do.	R.	Patient had severe pain, was prostrated, weak, and incapable of any kind of labor; after operation she said she was better and more comfortable than she had been for twenty years.	N. Y. Path. Soc., Nov. 28, 1887; N. Y. Med. Jour., Aug. 28, 1888; Am. Jour. Obst., vol. xxviii., No. 4, 1893.
49	Mrs. H.	..	M.	9	Nov. .., 1887.	do.	Peritonitis, salpingitis, and oophoritis.	Removal of uterine appendages	Dr. C.	N. D. Jones.	Adhesions	R.	Complained of pain in the pelvis, and not able to work; after the operation, patient said her health was restored.	
50	Mrs. H.	..	M.	9	Nov. .., 1887.	do.	Uterus misplaced; tubes contained pus, ovaries enlarged, prolapsed, and in acute inflammation.	do.		do.	Dense.	R.	Patient suffered great distress; after the operation she had excellent health.	N. Y. Path. Soc.
51	Mrs. Hoff..	..	M.	9	Jan. 4, 1887.	do.	Spleen considerably larger than the ninth month of pregnancy; abscess of the left kidney perforating into the left colon descendens; pus, granular, and waxy casts in the urine.	Splenectomy.		do.	Adhesions	D.	The patient was extremely weak; the operation was only an effort to save her.	

Number.	Name.	Age.	State.	Number of Children.	Date of Operation.	Place.	Pathological Conditions.	Operation.	Who Present.	Adhesions.	Results. Recovery or Death.	Remarks.	Where Reported.
47	Miss I.				Jan. [illegible] 1888	House.	Salpingitis, oophoritis, endothelioma of left side.	Removal of uterine appendages.	Dr. C. N. D. Jones.	Adhesions.	R.	Her condition was deplorable, more and more her general health	
48	Mrs. V.		M.		Jan. [illegible] 1888	Wareham's Hospital.	Pyosalpinx interstitial salpingitis. Peritonitis; peritoneal abscess; tubes larger than the ovaries, and full of pus; abscess in the cortex of the left ovary; both ovaries in intense inflammation, and in many places approaching an abscess; ova broken up into medullary and colloid corpuscles.	Removal of uterine appendages.	....	Dense.	R.	Patient suffered intense pain, not able to be out of her bed, after operation she was free from pain and health restored.	N. Y. Med. Jour., Sept. 25, 1886, case.
49	Miss L. [illegible] bands.		M.		Jan. [illegible] 1888		The uterus, tubes, and ovaries were found in one solid mass six inches in diameter and fixed in the pelvis by dense adhesions; some portions of this mass gave evidence of fluctuation, which proved to be a large pelvic abscess and near by a number of smaller abscesses. The left tube measured ten inches in length, and some portions four inches in diameter, was bound by extensive and firm adhesions to the rectum and pelvic wall; ovaries were in intense acute inflammation; large portions of the normal structure destroyed by an endotheliomatous growth.	do.	Dr. C. N. D. Jones.	Very dense.	D.	Her whole system was septic from the large pus formation, and the repeated attacks of suppurative peritonitis.	
50	Mrs. [illegible]		M.		Feb. [illegible] 1888		Pedunculated ovarian cyst.	do.	.....	Small.	R.	Patient relieved of distress, and able to attend to her daily duties.	
51	Mrs. D.		M.		Feb. [illegible] 1888	do.	Pyosalpingitis. Peritoneal abscess, an Iliac abscess in the cortex of the ovary, ovaries enlarged and purulent, uterus cephalic, hematoma, cystoma, and waxy degeneration of the ova.	do.	Dr. C. N. D. Jones.	Dense.	R.	The patient was pale, hectic, frail cachectic, not able to work, suffered so that she sometimes vomited on the floor in agony, after the operation she was able to eat a hearty breakfast.	
52	Mrs. [illegible] Mahlstrom.		M.		Feb. [illegible] 1888	do.	Intramural fibroid tumor, fourteen pounds, with subperitoneal fibroids weighing over seventeen pounds; right tube in loops, 3½ inches in circumference, and filled with bloody serum, left tubes inches long, and filled with pus, both ovaries in acute and subacute inflammation; ova ruined.	Panhysterectomy.	do.	Very dense.	D.	Patient was by her self-sacrificial treatment that she had, she could be brought, after operation, she was relieved of distress and was able to be up on the twelfth day.	N. Y. Path. Soc., N. Y. Med. Jour., Vol. [illegible] Sept. [illegible]; Am. Jour. of Obst., [illegible] Nov., 1892.
53	Miss M.				March [illegible] 1888	do.	Pyosalpingitis and oophoritis.	Removal of uterine appendages.	do.	Adhesions.	R.	After the operation she was free from pain and able to work.	Pittsburg Medical Review, Oct., 1896, case 1.
54	Mrs. J.		M.		March [illegible] 1888	do.	Salpingitis. Endothelioma of the ovary extending to the periphery; a forming hæmatoma; no ova.	do.	do.	Dense.	R.	Patient suffered intensely; after operation free from pain and regained her health.	
55	Mrs. McPh[illegible]		M.	4	March [illegible] 1888		Cancer in the floor of the pelvis. The uterus and appendages fixed by adhesions on the extreme right; tubes and ovaries chronically diseased, and now infiltrated with cancer.	Removal of cancer and uterine appendages.	do.	do.	R.	The patient made an excellent recovery from the operation, but at the end of thirteen months there was a return of the malignant disease.	Pitt. Med. Rev., Oct., 1896; N. Y. Med. Rec., March 21, 1896, case 2.
56	Miss E.			0	March [illegible] 1888		Salpingitis and oophoritis, with myxomatous degeneration of the ovary; necrova.	Removal of uterine appendages.	do.	Adhesions.	R.	The patient suffered viciously, not able to attend to daily duties; after operation she regained her health.	
57	Mrs. Hende[illegible]		M.		March [illegible] 1888	do.	The left tube was enlarged to a blood cyst, size of an orange, adherent to the retroverted and retroflexed uterus, and to the accompanying ovary, and to the walls of the pelvis.	Removal of blood cyst.	do.	Dense.	R.	The patient was weak, prostrated and in great distress, the pain in the back and pelvis were increasing and unbearable, she was able to leave the hospital in three weeks, relieved of distress, and since has been perfectly well.	
58	Mrs. [illegible] Mc[illegible]				April [illegible] 1888		Uterus in extreme retroversion, in front of it, and adherent to the pelvis, was a large sensitive mass three inches in diameter, which proved to be a growing ovarian cyst, it was the right ovary. The left ovary was low down in Douglas' cul-de-sac, in a state of acute and subacute inflammation; the ova of both ovaries were diseased and ruined; suppurative salpingitis of the mucosa and interstitial salpingitis of the tube wall.	Removal of uterine appendages.	do.	Adhesions.	R.	Before the operation the patient wrote: "I have years I have not had a well day, and the pain increases me so I cannot work. After the operation she was able to work, and wrote: "I am glad the diseased ovaries are removed."	N. Y. Path. Soc., April [illegible], 1895; Pitt. Med. Rev., Oct., 1896, case 3; N. Y. Med. Jour., May 1, and 15, 1897, cases.
59	Mrs. L.		M.		May [illegible] 1888	do.	Pyosalpingitis. Peritonitis; oophoritis.	do.	do.	do.	R.	The patient was an invalid for many years from diseased uterine appendages; after their removal she had excellent health and was able to attend to her household duties.	
60	Mrs. Offelb[illegible]		M.		May [illegible] 1888	do.	The uterus was retroflexed and retroverted, and bound down by firm adhesions and by adherent uterine appendages. The right ovary, in intense inflammation, it with the tube formed part of the wall of an abscess which extended into the adjoining pelvis aponeurosis; salpingitis; repeated attacks of peritonitis; the ova were ruined.	do.	do.	do.	R.	The patient said she had constant distress, that her sufferings were so great she could not stand it; after the operation she was relieved from pain and gradually regained her strength and vigor.	Pitt. Med. Rev., Oct., 1896, case.

69	Miss A Memmen		S.	o	June, 1888	Woman's Hospital	Interstitial salpingitis. Abscess in the wall of the tube; ovaries in uterine inflammation, and contained an endotheliomatous growth; in many sections of the right ovary no ova were found; in the left ovary, the ova were waxy and contained medullary corpuscles.	Removal of uterine appendages	Dr. C	N. D. Jones.	Adhesions.	R.	Before the operation she said her life was a misery; after the operation she seemed to be in excellent health, and wrote, July 1, 1898: "I am very thankful that the diseased organs are removed."		
70	Mrs. Schultz		M	o	June 4, 1888	do	Intraligamentous cyst, 9 to 12 inches in diameter, occupying the centre of the abdomen; uterus pushed far to the right, and to it attached thinnest by firm fibrous adhesions; chronic peritonitis; tubes and ovaries gave evidence of long existing disease and repeated attacks of inflammation.	Removal of intraligamentous cyst	do.	do.		R	The patient said she had been sick for many years, the last five incapable of any kind of employment, said the tumor was increasing in size, and her health failing more and more; fifth day after the operation, pulse and temperature normal, patient up the tenth day.		
71	Mrs. Sarah [illegible] Bates	M	[illegible] yrs.		June [illegible], 1888.	do	Pyo-interstitial salpingitis. Uterus retroverted and fixed by a dense mass of inflammatory adhesions. From long existing disease, and repeated attacks of peritonitis, the ovaries and tubes were buried in firm, thick, well-organized adhesions. The left uterine appendages were especially enlarged and formed a tumor-sized of an orange; right so completely covered that they could not be removed.	Removal of uterine appendages on one side	do.	do.	Disease.	D	Patient said she had been married twenty-six years, had been an invalid for more than twenty years, constant and severe pain in the pelvis rendered life a misery; she said she was unable to work, and that the marital relations were most distressing.		
72	Miss M [illegible]		S.	o	June [illegible], 1888	do	Intense pyo-interstitial salpingitis, terminating in atrophy of the tube wall; uterus acutely anteflexed and retroverted; both ovaries and tubes were found bound down by dense adhesions, and forming with the pelvic wall on the left side an abscess. The opening into the wall of the left ovary by an abscess was one inches in diameter, the ova were scanty, and those found were broken up in medullary corpuscles.	Removal of uterine appendages.	do.	do.		R	The patient said she had suffered for years with intense soreness and burning in the pelvis, that rendered her unfit for the active duties of life; she made a rapid recovery from the operation, and subsequently was in the enjoyment of excellent health.	Pitt. Med. Rev., Oct., 1898, case 1.	
73	Mrs. [illegible]		M	[illegible]	June [illegible], 1888	do	Interstitial salpingitis. Ovaries enlarged, prolapsed, and exceedingly tender; both ovaries and tubes wrapped in dense adhesions; the ovarian fibroma degraded by cystic endotheliomatous growths, hæmatoma, gyromatous cysts, the ova in waxy degeneration.	do	do.	Adhesions.	R	The patient said she suffered with such pain in the pelvis that she could not attend to her household duties; she made an excellent recovery and regained only expected her thanks that she was relieved of suffering and the use.		
74	Mrs. [illegible]		M	[illegible]	[illegible]	do	Uterus in extreme retroversion held down by large dilated and adherent tubes; the cavities of both enlarged cystoid cavities, almost entirely filled with tense inflammation, in the cystoid tissue gyromatous cysts and waxy ova, suppurative.	do	do.	[illegible]	R	Patient said she was unable to walk or be out of bed. Her husband wrote, May [illegible], "I believe the operation and treatment has saved my wife's life. Her recovery is perfect in both health and strength."	Pitt. Med. Rev., Oct., 1898, case 9. N. Y. Med. Jour., May [illegible], 1898, case 4.	
75	Mrs. H [illegible]		[illegible]	do	[illegible]	do	Vessel the ovarian cyst-wall was converted into and bordered on an abscess cavity, the walls of which cavity were completed by the floor of the pelvis, right ovary in myxomatous degeneration; both ovaries and tubes bound in with adhesions; salpingitis; ova in waxy and fatty degeneration.	do	do.	do.	R	Patient said she had constant pain, burning heat, and bearing down in the pelvis; that at times she was not able to walk, and could not even draw a long breath without causing her pain and distress; she made an excellent recovery, and was entirely relieved of the old pain and suffering.	Pitt. Med. Rev., Oct., 1898, case 6.	
76	Mrs. Eng [illegible] [illegible]		M [illegible]	[illegible] yrs.	[illegible]	do	Intramural myoma, subperitoneal fibroids. The patient was apparently done well, and everything seemed satisfactory, when some hours afterward the heart's action became irregular, the patient had for eight years suffered with heart disease; her husband said, "sometimes she could hardly breathe."	Hysterectomy	do.	Disease.	D	An acute attack of peritonitis. The patient had had uterine tumors for years, but suffered only the last few months, after she had had electrical treatment.	N. Y. Path. Soc.	
77	Mrs. [illegible]		M	[illegible]	Sept. [illegible], 1888	do	Pyosalpingitis. The anteflexed uterus fixed on the right by dense adhesions, which adhesions covered in the right tube and ovary, and enclosed a large abscess cavity filled with pus; destruction of the ova.	Removal of uterine appendages.	do.	do.		R	The patient said she had constant pain and distress in the pelvis, so severe that she had to go home over and not able to attend to her house-hold duties, after the operation she was relieved of pain and was strong and vigorous.	Pitt. Med. Rev., Oct., 1898, case 2.	
78	Mrs. W [illegible]		M	[illegible]	Sept. [illegible], 1888	do	Uterus fixed on the right by repeated attacks of peritonitis; right ovary enlarged by fibroid growths; left ovary, acute and subacute oophoritis, chronic salpingitis.	do	do.	do.		P	The patient had been sick nine years, was pale, feeble, and emaciated, she had constant distress in the pelvis; after the operation she was relieved of pain and resumed her health and vigor.	N. Y. Path. Soc., Sept. 23, 1897, Dec. 17, 1898; N. Y. Med. Jour., Sept. 17, 1898, case 5; Buff. Med. and Surg. Jour., Nov., 1897; N. Y. Med. Jour., March 12, 1898.	
79	Mrs. S [illegible]		M.	[illegible]	Nov. [illegible], 1888	do	Pyo-interstitial salpingitis. Oophoritis; much of the ovarian tissue destroyed by endotheloma and cystoma.	do	do.	Adhesions.	P	Patient said she suffered most distressing pain, so acute and constant that she could not attend to her daily duties.		
80	Mrs. A [illegible]		M	[illegible]	Nov. [illegible], 1888	do	Pyosalpingitis. Uterus anteflexed and retroverted, ovaries enlarged and prolapsed; in each were endothelomatous growths and gyromatous cysts, ova in waxy and colloid degeneration.	do	do.	do.	R	Patient made an excellent recovery, was free from pain, and able to work.		
81	Miss W [illegible]		[illegible]	[illegible]	Nov. [illegible], 1888	do	Both ovaries enlarged to blood cyst from endothelomatous growths.	do	do.	do.	P	The patient was feeble, emaciated, and cachectic, said she had been sick for more than a dozen years and continued to grow worse; she made an excellent recovery, and subsequently wrote that she was regaining her health, strength, and flesh.		
82	Mrs. [illegible]		[illegible]	[illegible]	Nov. [illegible], 1888	do	Bleeding intramural myoma, as large as a fetus at the fourth month, of several small subperitoneal fibroids. Ovaries and tubes in chronic inflammation.	do	do.	do.	L	The patient said she had been an invalid for many years, and was exhausted by repeated uterine hemorrhages; she made an excellent recovery, and has since written that she "is in excellent health."		

Number.	Name.	Age.	State.	Number of Children.	Date of Operation	Place	Pathological Conditions	Operation	Who Present.	Adhesions	Result, Recovery or Death.	Remarks	Where Reported.
1	Mary Gar...	23	S.	0	Dec. ..., 1888	Woman's Hospital	Pyo-interstitial salpingitis. Peritonitis; one ovary enlarged into a blood cyst the size of an orange, and covered with inflammatory adhesions, the ovary on the opposite side not so large, but gave equal indication of disease, and with its corresponding tubes found in dense adhesions; in many sections there were no ova, and those found were diseased.	Removal of uterine appendages	Dr. C. N. D. Jones.	Adhesions.	R.	Complained of constant and distressing pain in the pelvis; after operation she was relieved of pain, able to work, and the epileptic attacks were less frequent	Med. and Surg. Rep. Phila., May 22, 1897.
2	Mrs. ... (Colored)	...	M.	...	Jan. ..., 1897.	do.	Salpingitis and commencing cystoma	do.	do.	do.	R.	By the operation the patient was restored to health.	
3	Miss M.	...	S.	...	Jan. ..., 1897.	do.	Interstitial salpingitis. Intense oophoritis; abscess; in many sections no ova, those found were ruined	do.	do.	do.	R.	The patient suffered so much that she could not attend to her duties; she was anxious to have the operation, and was relieved by it.	
4	Miss H.	...	S.	1	Jan. ..., 1897.	do.	Salpingitis. Hæmatoma; oophoritis; diseased ova	do.	do.	...	R.	Constant pain in the pelvis so she could not attend to her duties; after the operation, free from pain and able to work.	
5	Mrs. H.	...	M.	1	Jan. ..., 1897.	do.	Misplaced and diseased ovaries.	do.	do.	do.	R.	The patient made an excellent recovery and regained her health and strength.	
6	Miss W.	...	S.	...	Jan. ..., 1897.	do.	Interstitial salpingitis. Oophoritis; cystoma; waxy blood-vessels; no ova; colloid corpuscles in the cortex.	do.	do.	do.	R.	Patient suffered constant pain and distress, not able to attend to her duties; after operation, relieved of pain, and when last heard from was still improving.	
7	Mrs. S.	...	M.	1	Jan. ..., 1897.	do.	Chronic pyosalpingitis. Peritonitis; both ovaries enlarged and prolapsed, one giving evident fluctuation and containing an abscess.	do.	do.	do.	R.	The patient complained of great distress and suffering, of which she was relieved by the operation.	
8	Mrs. S...	...	M.	1	Jan. ..., 1897.	.....	Abscess in one ovary. In both fibromatous formations and oophoritis; no ova found; chronic salpingitis	do.	do.	Dense.	R.	The patient said for years she had pain in the region of the ovaries, and constantly such distress that she did not feel able to walk or perform her household duties.	N. Y. Med. Jour., May 1, 1897.
9	... H.	...	S.	...	Feb. ..., 1897.	Woman's Hospital	Pyo-interstitial salpingitis. Uterus anteflexed and retroverted; ovaries enlarged and prolapsed and in a state of intense inflammation.	do.	do.	Adhesions.	R.	The patient said she had constantly cutting pains in the pelvis, sometimes would fall down in agony; after the operation she was relieved of pain and expressed herself frequently as to her improved condition.	
10	Mrs. A. H.	...	M.	1	Feb. ..., 1889.	do.	Pyo-interstitial salpingitis; oophoritis.	do.	do.	do.	R.	Complained of constant and severe pain in the pelvis; said by the operation she was relieved.	
11	Mrs. E.	...	M.	...	Feb., 1897.	do.	Interstitial salpingitis. Acute and subacute oophoritis; ova in waxy degeneration.	do.	do.	do.	R.	By the operation she was relieved of distress and pain.	
12	Mrs. Ida L. Hoag.	...	M.	1	Feb. ..., 1897.	do.	On the left the ovary enlarged to a blood cyst the size of a small cocoanut and exceedingly tender; the tubes in a state of chronic salpingitis, and each one adherent to its corresponding ovary.	Removal of blood cyst.	do.	do.	D.	The patient said: "I suffered terribly, and got worse all the time; I have constant distress and severe soreness in the pelvis."	
13	Mrs. H.	...	M.	...	March ..., 1897.	do.	Salpingitis. Intense oophoritis; in each ovary endothelioma tous growths and fibroma; ovarian waxy and colloid degeneration.	Removal of uterine appendages.	do.	do.	R.	Patient said she had been sick for five years; after operation she was well and entirely relieved of pain.	
14	Mrs. S.	...	S.	0	March ..., 1897.	do.	Much of the ovarian tissue was destroyed by an endothelioma tous growth; the ova were ruined; salpingitis.	do.	do.	do.	R.	Patient said for five or six years she had suffered severe pain, and was not able to work; after operation she was well and able to work.	
15	Mrs. S.	...	M.	...	.....	...	Ovarian cystoma, which contained about sixty pounds of fluid.	Ovariotomy.	do.	Slight.	R.	The patient said: "I have been a great sufferer for six or seven years. I am well now and feel first-rate."	
16	Mrs. S.	42	M.	2	Jan. ..., 1897.	Woman's Hospital.	Bleeding intramural myoma. Suppurative interstitial salpingitis; forming abscesses in the walls of the tubes; intense oophoritis, approaching an abscess; peritonitis; in many sections, no ova; the few found were diseased and ruined.	Removal of uterine appendages.	do.	Dense.	R.	Patient was weak and prostrated from continuous hemorrhages; said that for eight years she had suffered intense pain; said October 17, 1896, that she had never felt so well as she had since the operation.	
17	Emma ...	...	M.	...	.....	do.	Pyosalpingitis. Oophoritis; much of the ovarian structure destroyed by endothelioma tous and fibromatous formations	do.	do.	Adhesions.	R.	The patient said: "Before I went to the hospital I had great pain, could not walk, nor was I able to work; now I have no pain, can walk, and attend to my daily duties."	
18	Mrs. K.	...	M.	0	July ..., 1896.	do.	Tubes 2 inches in length, 1½ inches in diameter and full of pus; ovaries converted into blood cyst and bound in with adhesions, wedged down deep into the pelvic cavity.	do.	do.	Dense.	R.	The patient suffered from great and constant pain	
19	Mrs. M.	...	M.	0	.....	do.	Intramural myoma. Salpingitis; oophoritis; suppurating endothelioma; large abscesses in the pelvis.	Hysterectomy	Drs. H. C. Coe, C. N. D. Jones, and O. D. Frey.	do.	D.		
20	Mrs. O.	...	M.	2	.....	Her home.	The left ovary size of an orange, containing a blood cyst; the right in intense inflammation, and much of its structure destroyed by an endothelioma, changing to angioma; pyosalpingitis of the tube in some places, miliary abscesses in the walls; no ova were found.	Removal of uterine appendages.	Drs. R. T. Morris, S. E. Currier, C. N. D. Jones.	do.	R.	For years the patient had complained, and had been under long-continued treatment without benefit; after the operation her health greatly improved.	

any part; and invariably I have found destruction of the ova.

Removal of the uterine appendages for internal myoma, four cases. All made a good recovery. Lawson Tait says[1] that the cases in which he has removed the uterine appendages for myoma were twenty-five in number, with four deaths; and one death in an incomplete operation, making in all five deaths.

Hysterectomy for myoma of the uterus, four cases. The first total hysterectomy ever performed in this country for myoma was Case No. 52.[2] The tumor weighed fourteen pounds after its removal. The patient was able to be up on the twelfth or thirteenth day, and she suffered infinitely less than if the pedicle had been treated intraperitoneally or extraperitoneally. Dr. T. A. Emmet says:[3] "To remove the uterus when enormously enlarged by a fibroid tumor is unquestionably one of the most formidable operations a surgeon can be called upon to undertake." Dr. Lawson Tait says:[4] "Hysterectomy for fibroid is the most ghastly, serious, and difficult operation in the whole realm of abdominal surgery." Dr. C. D. Palmer says:[5] "There are no operations within the domain of surgery more grave;" "the dangers to be encountered are the greatest within the range of pelvic surgery."

By entire hysterectomy the operation is relieved of many of its difficulties, and especially is free from the many dangers of the pedicle treated intra or extra peritoneally.

In this list there were adhesions in eighty cases. Dr. Joseph Price says:[6] "Adhesions constitute the surgeon's greatest difficulty." Sir Spencer Wells said, January 4, 1862, that he looked upon pelvic adhesions as one of the most serious indications against ovariotomy. Dr. Peaslee said:[7] "Adhesions compromise the result of ovariotomy." Erichsen said: "They undoubtedly are a serious obstacle to the success of an operation."

In a few of my patients hernia developed subsequently to the operation, but in every instance this was in hard-working women, who after leaving the hospital commenced at once their heavy labors. One, No. 24, did the household work and washing for a family of eight persons, and sometimes took in the washing for a boat's crew. If these women had taken one-tenth of the care and precaution that a certain physician did after undergoing laparotomy for appendicitis they would have been in no danger of hernia.

Dr. Bantock says:[9] "Cases of hernia after ovariotomy are by no means rare." Joseph Price says:[10] "Herniæ cannot always be avoided, and they are not among the avoidable sequelæ."

Many or most of the operations mentioned in this list were so dangerous that I often marvelled that the patients did so well or made so rapid a recovery. At the same time I am infinitely grieved that any patient under my care died subsequently to operation; but in every instance of a fatal termination there were indications that even without the operation there would soon have been the same result. Some of the cases were undertaken as a forlorn hope. Case No. 49 was one of a large pelvic abscess and abscesses all through the peritoneum; the case was fatal before it was touched, as was also the case of the colored woman (No. 12),[1] who was brought to the hospital with septic peritonitis. Equally fatal beforehand was the case of splenectomy (No. 46). Dr. Charles Heitzmann said, before the operation, from his examination of the urine, that "there is an abscess in one kidney, which abscess opens into the descending colon." Besides, the spleen gave evidence of malignancy. It was foully diseased in every part. Even under the most favorable circumstances removing the spleen is a very dangerous operation. In 1886 there had been in Great Britain twelve splenectomies, and they were all fatal; T. Bryant, of Guy's Hospital, had two subjects, both of whom died from the operation; and Billroth, in Vienna, had performed the operation thrice, each time with a fatal result. The first successful case in Great Britain was that of J. Knowsley Thornton.[2] The patient was a girl, nineteen years old; the spleen weighed one pound eleven ounces—so small that Dr. Thornton supposed it was the left kidney. The spleen of my patient weighed nearly eighteen pounds, and enlarged the abdomen to enormous proportions. There was not the least chance for the patient; but she begged to have the operation performed, hoping that in this last resort she might find relief. As Dr. John Homans[3] says: "A surgeon is bound at times to operate in cases in which he can give but little hope of a favorable result."

All three of these cases might be called "exploratory incisions." Now, if I should, as some have done, give only my "completed operations," this would take off Mrs. Bates, Mrs. E——, and Mrs. Bruggeman, and my mortality would thereby be reduced to about 2.5 or 3 per cent. Then, on the same principle I could exclude one or two cases that died in consequence of specific constitutional disease, which is foreign to the operation and is far more formidable than acute sepsis. Acute sepsis may be relieved by full action of the bowels, but the freest evacuations have no effect upon this chronic mysterious poison. I believe this specific constitutional disease, syphilis, has been the hidden enemy that has increased the death rate of many a surgeon.

In Case No. 86 the patient had a blood cyst, but it was not so dangerous or so complicated as were the blood cysts of patients Nos. 10, 90, and 94; nor was this patient in so weak, dangerous, or precarious a condition as were many patients in this list; and in no respect was it half so difficult, half so serious or dangerous an operation as were Nos. 29, 34, 52, and many others, or even Nos. 83, 84, and 85, who happened to be in the hospital the same time. All these patients made a good recovery, and had subsequently excellent health; but No. 86 had the specific constitutional disease, and though everything was done, every care and precaution known to the best surgeons in this country or in Europe were taken, and though her physicians were with her night and day, studying and doing everything for her recovery, yet she succumbed —died on the sixth day of some kind of blood poisoning. I do not believe any proposed preparation or procedure could have saved her. Her death was, I believe, entirely due to this mysterious blood poison, this specific constitutional taint of syphilis.

Though there were losses, yet by the various opera-

[1] New England Medical Monthly, May 18, 1882, p. 336.
[2] Annals of Gynæcology and Pædiatry, June, 1895, p. 573. Monatschrift für Geburtshilfe und Gynäk. New York Academy of Medicine, section for gynæcology and obstetrics, March 28, 1895.
[3] "Diseases of Women."
[4] American Journal of Obstetrics, May, 1886, p. 486.
[5] Transactions of American Gynæcological Society, 1880, p. 361.
[6] Annals of Gynæcology, August, 1888.
[7] Peaslee, p. 346.
[8] Lancet, January, 1865.
[9] British Medical Journal, July 12, 1880.
[10] Medical News, May 31, 1890.

[1] This case was very similar to the one presented by Prof. W. T. Lusk before the New York Obstetrical Society, October 21, 1879—general peritonitis, oöphoritis, abscesses. Dr. Lusk did not do an operation, but the patient died just the same. As Dr. Noeggerath wisely said: "The primary disease was a double salpingitis." So the primary disease in my case was a double salpingitis.
[2] Medico-Chirurgical Transactions, 1886, page 408. Transactions of Royal Medico-Chirurgical Society, new series, vols. i. and ii., p. 103.
[3] Boston Medical and Surgical Journal, January 20, 1881, p. 50.

tions in this list many valuable lives were saved; many patients were restored to health who would otherwise have been hopelessly lost. Dr. L. S. Pilcher wrote in 1892 a paper on "The Ultimate Results of Operations for Removal of the Uterine Appendages," referring to the possible "persistence of pain," the possible development of "hernia," of "fæcal and urinary fistula," and the possible sequelæ of "mental disturbances."

None of these sequelæ need follow. In cases in which the conditions demand an operation, there is usually an entire relief of the pain; and in no instance have I seen an operation followed by mental disturbances, when similar mental disturbances or abnormal mental conditions did not previously exist, and in a more exaggerated form or degree. So in proper cases I am prepared to assert that "the ultimate results of the removal of the uterine appendages" are: *Many lives are saved and countless numbers are redeemed from helpless invalidism.* Many who do not recover would probably soon die from existing causes. Prof. William T. Lusk said:[1] "The operation of removing the uterine appendages has been the means of liberating many women from persistent suffering, and has perhaps saved many others from death." Dr. Joseph Eastman says:[2] "Some argue that the operation is being done too often. My limited experience induces me to believe that where the uterine appendages have been unnecessarily removed once, ten women have gone down to the grave whose lives could have been saved by timely removal of the uterine appendages."

DIAGNOSIS AND TREATMENT OF AFFECTIONS OF THE FRONTAL SINUSES.[3]

BY F. FEHLEISEN, M.D.,

SAN FRANCISCO, CAL. (LATE OF BERLIN).

THE diseases of the frontal sinuses offer us an interesting and many-sided picture, and only to outline the same and merely to mention the many mistakes in diagnosis made by physicians familiar with the subject would force me far beyond the limits of this paper. Therefore I shall only briefly name the chief kinds of sinus affections, dwelling somewhat more at length on a diagnostic point of considerable importance, and finally discuss the great advances made in the treatment during the last few years.

In the large majority of cases frontal-sinus affections are caused by infection. The inflammation frequently spreads from the nose to the frontal sinus. However, primary inflammations (usually acute) of the frontal sinus may occur with, or more rarely without, simultaneous disease of the nasal cavities. The former is the case with simple coryza, the latter with certain infectious diseases, especially with measles, scarlet fever, diphtheria, typhoid, pneumonia, influenza, etc. Also syphilis of the nasal cavities can extend to the frontal sinus.

One differentiates according to the kind of infection the following forms: sinusitis catarrhalis, blennorrhoica, and pyorrhoica, and an encapsulated empyema of the frontal sinus. No strict line can be drawn between these different forms, as generally a mixture of mucus and pus and often blood also is found. Frequently thickened crumb-like masses occur. The difference in the clinical pictures is chiefly influenced by the more acute or chronic course of the disease. The more acute cases begin with high fever, sometimes even a chill, followed by severe constitutional symptoms. The sensorium is not clear. Soon perforation occurs, as a rule in the anterior and inferior wall, and an eyelid or orbital phlegmon results. Very rarely it opens posteriorly toward the cranial cavity. The mucous membrane of the sinus is in such cases frequently colored black and is gangrenous, and the exudate ichorus or purulent. Between these very acute cases and the chronic ones, some of which have lasted for years and whose actual beginning cannot be determined, there are many intermediate forms. The most frequent are the chronic forms, the purely chronic as well as those whose course is interrupted by subacute attacks. There are suppurative cases which show no other symptoms except a flow of pus on one side of the nose, lasting for years, and sometimes an occlusion of the nose accompanied by frequent headaches with more or less dizziness. In encapsulated empyema, which can also develop slowly, the flow of pus is of course absent, but the headaches are more pronounced. Often such patients first come under observation when in connection with a common coryza an exacerbation has set in, and the process suddenly assumes a more or less acute character. Other common forms have a more acute beginning. In connection with a coryza a mild sinusitis catarrhalis with slight symptoms develops. With the disappearance of the swelling in the nose, the swollen ductus nasofrontalis opens again, the secretions flow off, and the patient feels well. But every new catarrh is followed by another attack of acute or subacute inflammation of the frontal sinus. After a time the inflammation no longer wholly disappears and chronic disease of the sinus results. This terminates in one of two ways. Either the attacks become more severe and the complaints greater, even between two exacerbations, and in time a pyorrhœa or an encapsulated empyema occurs, according to whether the outlet becomes pervious between the attacks or not; or it may happen that when the outlet is permanently closed the attacks become less and less severe and finally cease. In this case the patient believes himself cured, until at some future period a swelling near the root of the nose, toward the orbit of the eye, is noticed, or disturbances of vision send him to the oculist. The sinusitis catarrhalis becomes a mucocele, which, unlike the empyema, gives no discomfort to the patient, until either the increasing bulging of the forehead near the sinuses or disturbances of vision call his attention to the trouble.[1]

The second etiological factor of sinus diseases is traumatism. A number of reliable cases have been observed in which either a mucocele or an empyema has followed trauma. A blow, with or without fracture of the bone, can cause a flow of blood into the sinus, and a clot is formed which inflames the mucous membrane by irritation. Then, either a sinusitis catarrhalis with closure of the ductus nasofrontalis, followed by the formation of a mucocele, occurs, or a sinusitis pyorrhoica or encapsulated empyema results, according to whether the outlet remains open or not. A third group of sinus diseases, caused by tumors, parasites, and foreign bodies, is simply mentioned because of their rarity.

The diagnosis of the acute cases is, as a rule, easy. Chronic cases on the other hand are often mistaken for supra-orbital neuralgia, migraine, etc. Many cases have been published which were misunderstood for years, and which finally astonished patient as well as physician by perforation taking place through the forehead or orbit. This is chiefly true of those remittent cases in which at intervals of weeks or even months short acute or subacute attacks occur, giving us an

[1] New York Academy of Medicine, March 6, 1890. — Ibid.

[2] Read before the Society of German Physicians, San Francisco, Cal., September 2, 1896.

[1] An exhaustive treatise by H. Krehnt, entitled "Die entzündlichen Erkrankungen der Stirnhöhlen und ihre Folgezustände," gives a detailed account of the various and interesting eye complications.

exact picture of neuralgia. Of course the easiest to recognize are those cases in which there is either a continual flow of pus, or in which the acute attacks stop with the emptying of the sinus.

Pus flowing from one side of the nose should arouse suspicion of disease of one of the cavities opening into the nose. If on closer inspection one sees the pus coming from the anterior end of the thickened middle turbinated bone, it points to frontal-sinus disease. The diagnosis can be made sure by putting a sound into the ductus nasofrontalis and allowing the secretion to escape. In cases of encapsulated empyema this symptom is of course absent, and the diagnosis would become very difficult were it not for one symptom which I consider of great importance, namely, the tenderness of the bone on pressure. That the bone in acute cases is painful, both spontaneously and on pressure, is clear, but in chronic cases also pressure with a thick sound or pencil, percussion with a plexim-eter, etc., will cause pain. Many physicians could by these means draw the limits of the sinuses on the forehead and later at the operation assure themselves of their accuracy. Much more important than this well-known tenderness on pressure of the forehead is the same sign elicited at the floor of the sinus, that is, the upper wall of the orbit, and that is a point to which, as far as I know, our attention has only lately been called with sufficient emphasis by Kuhnt. To understand this, one must know how the bones are affected in these diseases, the process being different according to whether a mucocele or an inflammatory condition is present. In the former (*i.e.*, the mucocele or hydrops) a simple pressure atrophy and distention of the bone follow. It becomes thin and blown out like a bubble, especially the anterior and perhaps still more so the inferior wall. The sinus can contain in this way as much as six ounces or more of fluid. The ethmoid and sphenoid may be pressed downward and the whole orbit pushed out of place. Of inflammatory changes there are no signs. So also in the cases of traumatic hydrops generally and those of cystoid hydrops or mucocele, in the great majority there is no pain. At all events the subjective symptoms are much less than in the purulent process.

Often the first symptom of the mucocele is the bulging of the bone which usually occurs in the upper and inner corner of the orbit. Why just there I shall explain later.

In purulent inflammation of the sinus the bone is altogether differently affected. Here we have to deal not with a pressure atrophy of the bone but with an extension of the inflammation from the mucous membrane to the surrounding bones. As elsewhere, in the immediate vicinity of the inflamed point, a rarefying ostitis sets in, the bone becomes soft, and at length, this process continuing, is perforated. Of course I cannot deny that pressure may also develop in the pus sac, but this does not cause a slow bulging of the bone, but rather an acute attack with severe frontal headache, high fever, and a comatose condition as chief symptoms. These do not subside until either the pressure diminishes, or the pus escapes through the ductus nasofrontalis, or perforation of the bone takes place. In chronic purulent processes the perforation occurs slowly and there is no distention of the bone. A small opening is formed, just as in chronic necrosis of a long bone; a so-called cloaca results, due to purulent dissolution of the bone.

I would not give so much space to this had it not repeatedly happened that one of my colleagues wished to question my diagnosis with the remark that no distention was present. Likewise in the literature of the last few years I find in discussions on empyema that absence of elevation is mentioned as a peculiarity. This elevation is one of the symptoms of hydrops, but not of empyema, in which it is generally wholly absent, except when a case of purulent mucocele is in question.

This perforation very rarely occurs inwardly toward the brain, less rarely toward the forehead, and generally downward through the orbital wall, not only because this is thin, but also, as Kuhnt has endeavored to prove, because it is not so well nourished.[1] Now there are two places in the orbital wall where the perforation usually takes place. One is in the inner and upper corner of the orbit, immediately behind and under the fovea trochlearis; the other somewhat behind the incisura supra-orbitalis. At both of these points the bone is pierced by veins which run from the mucous membrane of the sinus to the vena ophthalmica and supra-orbitalis. Along these vessels the inflammation travels and starts the resorption of the bone. Consequently, if in doubtful cases one wishes to make the tenderness of the bone on pressure of diagnostic value, one must not confine the examination to the frontal wall of the sinus, but must introduce the little finger into the upper and inner corner of the orbit; then the patient is told to look downward and an attempt is made to enter behind the incisura supra-orbitalis. Here the bone is sometimes thin and giving, as the cover of a tin box, or there may be an inflammatory thickening of the periosteum, but almost without exception pressure will be found to be painful. If the examination is conducted in this way, the tenderness on pressure will hardly ever fail to aid in the diagnosis of chronic disease of the frontal sinus. Commonly the tenderness is very pronounced, at times intense.

The illumination of the frontal sinus, advocated chiefly by Vohsen, has not fulfilled expectations. The picture of the normal illuminated sinus is too variegated and often different on the two sides, so that small differences in the transparency of the two sides prove nothing. In very pronounced empyema the diseased side appears darker, but in chronic pyorrhœa both sides may seem equally light; therefore the negative result of the examination proves nothing, though the positive is of some value.

Regarding the therapy, the first attempt to get at frontal-sinus disease in a bloodless way through the nose was made by A. Hartmann.[2]

There are patients who with every severe cold they contract become at the same time affected with sinusitis frontalis catarrhalis and closure of the canalis nasofrontalis. This, according to Hartmann, causes conditions of the frontal sinus similar to that found in the middle ear in closure of the Eustachian tube. Having this in mind, Hartmann endeavored to force air through the canalis frontalis, just as by Politzer's method the Eustachian tube is opened. Although this method is said to have been of value in some of these cases, it has not to my knowledge had many followers. However, the attention of the specialist was drawn to this route, and already in the next decade Jurasz was able to pass a sound from the nose through the ductus nasofrontalis. In this way he not only let the secretions escape, but also by means of syringing and washing out could treat the mucous membrane of the sinus. It is true that the passing of a sound is not possible in all cases, but by this method of Jurasz a large number of early cases of sinus catarrh and suppurative processes can be cured. For acute and phlegmonous cases this method is of no use, as more energetic treatment is necessary. Likewise it is not sufficient for obstinate cases of chronic suppuration and empyema, as in these such changes in the mucous membrane have usually occurred that it can no longer return to its normal state. And here I must say that,

[1] The anterior wall is the strongest; about the same or slightly less so is the posterior wall, and the inferior wall is the thinnest.

[2] Deutsche medicinische Wochenschrift, 1877.

generally speaking, the importance of the obstruction of the ductus nasofrontalis in chronic purulent processes of the frontal sinus is to this day greatly overrated. It is difficult to give statistics about this, as many authors impart no or insufficient information on the subject. There are, however, many reliable cases published in which the disease, in spite of free discharge of the pus through the nose, has lasted for years, and has, even in spite of syringing and flushing, grown worse. I remember a case in which an orbital fistula was present, injected fluid running out through the nose. The case was not cured, although many different agents were used. The fistula closed several times but always reopened. Permission to operate was refused. From what has been said it is clear that a radical surgical procedure from the forehead is indicated in a number of cases, as encapsulated empyema, mucoceles, or hydrops, and those chronic suppurations in which the mucous membranes have been greatly altered, as well as the severe acute phlegmonous inflammations. Now trephining of the frontal sinus is an old operation, but in its original form it was not satisfactory. The simple opening allowed an exit for the inflammatory products and placed the patient out of danger. But the wound remained open as a fistula for a long time, and even if it closed one could not be sure that it would not reopen. With a sinusitis it is not a question of a bone abscess, which after being emptied heals, but of a cavity lined with diseased mucous membrane. And the same is true of this mucous membrane, as, for instance, of the diseased uterine membrane, the membrane lining the lacrymal duct, etc. They are all incapable of returning to a normal state by means of medical treatment, if they have undergone certain great changes. It is perhaps curious that the idea not only to chisel open the sinus, but at the same time to take away the diseased mucous membrane, has not occurred sooner. This was done occasionally formerly. Thus Kuhnt mentions a case of Runge's of the last century in which the membrane was destroyed by chemical agents. More recently Spencer Watson has recommended strong solutions of iodine and Richet aqua juglandis spirituosa for the destruction of the secreting membranes. But it was only in 1890 that Nebinger recommended extirpation of the pituitary membrane after opening the frontal sinus with a chisel.

Nebinger opened the sinus widely from the front, while Jansen three years later proceeded from below through the orbit. Jansen did this more especially to secure the best cosmetic effect. Both methods are rational, as they fully remove the seat of disease and surely effect a cure. However, in the Jansen method a considerable cavity is formed in the bone, which takes a long time to heal. Jansen expected that the fatty tissues of the orbit would fill the empty sinus, but we cannot count on that with certainty, and as a matter of fact his cases need half a year and longer for healing. I can see no advantage in Jansen's method as compared with that of Nebinger, as the cavity cannot be inspected as well if opened from below as when opened widely in front. Jansen actually had to make several secondary operations to remove portions of mucous membrane that had been left. I strongly recommend a modification of Nebinger's method as described by Kuhnt. This consists chiefly in that not only is the sinus opened widely, but also the whole front wall and sometimes part of the lower wall are removed. The bony edges are bevelled as much as possible, so that no bony cavity but as shallow a depression as possible results, to which the soft parts can be pressed by a bandage. This cannot always be done perfectly, but the cavity of the wound can always be reduced considerably, especially as compared with Jansen's operation. In this way the time of treating is very greatly reduced and the cosmetic effects are bettered. I followed Kuhnt's advice in two cases, the one of empyema, the other of sinusitis pyorrhoica chronica, in both of which rapid recovery took place. Both patients were dismissed from treatment at the end of the first month, while my former cases of sinus trephining always took several months, and sometimes would be discharged having a fistula.

In regard to one thing only do I disagree with Kuhnt and that is the indications. Kuhnt first opens the sinus; then after inspecting the mucous membrane decides whether to remove it or to drain in the old way. This last is no longer considered by me, after having seen the more rapid and better results of the radical operation. I deem it self-evident that in early cases it will always be tried to open the ductus nasofrontalis by means of a sound. Even if this is not accomplished the first time, the rhinologist can still attain his object by obtaining a reduction of the swelling of the mucous membrane near the opening of the canalis nasofrontalis, either by removing the anterior thickened part of the middle turbinated or by other procedures which alone have caused early cases to heal.

No patient will submit to an operation after the first or second slight attack of sinusitis catarrhalis. When he finally agrees to it the mucous membrane has undergone changes which, if one desires to save it, will lengthen the duration of treatment and delay the closure of the wound. The greatest disadvantage, however, is the danger of return. On the other hand, if we obliterate the sinus by extirpation of the mucous membrane, then the result is not only sure but quicker. Against this it is of no moment, in my opinion, that the operation may last from ten to twenty minutes longer, or that the scar may be slightly larger, for disfigurement is little dependent on the length of the incision. The more radical the operation the sooner the cure and the more linear will be the scar. I wish now briefly to describe the technique of the operation, in the main points of which I agree with Nebinger and Kuhnt.

As regards the point of chiselling, most operators recommend a place corresponding to the inner end of the eyebrow. It is at the intersection of two lines, one of which connects the two incisuræ supra-orbitales, the other being drawn perpendicular to the first from the crista lacrymalis anterior. The point lies at the margo supra-orbitalis perpendicularly over the ligamentum palpebræ. Nebinger advises to begin chiselling at the os nasæ. I must confess that the fear which many have of opening the skull gives me little worry. In general the frontal bone consists of a tabula externa and a tabula interna, with spongy bone between. The anterior sinus wall consists solely of tabula externa; so if one chisels carefully one can hardly enter the cranial cavity, as one will see the spongy bone and be warned. Having chiselled through the sinus wall, the mucous membrane will appear as a dark red or perhaps discolored yellowish or black cyst, provided that it has not been destroyed by gangrene.

Not infrequently the sinus contents pulsate, which in no way points to a defective posterior wall of the sinus, but, as Boeckel showed, is always present when a bony-walled cavity is opened in which there are tissues containing many vessels. Such pulsations have been noted also in the antrum of Highmore and in the marrow canals of bones. After opening the sinus one determines the size of the cavity by means of a sound, and then removes the anterior and possibly part of the inferior wall. The sharp edges of the bone are bevelled off and one tries to make instead of an irregular cavity as flat a surface as possible. The more closely the skin is adapted to the subjacent bone, strictly avoiding the formation of a pouch, the

more rapidly will the healing occur. The mucous membrane is thoroughly removed, the upper part of the ductus nasolacrymalis being also robbed of its mucous membrane. If this is closed it is unnecessary, nay, even harmful, to open it. Formerly when one did not primarily remove the mucous membrane, it was of course necessary to establish a communication with the nose, either by passing a sound through the ductus nasofrontalis or by breaking into the nose, in order to give the secretions an outlet.

If one obliterates the cavity in the above-described manner, however, the ductus nasofrontalis not only becomes superfluous but its artificial opening may do harm by allowing inflammatory products from the nose to come in contact with the wound. The after-treatment is to be in accordance with the ordinary rules of surgery. Even when one has operated in strongly inflamed tissues and cannot sew, there results at worst after this operation a small abscess cavity, the absolute healing of which is but the question of a short time.

MOTHER AND CHILD.

By F. W. EPLEY, M.D.,

NEW RICHMOND, WIS.

Of all the suffering to which human flesh is heir, none perhaps is more acutely painful and distressing than that caused by sore nipples in the act of nursing. How often do we see the young mother writhing with pain and the big tears streaming down her cheeks in her heroic attempts to nourish her offspring—this crowning act of motherhood, this climax of maternal affection turned into tortures akin to those of the Inquisition. If we look for the cause we shall not have to search long. Improper habits of dress have cramped the glands and embedded the nipples within them, or if begun early enough have prevented the development of the nipple, so that if any have grown they are distorted and retracted out of all semblance to the proper shape and figure. This in turn has cramped and distorted the larger milk tubes leading to the nipple, until when lactation takes place it is nearly or quite impossible for the infant to get hold of it, and if it does the result is that the folds of inverted skin are drawn out, the accumulations of skin cells are easily displaced, leaving only the most delicate layer of true skin to withstand the irritation and violence of the nursing act. This it is wholly unable to do, and the result is that in the drawing out of the nipple the skin is fissured. The crack becomes deeper and deeper, nursing more and more painful, until the poor mother gives up in despair. By this time infection has taken place, or by reason of the distorted milk ducts the proper discharge of the lacteal fluid has been impossible, and mastitis and abscess with all their painful sequelæ supervene.

The remedy is just simple, plain common sense, but this must be applied before confinement; it is too late after lactation has actually begun. Let us see what we have two months before the end of gestation: a small, stunted, deformed, retracted, very tender nipple—exactly what we do not want in any particular. We want for baby's use a large, long—I never saw one too long—well formed, protruding, tough-skinned nipple. Can we make it? We can, by exactly the same process by which any part of the body may be developed and toughened, namely, by frequent regular exposure, use, and irritation. At the end of the seventh month the nipples should both be subjected to a systematic course of massage, pulling, rubbing, rolling and stripping, and especially the latter. This cannot be done too often or too thoroughly. The result will be most gratifying. The otherwise wholly useless and worse than useless organ will be prepared for its work; lactation will be free and painless. The glands will be well and easily emptied; the nightmare of fissures, mastitis, and abscess will disappear never to return, and the young mother can hug her baby to her breast and say how sweet is maternity.

In my early years of practice I have experienced all the evils of neglect and mismanagement of the maternal font, until, driven to desperation almost by my repeated failures to relieve this most distressing condition, it occurred to me to put into practice this simple common-sense plan of preparation, and I have had the extreme gratification of seeing all my patients so treated go through lactation with only sensations of pleasure.

My only defence for the principles embodied in this paper is that they are based on observation in an active practice of general medicine, extending over a period of twenty years, and the rearing of a family of five children, who are almost never ill.

When a baby presents himself for admittance into the family circle he should receive a warm welcome. The temperature of the welcome should be maintained until the little fellow is able to kick and jump with sufficient vigor to maintain a healthy circulation. If he is strong and vigorous he should have one good general bath, after that he should be kept simply clean. The common practice of giving the poor little creature a daily scrub all over with soap and water is to be discouraged. Soiled or wet linens should never be allowed to remain in contact with the delicate skin, and when changed should be replaced with warm, soft, clean ones. The eyes should be kept clean, but never washed with the same cloth used for the general bath. For this purpose, a clean cloth, clean water, and no soap should be used. Feed regularly, but not oftener than once in two hours. I do not lay this down as an arbitrary rule never to be broken, but it is an important point; the little stomach needs rest, and much can be done toward the fostering of the digestive and assimilative powers by an intelligent observation of this principle. Teach the baby to drink early. Wash his mouth, gums, tongue, and cheeks regularly. If the mother is weak, sick, thin in flesh, or while nursing loses flesh to any marked degree, if the baby does not seem to thrive, or the mother's milk is not sufficient and has to be supplemented by other food after she has resumed her accustomed place in the household, wean the baby. A good healthy cow is far preferable as a commissary department for baby than a mother's breast which is wanting in any essential quality. I did not read this in a book or hear it in a lecture room. In the selection of a cow great care should be taken to get one free from disease. She should be tested by a veterinary for tuberculosis; kept in clean, dry quarters, fed regularly on clean hay and bran, and in winter given water slightly warmed to drink. If she becomes heated, worried, or excited in any way unduly, the milk should be suspended and some preparation containing milk as a basis should be used until the cow regains her normal condition. Use simple nipples pulled over the mouth of the bottle. Teach baby to drink as soon as possible and discard the bottle altogether. For the first year only soft woollen fabric should come in contact with the skin, and there should be plenty of outer clothing to keep the body warm. It is true infants have great powers of resistance, but it is a fact that many a baby has been buried because the mother has been overzealous to have her baby look prettier than her neighbor's; has changed the wool fabrics for light white goods. She has not realized the chilly air as evening approached, has put the little one to bed in its cotton underclothes or nightdress; the baby during the night has become

chilled and a fatal cholera infantum or enterocolitis has been set up. No matter how warm the night the bowels should be covered with flannels. At home is the place for the baby under all circumstances and conditions. There is no exception to this rule, especially during the heated summer months; new faces, strange surroundings, and the fatigue of travel are prolific sources of indigestion and its natural train of evils. It is these and the natural strain upon the delicate nervous system incident to them, and not the change of food, which make baby sick.

SOME THOUGHTS ON TEACHING ANATOMY.

BY J. W. HENSON, M.D.

THE times demand that graduates in medicine should be better prepared. Requiring a high percentage upon examination is a good thing. It is one means to gain the end, but it is insufficient. To pass creditably a pretty rigid examination is not always a proof of proficiency. What then? It behooves us as teachers to make our course of instruction more thorough and attractive. I use the latter word advisedly, for, unless made attractive, teaching can scarcely be thorough. How shall we accomplish this in anatomy? Every one will subscribe to the statement that impressions made upon the brain through the medium of sight are far more lasting than others.

What is told us we forget, however exciting the narrative may be. What we see our memory retains almost indefinitely, even the details. Anatomists believe this, as shown by the importance attached to dissecting. If this same principle, viz., appealing to the sense of sight, be applied to our preparation of men for dissecting, our teaching will be both attractive and thorough. So much is expected of the dissecting-hall that students are not properly prepared to enter it, and as a result do poor dissecting and, worse still, learn not half so much from what is seen there as they should. Therefore let us make more use of diagrams, preserved dissections, and models, models of viscera and regions, each made to take apart and show the interior of a viscus or the relations of all the structures of a region. Often after the use of the roughest diagram students will report that the point is for the first time made clear. Accentuation is the secret of this success. The same thing obtains in the use of models. The parts in a dissection may seem all confusion to the mind of a beginner, while the clear outlines, the very boldness of a model will appeal to the mind of the dullest. The study of relations is greatly facilitated, not only by this same accentuation, but by the ability to remove the parts layer by layer or piece by piece and replace at will. Upon one occasion a class was for the first time listening to a general description of the cerebrum—the surfaces of the hemispheres, longitudinal fissure, etc. Several brains just taken from cadavers and in good condition were distributed. In spite of this a blank expression, almost universal, greeted the remarks. In desperation, the cerebrum was compared to the half of the kernel of a walnut. Instantly the light of comprehension appeared upon the faces of the men and the description was then easy. This occurrence only illustrates a constant experience which proves the following: First, that the mind of a beginner is usually slow to understand well a demonstration upon some part of the human subject. Secondly, that the same facts are quickly and clearly comprehended when some simple but homely imitation is used to illustrate. Thirdly, that upon the mind prepared by some such rough illustration a demonstration upon the cadaver makes lasting impression. Properly prepared and preserved, dissections can be made almost as useful as models, the several structures being brought out by coloring. Of every region there should be several dissections, each showing a separate layer—thus relations can be clearly observed. Viscera can be hardened carefully, cut in pieces (so that every part of the interior may be demonstrated), the necessary coloring done, and each piece varnished. The result is highly satisfactory.

Progress of Medical Science.

Rupture of Interstitial Tubal Pregnancy; Suture; Recovery.—A case is reported by Tytler in the *British Medical Journal*, June 12, 1897, of a woman, thirty-one years old, who had borne seven children, and came under observation in a state of collapse from internal hemorrhage. Menstruation had been absent for six weeks, and the woman had been seized with severe pain at the bottom of the abdomen, although after a few hours she arose and resumed her work. The menstrual flow returned after this, but the discharge was dark and scanty. Five days after the onset of the acute attack noted, while washing clothes the woman was again suddenly seized with great pain in the stomach and became as cold as death. She was put to bed, and remained in a state of great collapse for five days. At this time she presented marked pallor, coldness of the surface, feeble pulse, etc. On physical examination of the abdomen a rounded mass was found, softish and smooth, low down and to the right of the middle line. Impulse applied to the cervix was communicated to the tumor. There were mucus and blood in the vagina. The cervix uteri was deeply torn on the left side. The thoracic and other organs were normal. Percussion over the lower part of the abdomen was clear, and nothing could be found in Doulgas' cul-de-sac. For a day or two the patient appeared to rally, but at the end of this time she began to vomit and grew much worse. A small exploratory incision was now made between the pubes and the umbilicus, with a view of verifying the diagnosis of ruptured tubal pregnancy. On opening the peritoneum the abdomen was found to be full of black clotted blood. The incision was at once enlarged and a hand introduced to compress the right broad ligament, to prevent renewed bleeding. There was, however, no sign of recurrence or of recent bleeding. A rent, nearly two inches long, was found in the uterus on the right side, extending from the middle to the origin of the right oviduct. The right side of the fundus was twice the breadth of the left. The rent opened into a spherical cavity filled with fibrin, which was removed, without disclosing, however, any trace of cyst wall or ovum. After clearing the peritoneal cavity, the right tube and ovary were removed. Then after carefully washing out the fundus of the uterus, the rent was closed with four catgut sutures, the edges being inverted slightly. After again carefully clearing out and inspecting the peritoneal cavity, a drainage tube was introduced and the abdomen closed in the ordinary way. The patient made a good recovery and was discharged some six weeks after the operation, with a small sinus at the lower end of the wound at the site of the drainage tube. This sinus remained open for some months, discharging a suture now and again until it healed. About eight months later the patient had a severe attack of dysentery, following which there was more or less diarrhœa at each menstrual period.

MEDICAL RECORD:

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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CLINICAL EXPERIENCES WITH TR TUBERCULIN.

THE editor of the *Deutsche medicinische Wochenschrift* has undertaken to secure from various clinical sources reports of the results obtained from the employment of Koch's modified tuberculin in the treatment of different forms of tuberculosis, and presents in the issue of that journal for July 8th two communications upon this subject. The authors of these papers are extremely cautious and conservative in their statements and disclaim any suggestion of committing themselves to final conclusions in the matter, which it is pointed out can be reached only after an experience of months and even of years.

Bussenius reports the results in nineteen cases observed during three months at the clinic of Professor Fraenkel at the Charité for the treatment of diseases of the nose and throat. Of these cases twelve were examples of laryngeal tuberculosis, four instances of lupus, two examples of pulmonary tuberculosis solely, and one was an example of asthmatic attacks. Of the whole number the treatment was completed in fifteen, in one it was intermitted, and in the remainder it was still in course of application. The fifteen cases received in all three hundred and fourteen injections, the remainder twenty. The largest number of injections received by a single patient was twenty-five. The largest single injection consisted of four cubic centimetres. The longest period during which the treatment was continued was sixty-five days, the shortest twenty-nine.

The fifteen cases in which the treatment was carried out to its conclusion yielded no reaction to Koch's old tuberculin. Only four of the cases yielded no reaction whatever, local or general, to the injections. The greatest elevation of temperature in a previously non-febrile case following an injection was 2.7° C. The reaction and its quality differed with the specimen of tuberculin employed. One preparation was capable of inducing a reaction in the same person in whom a larger dose of another preparation at a previous time had induced none. The frequency of pulse and respiration corresponded as a rule with the height of the temperature. Elevation of temperature was attended with evidences of nervous disturbance, such as headache, languor, twitching, palpitation of the heart, which sometimes occurred also independently of such elevation. Two patients complained regularly of oppression of the heart and profuse perspiration. In a series of examinations of the blood no noteworthy alteration in the number of colorless corpuscles was found. In two of the cases reported enlargement of the spleen was made out.

Of the fifteen cases in which the treatment was continued until its completion there was gain in weight in seven, loss of weight in five. Such loss as took place occurred principally in connection with the administration of large doses and violent reaction. In no instance did an abscess form at the site of injection, but in ten of the nineteen painful infiltration of the subcutaneous tissues took place. In two cases the local lymphatic glands became slightly enlarged. In the cases of pulmonary tuberculosis the results were not considered conclusive, but in two in which tuberculosis and syphilis were associated the employment of TR after the cure of the syphilis was followed by the disappearance of cough and expectoration, together with tubercle bacilli. Tuberculosis of the pharynx and larynx showed no greater improvement than is usual with ordinary topical treatment. Three cases of lupus, however, were quite cured.

At the medical clinic of the University of Bonn Schultze treated nine cases of tuberculosis with TR. In none was any such aggravation observed as followed injections of the original tuberculin. In one case tuberculosis of the larynx developed during the progress of the treatment, with loss of weight, and the patient declined to submit to further treatment. In another the treatment was discontinued on account of the development of diarrhœa, probably of tuberculous origin. In this case there was at first gain, but later there was loss of weight. In four other cases there was no noteworthy change. In still another improvement took place in a dry pleurisy and also in the general condition. In the remaining two improvement took place, and in one of these pronounced perichondritis of the arytenoid cartilage was cured.

VACCINATION IN ENGLAND.

IN many districts of England there exists the strongest possible prejudice against vaccination. Nothing can shake the belief of the rabid antivaccinationist that the operation is distinctly harmful; he is not satisfied with disallowing its efficacy. To statistics and proofs of every kind he turns a deaf ear or explains them away to his own satisfaction. He is an enthusiast in the support of his cause, and will pay fines time after time and even go to prison rather than allow his children to be vaccinated. The causes for this decided stand against vaccination are not altogether easy to explain. One reason may be that the present strict enforcement of the law of compulsory vaccination is looked upon as an infringement on the liberty of the subject; ignorance is doubtless another; and lastly the carelessness of many of the public vaccinators is an important factor in the case. The report of the royal commission on vaccination in England and particu-

larly in regard to the late small-pox epidemic in Gloucester has just been published, and should tend to convince disbelievers of the efficacy of Jenner's discovery. The commissioners, one and all, after a careful and unprejudiced consideration of the subject, commit themselves to the opinion: 1. That vaccination diminishes the liability to be attacked by the disease. 2. That it modifies the character of the disease. 3. That the protection it affords against attacks of the disease is greatest in the years immediately succeeding vaccination (say for nine or ten years). 4. That after the lapse of this period the efficacy of vaccination rapidly diminishes, but that it is still considerable in the next quinquennium and probably never altogether ceases. 5. That its power to modify the character of the disease does not diminish so rapidly as its power to prevent attack. 6. That revaccination restores the protection which lapse of time has diminished. 7. That the beneficial effects of vaccination are most experienced by those in whose case it has been most thorough. In Gloucester at the time of the outbreak vaccination had been practically abandoned, and figures show that the disease and mortality were nearly wholly confined to the unvaccinated. The epidemic was soon exterminated when the vaccination machinery had been effectively organized. It is a remarkable fact that there was not a single case of small-pox among the nurses or workers, all of whom had been revaccinated. Estimates which can be relied upon put the yearly death rate from small pox in England during the latter half of the eighteenth century at the proportion of three thousand to every one million of the population; with the present number of inhabitants this would mean one hundred thousand cases a year. In 1890 there were in England only sixteen deaths from small-pox, but since then there has been a most alarming increase. This increase is without a doubt due to the antivaccinationist movement.

The existing laws are very unpopular and possibly an amendment of them might be beneficial, but the demand of the opponents of vaccination that they should be totally repealed would be nothing less than a national calamity.

THE DISUSE OF ERGOT IN PRESENT-DAY MIDWIFERY PRACTICE.

The abuse of ergot has led to so radical a change in the views of medical men as to the useful qualities of that drug in obstetric practice that the other extreme has been reached, and it is now scarcely ever used. The great majority of obstetricians nowadays seem to have arrived at the opinion that the use of ergot is not indicated in any stage of labor, but that after the uterus is completely emptied of its contents it may prove valuable in the prevention of post-partum hemorrhage. Dr. T. More Madden, of Dublin, joins issue with these conclusions, and holds to the view that under many conditions of labor the use of ergot is most beneficial. Dr. Madden's experience has been so extensive that his opinion must carry weight. He says that, as regards the circumstances under which ergot may be employed in midwifery practice, "judging from the recent literature of this subject, it may not be superfluous to premise that to use ergot or any of its preparations safely and effectively during parturition the presentation should as a rule be cranial; that there should be no disproportion between the fœtus and maternal parts, nor any obstacle to a deliverance in the genital tract; that the os uteri, if not previously fully dilated, should at least be sufficiently dilatable to allow speedy delivery by the forceps whenever that may become necessary; and that a preparation of ergot should be selected and a dose given calculated to produce the required ecbolic effect. Under such conditions ergot may be given with utility when required either before, during, or after the second stage of labor, viz.: 1st. In some instances: (*a*) of delay from inertia of the uterus before full dilatation of the dilatable os and in which there is any evident danger to either mother or child from protraction of labor. 2d. It may be administered during the second stage; (*b*) in nearly every case of long delay from inertia wherein the presentation is natural and the delivery not otherwise impeded, or in which (*c*) there is then reason to apprehend either the probability of subsequent hemorrhage or any such complication as may call for its use. 3d. During the last stage of labor this ecbolic may be employed (*d*) to hasten the expulsion of the placenta when delayed by inertia, or (*e*) for the arrest of hemorrhage. 4th. After labor ergot may be resorted to either immediately (*f*) to prevent or check flooding, or subsequently (*g*) to produce such tonic or permanent contraction as will effectually seal up the uterine vessels and so lessen the liability to subsequent septic invasion; or (*h*) to effect the expulsion of clots and so arrest afterpains. 5th and lastly, (*i*) to stimulate such contraction as may quicken or secure the process of involution after parturition." Dr. Madden believes in bold, full, and effective dosages of ergot, and uses the fresh liquid extract of the British Pharmacopœia. The dose he gives is two or three drachms by the mouth and a drachm by deep hypodermic injection in the gluteal region at the same time. The abstract of one hundred and fifty cases in which ergot was used in all stages of labor as well as after the birth of the child are given. In one hundred and forty-eight cases the result was favorable to the mother. The paper concludes with these words: "My experience on this subject points to the conclusion that the dangers which are now so commonly ascribed to the use of ergot in obstetrics are probably largely attributable to its misuse, or administration in unsuitable cases, or in insufficient doses, and therefore furnish no argument whatever against its judicious and proper employment."

En Route to Moscow.—The *Normannia*, which was prevented from sailing on July 29th through the discovery of a crack in one of her crank-shaft journals, had on board thirty physicians from Mexico who were bound for Moscow. They sailed two days later on another vessel.

News of the Week.

Dr. Charles G. Duncan, of Socorro, N. Mex., has been appointed delegate from the New Mexico Medical Society to the Montreal meeting of the British Medical Association.

Medical Schools in Denver.—The supreme court of the State of Colorado has forbidden the University of Colorado from carrying on any part of its medical department in Denver, because the constitution locates the university itself at Boulder. In consequence of this the members of the faculty resident in Denver have resigned, and most of them have united with the medical department of the University of Denver. Among those who have thus strengthened the Denver Medical School are Dr. H. T. Pershing in diseases of the mind and nervous system, Drs. S. G. Bonney and H. B. Whitney in medicine, Dr. Charles A. Powers in Surgery, Dr. Walter A. Jayne in gynæcology, Dr. George B. Packard in orthopædics, Drs. L. E. Lemen and J. W. O'Connor in clinical surgery, Dr. T. E. Taylor in clinical obstetrics, and Dr. John Chase in clinical ophthalmology. The faculty of the school has been further enlarged by the election of Dr. P. V. Carlin in obstetrics, Drs. W. H. Bergtold and W. B. Fenn in pathology, and Dr. Carroll E. Edson in therapeutics.

The Results of the Pennsylvania State Medical Examinations.—Of four hundred and forty-five applicants for license to practise medicine examined by the Pennsylvania State board in June of this year eighty-three failed to pass a percentage of 18.56. The whole number included twenty women, of whom seven failed to pass. The examinations were said to have been a little more rigorous than in previous years. In a spirit of equity the papers of those that failed were examined a second time by the board.

A Hospital without a Site.—The governor of Pennsylvania has felt constrained to veto an appropriation for $10,000 for the American Hospital Association of Mahanoy Township, Schuylkill County, for maintenance for the fiscal year beginning June 1, 1898, because the association is yet without a hospital building and without a site for the erection of one.

Lehigh Valley (Pa.) Medical Association.—The seventeenth annual meeting of the Lehigh Valley Medical Association was held at Water Gap, Pa., on July 28th and 29th. Dr. L. Duncan Bulkley, of New York, delivered an address on "The Importance of Little Things in Dermatology." Dr. Mary Greenwald, of Stroudsburg, was elected *President;* Drs. Howell, of Wilkesbarre, Wilson, of Bethlehem, Mensch, of Montgomery County, and W. C. Albertson, of Belvidere, *Vice-Presidents;* Dr. Charles McIntire, of Easton, *Secretary;* Dr. W. S. Stewart, of Wilkesbarre, *Assistant Secretary;* Dr. A. Stout, of Bethlehem, *Treasurer.*

The Indian Territory Medical Association.—At the regular semiannual meeting of this association, held at South McAlester, I. T., June 29 and 30, 1897, the following officers were elected for the ensuing year: *President,* Dr. E. N. Allen, South McAlester, I. T.; *First Vice-President,* Dr. G. W. West, Eufala, I. T.; *Second Vice-President,* Dr. J. B. Roleter, Oklohoma City, O. T.; *Secretary,* Dr. LeRoy Long, Caddo, I. T. The next meeting of the association will be held at Muskogee, I. T., December 7 and 8, 1897.

An Alumni Association of the German Hospital in this city has been organized with the following officers: *President,* William K. Kubin; *Vice-President,* Franz Torek; *Treasurer,* Alexis V. Moschcowitz; *Recording Secretary,* Selian Neuhof; *Corresponding Secretary,* Gustav G. Fischlowitz. The association will hold semiannual meetings in April and November of each year.

The International Congress.—Drs. Danilevski, of Kharkov, and Frédéricq, of Liége, will not deliver addresses at the general meetings. In place of them Dr. Metschnikoff will deliver an address on "The Plague," and Dr. Lannelongue one on "The General Treatment of Surgical Tuberculosis." There is some complaint, apparently well founded, of dilatoriness on the part of the management of the congress. No information concerning hotel accommodation, transportation, etc., was given out until it was too late for many living at a distance from Moscow to profit by it. The offer of free railway tickets in Russia is very liberal, but as it applies only to those who have cards of membership, several from this country who have sent their subscription but received neither membership card nor receipt are unable to avail themselves of the offer.

Substantial Recognition of Dr. Sanarelli's Services.—The Uruguay legislature has conferred honorary citizenship upon the discoverer of the yellow-fever microbe, and has also voted him a donation of ten thousand dollars, at the same time recording its regret that "the unhappy condition of the country does not admit of its doing more to evince its gratitude to a physician and naturalist who has already laid those regions under so many obligations."

News for New Yorkers.—The heat-wave that has recently rolled over the United States now happily shows signs of abatement. Since the first of this month, however, about two thousand cases of severe prostration and three hundred and fifty deaths due to the excessive heat have been reported in New York alone. The deathrate in other parts of the States has registered a corresponding increase. It looks as if the elements have chosen that part of North America as their special arena when they want to "run amuck."—*Medical Press and Circular,* July 14, 1897.

Burned by Roentgen Rays.—The daily papers report a case of extensive burning by *x*-rays in the person of a young woman who was skiagraphed in order to determine the nature of a supposed affection of the antrum of Highmore. It is stated that all the hair has fallen from one side of her head and that the skin of the face and neck was also blistered over a large surface.

A Hospital Quarrel.—Owing to differences which have arisen between the medical board and one of the consulting surgeons of the Bayonne Hospital, it is reported that the board of managers has removed the entire consulting staff. It is understood, however, that all will be reappointed with the exception of the one member whose action in a certain case was the cause of the dissension.

Malaria Following Flood.—It is reported that malaria prevails to an unusual degree along the Mississippi lowlands which were flooded by the high water last spring. When the flood receded many lakes and pools of stagnant water remained, and to the presence of these is attributed the increase in the prevalence and mortality of the disease.

An Unpleasant Interruption to an Excursion.—Twenty-seven American tourists are on board of the steamer *Passport* in Toronto Bay in quarantine. They arrived there from Montreal on August 1st and intended to leave by train for their homes the same day, but the medical health officer at Toronto met the steamer with a tug and informed the captain that there was a small-pox case on board and that the passengers and crew would have to remain in quarantine twelve days. The man who was the cause of the detention had been under observation at Belleville, but escaped and boarded the steamer when she touched there.

The Water Supply of Boston.—The State of Massachusetts has undertaken to supply the metropolitan water district, including Boston and twenty-seven other towns and cities, with pure water from an immense lake, nine miles in length, covering forty-one hundred and ninety-five acres, three hundred and eighty-five feet above high-water mark, and with an average depth of forty-six feet. It is to take the place of what is now a busy manufacturing district in the valley of the upper Nashua River. The greater part of two towns and five villages, including churches, schools, the houses of seventeen hundred and eleven people, two large mills, and hundreds of small farms will be wiped out of existence to provide for this enormous reservoir. Its construction made necessary the passage of a law, said to be without a precedent in this country, which provides that the State shall pay to such employees of the mills at the time of the confiscation of the property a sum equal to six months' wages. The State also treats liberally people with established businesses, the value of which the seizure of land for reservoir uses completely destroyed, by a liberal allowance for accumulative or prospective damages. When all this is done, the people of Massachusetts will have a bill variously estimated at from $30,000,000 to $50,000,000 to pay.—*The Sanitary Era.*

Suicide a la Parisienne.—Four seamstresses in Paris recently decided that life was not worth while, and perhaps they had cause to be tired of it, for the husband of the eldest, who was but twenty-five years old, was insane, another had been deserted by her husband, the third had been jilted by her lover, while the youngest, aged seventeen years, joined the others out of sympathy. They dined together one day and then passed a jolly evening, drinking cherry brandy. When the bottle was empty they signed a statement to the effect that they died with pleasure, closed the door and windows tightly, and then lighted a charcoal fire, the fumes of which killed them. One of the women was the great-grandniece of a former archbishop of Paris, who was executed during the reign of terror.

Obituary Notes.—Dr. John Joseph Curran, of this city, died two weeks ago of heart disease. He was thirty-seven years old and was born in Newport, R. I. After graduation from St. Francis Xavier's College, he studied medicine at the College of Physicians and Surgeons, where he received his degree of M.D. in 1888.—Dr. E. M. Ike, of Altoona, Pa., died on July 29th as a result of a laceration of the hand by a broken bottle. He was born March 21, 1867, and was graduated from Jefferson Medical College in 1888.

Results of a Tank Inspection.—The special inspection of water tanks in tenement houses ordered by the board of health last month has resulted in the discovery that 1,343 out of 6,060 tanks examined were in an improper condition. The board has ordered the owners of the buildings in which the unhealthy tanks were found to cleanse them forthwith.

The St. Louis "Smoker."—In a recent issue we published a charge made by the *Medical Fortnightly* that a "smoker" held recently at St. Louis degenerated into such disgusting story telling that several of the invited guests were compelled to leave the room. As a matter of fair play we also inserted a refutation of the charge, glad of the opportunity to do so without any expression of opinion on our part. Since then we have received a letter from Dr. Norbury, editor of the *Fortnightly*, reiterating the charges, and from his standpoint substantiating them on the testimony of several gentlemen who were present. We mention these facts in order to say that we hardly think it worth while to discuss the subject further, being willing to give any benefit of doubt on the side of a charitable construction of the difference of opinion, thus impliedly holding up the decency and dignity of the profession as a whole. We cannot see that anything more can come of this by further discussion of the pros and cons.

The Rocky Mountain Interstate Medical Association.—This is an organization of the regular medical profession of Colorado, Utah, Montana, Idaho, Wyoming, New Mexico, and Arizona. The idea of this society was formulated by Drs. C. K. Fleming, J. W. Hull, Leonard Freeman, and Robert Levy, of Denver, Col., in the summer of 1896. A circular letter was sent by them to prominent physicians inviting their opinion as to the desirability of such a society and their co-operation in its organization. The plan received the hearty and almost universal approval of individual physicians as well as the indorsement of the Colorado, Utah, and Montana State medical societies. Accordingly a committee of three, from each of these seven States, was appointed to draft a constitution and

bylaws and to organize the society. This committee met at the Knutsford Hotel in Salt Lake City, July 24, 1897, with the following members present, viz.: Colorado: Drs. C. K. Fleming, Clayton Parkhill, and D. H. Coover, of Denver. Utah: Drs. C. P. Hough, C. G. Plummer, and A. S. Bower, of Salt Lake City. Montana: Drs. C. K. Cole, of Helena; Henry Chapple, of Billing, and T. J. Murray, of Butte City. Wyoming: Dr. E. Stuver, of Rawlins. The committee organized by electing C. P. Hough president, and E. Stuver secretary, and at once proceeded to the consideration and adoption of a constitution and bylaws. The code of ethics of the American Medical Association was adopted. The following officers were elected for the ensuing year, viz.: Charles P. Hough, *President*, Salt Lake City; C. K. Cole, *First Vice-President*, Helena, Mont.; Clayton Parkhill, *Second Vice-President*, Denver, Col.; E. Stuver, *Secretary* and *Treasurer*, Rawlins, Wyo. It was decided to hold the first annual meeting in Denver, in June, 1898, during the meeting of the American Medical Association.

Death and Honorary Distinction.—M. Caplat, director of the Departmental Asylum of Nanterre, in France, who received the cross of the Legion of Honor on the occasion of a visit paid to that place by President Faure, died the following day from excessive joy. A knighthood of the same order also proved fatal to an architect of the Assistance Publique.

Inflammable Hair Wash.—A woman in London died recently from burns received through the ignition of a petroleum hairwash which was being applied to her head by a hairdresser. There was no open flame near her at the time, and the explanation given of the accident is that the inflammable material was set fire to by an electric spark produced by the friction of the barber's hand on the hair.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending July 21, 1897. July 27th.—Passed Assistant Surgeon S. S. White ordered to report on the *Concord* immediately. July 28th.—Surgeon J. D. Gatewood ordered to Brussels, Belgium, and Berlin, Germany, as delegate, then to return. July 29th.—Assistant Surgeon J. C. Thompson ordered to the naval laboratory, New York. Surgeon H. E. Ames, when detached from the *Cincinnati*, ordered home and granted two months' leave. Surgeon J. E. Gardner detached from the *Amphitrite* and ordered to the *Dolphin*. Surgeon F. Anderson detached from the *Dolphin* and ordered to the hospital, Yokohama, per steamer of August 14th. Surgeon H. G. Beyer detached from Museum of Hygiene and ordered to the *Amphitrite*. July 30th.—Passed Assistant Surgeon T. B. Bailey detached from the *Machias* and ordered to the *Yorktown*. Passed Assistant Surgeon J. S. Page detached from the *Yorktown* and ordered to the *Olympia*. Passed Assistant Surgeon G. Rothganger detached from the *Pinta* and ordered to the *Wheeling* August 10th. Passed Assistant Surgeon M. R. Pigott detached from the *Olympia* and ordered to the *Machias*.

Obituary.

JOHN J. H. LOVE, M.D.

Dr. John J. H. Love died suddenly on the morning of July 30th, while at the bedside of a patient. Up to the moment that he was stricken he had apparently been in the enjoyment of perfect health.

Dr. Love was born in Harmony Township, N. J., on April 3, 1833. He was educated at Lafayette College, subsequently taking his medical course at the New York University Medical School, where he obtained his degree of M.D. in 1855. He at once began practice in Montclair. At the breaking out of the civil war he enlisted, serving as surgeon to the thirteenth New Jersey volunteers, and later in the twelfth corps of the army of the Potomac. At the close of the year 1864 he received an honorable discharge and returned to Montclair, where he resided continuously up to the time of his death. He was always prominently identified with the interests of Montclair, which was but a comparatively small village when he first went there to live, although he never held any public office except that of school commissioner. It was in great measure to his labors that the present public-school system of Montclair owed its existence, and he was always occupied in some capacity with its management, first as trustee and later, under the changed system, as commissioner. He was one of the organizers of Trinity Church in Montclair and was on its board of trustees. He was also active in the establishment of the Young Men's Christian Association and in the foundation of a public library. He was a founder of the Montclair Club and of the Bank of Montclair, was a member of the Loyal Legion, of the Grand Army of the Republic, and of many medical societies.

On Tuesday, April 16, 1895, a banquet was given to Dr. Love in the Montclair clubhouse, on the fortieth anniversary of his coming to the town to practise, in recognition of his services to the community. Over two hundred guests, laymen and physicians of Montclair and neighboring places, were present. Congratulatory addresses were made by Mr. John H. Wilson, who presided, and by Messrs. Philip Doremus, Edwin B. Goodell, John R. Howard, Starr J. Murphy, Dr. George F. Shrady, Hon. Franklin Murphy, and the Rev. Dr. A. H. Bradford.

Dr. Love was a man who did his duty and more than his duty in every station in which he was placed, whether as a soldier, a public-spirited citizen, a man of family, or a physician. His many acts of kindness and of unostentatious charity endeared him to all his patients, and his sterling qualities as a man and a citizen raised up for him a host of friends and admirers such as it is given to few men to possess.

The funeral services were held on Monday afternoon, not in the church which he attended, but in the Congregational Church, that being selected because it was the largest in the town, yet numbers were unable to gain admission. The services were conducted by the Rev. Orville Reed, pastor of Trinity Church. Among the pallbearers were Joseph Van Vleck, John R. Howard, Philip Doremus, John R. Livermore, and the medical staff of the Mountainside Hospital, Drs. Whitehorne, Brown, Halsey, Case, Francis, and Newton. Delegations were present in the church from the veterans of the thirteenth New Jersey volunteers, the Loyal Legion, the Grand Army of the Republic, and from the various business, social, and medical associations with which Dr. Love was identified. Dr. Love's wife, son, and two daughters survive him.

Clinical Department.

A CASE OF MIGRATORY PNEUMONIA IN A PARTURIENT WOMAN.

BY H. P. RITCHIE, M.D.,

[illegible], MISS.

THE following is a brief report of a case of lobar pneumonia, which is of exceptional interest because of its unusual course, extreme severity, and happy termination.

Mrs. B——, aged thirty, seamstress, family and personal health record negative, was delivered by me, on September 19, 1896, of her fourth child, after a perfectly normal labor, from which she made a rapid and uneventful recovery.

On October 11th she first ventured from the house, and some hours after her return was seized with a pronounced chill and severe pain in the right lower thorax. The onset was marked and sudden, she being engaged at that time in her ordinary household duties and having no premonition of the attack. Five hours after the onset her temperature was 103° F.; pulse, 110; respiration, 28, accompanied by severe pain. The classical signs of consolidation soon manifested themselves in the right lower lobe, and the case appeared to be one of frank lobar pneumonia.

When she was seen on the third day a friction murmur was present over the extreme right base, and with a small area of movable flatness determining the presence of a complicating pleurisy with a small effusion.

During the night of the 16th the crisis occurred, and when she was seen on the morning of the 17th her temperature was 98.4° F.; pulse, 96; respiration easy, and patient comfortable. Strict instructions as to rest in bed were given and wholly disregarded by the patient, and on the evening of the same day I was called to find the patient just recovering from a severe chill, with dyspnœa, pain in both apices, temperature of 103° F., and pulse of 140.

The next day Dr. Charles L. Greene kindly saw the case with me, and involvement of both apices was suspected and later confirmed by unmistakable signs of consolidation. The middle lobe, however, remained free from consolidation, although the breath sounds were much exaggerated. The percussion note, however, was hyperresonant, and the changes in the pitch in the descent from the dull note of the apex to the hyperresonance of the middle lobe, and thence to the duller note of the consolidated but resolving lower right lobe anteriorly, and to the flat note over the fluid in the back, were very marked. Thus at this time the act of respiration was carried by the right middle and left lower lobes.

On October 20th there was increased expectoration; large râles appeared anteriorly in the right lower lobe, while the note posteriorly was obtained over a smaller area. Both apices presented most pronounced and typical signs of consolidation; accentuation of pulmonary second sound remained well marked.

On October 21st, right lobe resolving, no change in apices. Temperature, 102° F.; respiration, 35; pulse, 118. Widal's test for typhoid fever was tried, with negative results.

This condition continued until October 25th, when the temperature dropped to 100.4° F.; with respiration, 26; pulse, 96 and strong. Breathing was easy and there was profuse expectoration of rusty sputum. Râles of resolution had appeared over the upper lobes, and the patient was very comfortable. The temperature, however, continued to run irregularly from 100 to 102° F. for several days.

On October 29th, the eighteenth day of her illness, I was again called, to find the patient in chill and complaining of intense pain in the left lower lobe. Dyspnœa was extreme and cyanosis marked.

On the morning of the 30th Dr. Greene was again consulted, and consolidation of the left lower lobe was determined. Temperature mounted to 104° F.; pulse, 146; panting. The pulmonary second sound was for the first time very weak, the closure of the valve imperfect, and the patient seemed to be almost *in articulo mortis*. Fortunately the right lower lobe was in its twelfth day of resolution and the apices were in their fourth day, but at the best there must have been but little function. Yet the laboring heart responded grandly to stimulation, and upon November 2d, the third day, the temperature fell to 101° F., with pulse of 107, and respiration of 28, deeper and easier. The fever ran from 100° to 102° F. during the next week, but gradually came to normal, and at the end of the next four weeks the lungs had practically cleared up.

On November 12th signs of inflammation of the right saphenous vein occurred, which condition progressed to a pronounced phlebitis, which kept the patient in bed for six weeks.

Until January 2d I heard nothing further of the case. Then I was called, to find her in a semiconscious condition, with a partial paralysis of the left side. This condition persisted for several hours and passed away, leaving only a slight impairment of sensation, which returned, however, in a short time.

My patient, therefore, suffered from three distinct and successive attacks of lobar pneumonia, involving in turn the right lower lobe, both apices, and the left lower lobe, with an accompanying pleurisy with small effusion on the right side, and had as sequelæ phlebitis and a transitory paralysis, probably due to embolus.

The unusual clinical features make the case one of exceptional interest.

A CASE OF DOUBLE PULMONIC MURMUR, WITH DIASTOLIC THRILL.

BY J. N. HALL, M.D.,

DENVER, COL.,

PROFESSOR OF THEORY AND CLINICAL MEDICINE IN THE UNIVERSITY OF COLORADO.

WELL-MARKED disease of the pulmonary valves in adult life is sufficiently infrequent to make the following case worthy of record:

Mrs. R. M——, twenty-four years of age, with no family history of importance in this connection, presented herself at the medical clinic of the University of Colorado six months ago. She had one healthy child, twelve months of age; no other labors. Although subject to severe attacks of bronchitis for some years, especially in winter, her babyhood and childhood, with the exception of whooping-cough, were apparently free from serious disease. There was no history of rheumatism.

She complained of cough, expectoration, and dyspnœa, and presented high temperature and rapid pulse, with moderate dulness and moist râles in both bases, especially behind. I examined the heart, with negative result. The patient was sent to her home and treated by Miss C. L. Moore, a senior student, she reporting to me upon the progress of the case, which I did not see again. Although the dyspnœa was very marked, recovery ensued after a febrile course of about ten days. The case, although not typical, was regarded as one of pneumonia. Miss Moore examined the entire chest frequently during the illness, without noting anything unusual in the heart's action.

One month ago the patient applied for treatment for

a severe bronchitis, sonorous and sibilant râles being heard through the clothing with the unaided ear by the student detailed to the case. In verifying the student's report, I heard, in addition to the râles mentioned, a very loud and unusual murmur over the heart. The chest having been stripped to complete the examination, the following conditions were noted:

The patient was well developed, of natural color, with the exception of slight anæmia, and presented no œdema, lividity, or clubbing of the fingers. Weight, one hundred and thirty-five pounds. Temperature, normal; pulse, 100; respiration, 34 in a state of rest, but increasing in frequency upon slight exertion. Abundant rough, sonorous, and sibilant râles throughout the chest, without perceptible dulness. Cardiac dulness increased moderately upward and to the right, and nearly to the nipple line to the left. Apex beat just within this line in the fifth space. Valvular sounds of heart normal, excepting over the pulmonic region.

Here there was heard a very loud, whizzing, humming murmur, continuous, but accentuated at the beginning of systole, and changing in timbre at the time of occurrence of the normal second sound, which sound, however, could not be made out over the pulmonic area. The murmur, after the change of timbre noted, continued, louder than before, until the next systole. There was not the perfectly distinct intermission between the two parts of this murmur heard in double murmurs at the aortic and the mitral valves. The systolic portion of this murmur was transmitted much less distinctly, especially downward, over the precordial area, than the diastolic, but was heard with great distinctness between the left scapula and the spinal column, where the diastolic murmur was inaudible. The diastolic portion of the murmur was transmitted most strongly downward, especially toward the apex, but was heard quite distinctly over the entire precordia. Over the second interspace, covering an area of about the size of a silver dollar, was a purring thrill, very distinctly diastolic and occupying the entire diastole.

The bronchitis disappeared after about two weeks, and the patient was exhibited at the meeting of the Denver and Arapahoe Medical Society, March 23, 1897. She was examined by many members of the society, and there was no dissent as to the presence of the signs described, although some discussion occurred as to their interpretation.

My own theory as to the origin of the disease and the interpretation of the signs is as follows, viz.: that she suffered for years previously, possibly from birth, from some defect in the pulmonary valve not giving rise to distinct physical signs. The frequent and severe attacks of bronchitis furnish ground for such a suspicion. The attack of pneumonia, a disease which is prone, as we know, to light up an endocarditis, may well have caused a sudden increase in such a valvular trouble if of endocarditic nature, or may have originated an endocarditis *de novo* upon a congenitally deformed valve. At least, the rapid development of the physical signs since the pneumonia would certainly lead one to connect this disease with the valvular trouble.

The systolic portion of the murmur, rough and transmitted into the back, leads me to infer a narrowing of the pulmonic orifice, while the diastolic portion, with distinct thrill, leaves no room for doubt, I believe, as to the existence of pulmonic insufficiency.

The only case comparable to this one which has come under my observation I saw but once, the woman suffering at the time from an attack of colic. She was thirty years of age, and had experienced, ten years previously, a very severe attack of measles. Three months before she had nearly died from an attack of puerperal fever following an instrumental labor; and she also gave a history of a mild attack of acute rheumatism. So far as the organs within the chest were concerned, she complained only of palpitation and dyspnœa upon exertion.

The area of cardiac dulness was slightly enlarged, and she presented the following murmurs, without thrill, viz.:

(*a*) An apical systolic murmur, transmitted into the axilla, having the usual characteristics of the murmur of mitral regurgitation.

(*b*) A diastolic murmur, heard most distinctly over the aortic area, transmitted toward the lower end of the sternum and slightly to the left, prolonged, and rather rough in character.

(*c*) A diastolic murmur, soft and blowing, most distinct at the second left interspace, of different timbre from the one to the right of the sternum, transmitted directly downward to the fourth rib.

Between the locations of the two last-described murmurs was a space where neither could be heard distinctly. I do not feel, however, in the absence of thrill, in the presence of well-defined aortic regurgitation, and especially in view of the known rarity of the affection, that one could speak positively of pulmonic regurgitation in this case, although I believe it existed. I considered it possibly of septic origin.

In the first case, Dr. Charles Denison suggested the possibility of pressure upon the pulmonary artery by tuberculous deposit in the lung, or by tuberculous glands. In a careful examination since the recovery from the bronchitis, I was unable to find any evidence, rational or physical, of such a condition.

VAGINAL HYSTERO-SALPINGO-OÖPHORECTOMY BY ENUCLEATION, WITH THE INDIVIDUAL LIGATION OF VESSELS ONLY, FOR PUERPERAL METRITIS, INTRAMURAL ABSCESS, ETC.

By J. COFFIN STINSON, M.D.,

THE following case is reported rather fully, as it presented several points of interest:

Mrs. M. L——, aged thirty-three years; three children living; always enjoyed fairly good health; had two miscarriages; from the second she made a slow recovery, being confined to her bed for three months.

The patient was first seen by me March 19, 1897, in consultation with Dr. N. Selling. For six weeks previous to the time Dr. Selling was called to the case, the patient had a persistent flow, due probably to a partly detached placenta. The physician who previously had charge of the case had for some weeks endeavored by rest, vaginal packings, etc., to carry the patient through her period of gestation. When she was first seen by Dr. Selling, her general condition was very poor. She was in a fainting condition bordering on collapse, exceedingly anæmic, and had vomiting, headache, and intense thirst; rhythmical uterine pains were accompanied by alarming gushes of blood. Pulse was 140; temperature, 101° F. (mouth); abdomen tender; fundus at about the height of six months' pregnancy; os dilated, admitting a finger, which detected, after removing a large quantity of clots, a portion of detached placenta above the internal os.

I saw the case with Dr. Selling three hours later, and on account of the urgent condition I delivered that same afternoon as soon as preparations could be made. She was placed in the lithotomy position, the os was manually dilated, the membranes were ruptured, a foot was grasped, the fœtus delivered, and placenta removed. There was a very foul odor from the fœtus, etc.,

during extraction. The uterus was lightly curetted and irrigated with bichloride solution, followed with boiled water. The patient was in such poor condition that no anæsthetic could be administered. She vomited the stimulants given her during the operation. She was given saline and stimulating enemata, and rectal feeding was also resorted to for several days. The uterus was subsequently irrigated twice daily. She was given stimulants, tonics, and later some solid food, as soon as her stomach could retain it. The temperature gradually rose from 101° F. (one-half a degree each day) till it reached 103° F., when the uterus was curetted, irrigated, and carbolic acid applied. The temperature gradually dropped to 101° F., when she had a chill and the temperature rose to 104° F. She now complained of pain and tenderness in the left inguinal region. She was again curetted and irrigated with bichloride and peroxide solutions. The temperature dropped by lysis to 100° F., and in a few days to 98.8° F., where it remained for several days. Pulse varied now from 100 to 105. On the afternoon of April 11th she had a slight chill followed by a rise of temperature to 102° F., and complained of pain on the left side above the pubes. Examination showed thickening and tenderness of the left tube and ovary, also some tenderness on the right side. The temperature ran along between 101° and 102° F. for several days, but on the evening of April 16th it reached 103.2° F. Her general condition was now poor. Thinking that the woman might be saved by radical measures, preparations were made for operation, which I performed the following morning at eight o'clock. The morning temperature was 101° F.; pulse, 110. Chloroform was administered by the drop method. The patient was placed in the lithotomy position, with the pelvis slightly elevated (Edebohls' table). The uterus, tubes, and ovaries were removed per vaginam by enucleation, with the individual ligation of vessels only. The enucleation, which was somewhat difficult on account of the size and friability of the uterus, was facilitated by using "long forceps as temporary hæmostatics, levers, and tractors"—what I call "an addition to the enucleation method." Long forceps were clamped successively on the broad ligaments close to the uterus, while the latter was from time to time separated from the former by blunt dissection aided at times by cuts from the scalpel, keeping very close to the uterus. By making slight traction on the severed portions of the broad ligaments, using the forceps as levers and tractors, the cut edges could be brought well into view so as to inspect the stumps for open mouths of vessels, which were clamped with small forceps and ligated with fine catgut. Then the long clamps were removed, but small forceps were first applied at the upper angles of the pedicles, to control them so that the stumps could be again inspected before the gauze packing was introduced, when the forceps were removed. Under such circumstances the clamps are an addition to the enucleation method, acting temporarily as levers and tractors, and as prophylactics against hemorrhage, while the severed portions of the broad ligaments are inspected and the vessels located and ligated. Three arteries were ligated during the operation. After the removal of the uterus and appendages, a portion of the intestines, which presented evidence of diminishing peritonitis, was freely irrigated with hot saline solution and then dried with sponges. The pelvis, the cut edges of the broad ligaments, and vagina were lightly but systematically packed with wide strips of bichloride gauze (moist). Finally an occlusion pad of the same gauze and a T-binder were applied.

Description of Specimen Removed.—The specimen was about the size of a uterus between the third and fourth months of gestation, showing that it had undergone a considerable degree of involution. The walls were markedly friable, there was an abscess in the left wall near the fundus, the left tube (which was severed during the operation, allowing the escape of pus) contained pus. On pressure pus exuded from the left cornu of the uterus (a tubo-uterine abscess). The left ovary was of the size of a hen's egg, solid, and contained a small abscess on its surface where it had been connected with the tube; the right tube and ovary were injected but not enlarged.

Treatment and After-Treatment.—She was freely stimulated with hypodermics of whiskey and strychnine and subcutaneous injections of hot saline solution. The temperature gradually rose to 103.4° F., and she died eighteen hours after the operation.

Autopsy Ten Hours after Death (by Drs. Selling and Stinson).—The abdomen was opened. The peritoneal cavity contained a couple of drachms of serous fluid. The bladder contained about two ounces of urine. The intestines occupying the lower part of the abdomen showed peritonitis. The gauze in the pelvis was moderately wet and only slightly blood stained. There was no evidence of bleeding.

This is, I believe, the first case wherein vaginal hysterectomy has been performed by enucleation with ligation of vessels only, for puerperal metritis, tubo-uterine abscess, etc. For this reason and because vaginal hysterectomy for puerperal metritis is of sufficiently rare occurrence, I report the case. I am sure that in this case, had the uterus and appendages been removed in the incipiency of the second attack of inflammation, *i.e.*, before the peritoneum was involved, I could have reported a recovery. In operating I avoided serial ligation and the clamp operations. Both of these procedures are open to serious objections, as vital tissues are unnecessarily constricted, with complete interference with drainage from the broad ligaments, which is of great importance in those cases in which the broad ligaments are involved in the inflammation. Hemorrhage from the broad ligaments, etc., can be prevented by simply clamping and tying the individual vessels. By enucleation (with ligation of vessels only), aided when necessary by forceps used temporarily as levers, tractors, and prophylactics, while the vessels are ligated, you do away with mass ligatures, mass clamping, the cautery, sloughing, painful and sloughing stumps, septic discharges, pelvic exudates, wandering and dead ligatures, adhesions, etc.

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Soft Soap is preferable to vaseline for anointing the fingers before making vaginal examination and for lubricating the vaginal speculum. It is prepared by dissolving castile-soap shavings in warm water. If the vessel containing the soft soap be surrounded by hot water for a few minutes before it is used, the contents will be of thin consistence, resembling olive oil. The advantages of using this emollient are that it helps to clean the vaginal mucous membrane and readily washes off when it is desired to medicate.—TALLEY.

LICHEN PLANUS PRESENTING LESIONS WITH A CIRCULAR FORM.

BY J. ABBOTT CANTRELL, M.D.,

PROFESSOR OF DISEASES OF THE SKIN IN THE PHILADELPHIA POLYCLINIC AND COLLEGE FOR GRADUATES IN MEDICINE; DERMATOLOGIST TO THE PHILADELPHIA AND FREDERICK DOUGLASS MEMORIAL HOSPITALS, PHILADELPHIA.

ALTHOUGH in the majority of cases of lichen planus which are encountered during the practice of a physician a characteristic formation is shown, there are nevertheless many which present a configuration diametrically opposite. There are many cases of this cutaneous disease which may assume irregularities of distribution, and, while these arrangements may present in variously aggregated patches, others are observed in which they may resemble the appearances of other dermal affections. As usually seen, these cases present lesions which may be discrete in some instances, while in others two, three, or a much greater number of papules may aggregate themselves into groups, accepting no particular formation, but either being rounded or becoming more irregularly placed. Cases have also been recorded in which these papules have been observed presenting a linear arrangement, either when a few have congregated themselves into such a streak or when an innumerable quantity has stretched this line over a considerable area. At times the figurations have formed into circles, while single lesions have shown a tendency to clearing in the centre.

I present the case in this record because of the peculiar tendency of two patches situated upon the forearm to accept a circular form with a clearance in the centre, thus presenting some of the characteristics of an ordinary tinea circinata; and so much so that, were it not for other lesions in the vicinity, it would have created the necessity of recourse to the microscope for a positive diagnosis.

Harry R——, aged twenty-four years, presented himself for treatment through the kindness of Dr. W. O. Xander, of Philadelphia, on March 28th last. His occupation was that of lead glazier, and he had been a sufferer from the present eruption for three months previous to this visit. His health had always been of the best, and never had there been an eruption of any character other than that from which he was now a sufferer. No similar disease had ever been witnessed in any member of his family, as far as he was able to state. Born in Frederick, Md., he had remained in that vicinity until his fourteenth year, when he moved to Philadelphia and began learning his trade, at which he has always been occupied.

The eruption for which he sought advice was observed on the chest and flexor surface of the right forearm. The lesions upon the chest occupied the greater portion of the region, constituting almost a universal condition, but showing areas of healthy skin at infrequent intervals. The lesions were of the small type, but, as usual in the affection, were closely aggregated, although showing no tendency to coalescence. Upon the flexor surface of the right forearm was found the peculiar condition occasioning this paper, owing to the unusual configuration mentioned in the foregoing remarks. The lesions in this locality were rather larger than those observed upon the chest, although they were still of a small size, being of the diameter of a large pinhead in the majority of instances and in others of the size of a half-pea or half-bean. One group of lesions was observed directly over the flexor surface of the wrist and had a diameter of one-fourth inch, being made up of probably eight lesions, all of which showed the rounded or irregular outline with a tendency to clearance in the centre.

The lesion which showed the greatest similarity to the ordinary tinea circinata was observed about two inches above the wrist on the flexor surface of the forearm, it being composed of twenty or more small papules. They were arranged in a ring or circle having a diameter of one and one-half inches, and upon close examination could be discerned to be closely aggregated but having a depression between each, thus showing their individuality. Within the circle there was no inflammation whatsoever, nor was there any tendency to redness surrounding the collection of lesions. Upon the summit of all of these small papules slight scales could be observed, thus drawing one's mind more closely to the superficial ringworm. This ring was rather a continuation of one lesion after the other, and had, as far as this man's knowledge went, been just the same throughout the existence of the manifestation.

Elsewhere than upon the region mentioned there were a number of discrete lesions, and we saw still other spots where two or three had aggregated themselves together. They all showed the characteristic appearances of the affection under consideration, and the diagnosis was made with little difficulty.

The treatment adopted in this case was large doses of arsenic in the form of arsenious acid, the man being given at first a dosage of one-eighteenth of a grain thrice daily, which afterward was increased to one-fourth of a grain thrice daily. Locally he was ordered the liquor carbonis detergens in one-quarter strength. In about five weeks the affection had entirely disappeared, leaving some slight pigmentations over the site of the former lesions.

The uniqueness of this appearance seemed to me worthy of record, simply because of its resemblance to ringworm, and I have described it with the hope that it will prove of some assistance to those who may read this paper.

315 SOUTH EIGHTEENTH STREET.

A CASE OF STRYCHNINE POISONING.

BY ALFRED S. WADE, M.D.

[illegible]

I WAS recently called to attend a man who had deliberately weighed out and taken one grain of strychnine sulphate. He was forty years of age, powerfully built, and weighed two hundred and twenty-five pounds. He was just recovering from the effects of a spree and took the drug with whiskey. After taking the poison he lay down on the bed in his room, and, not feeling any effects from the experiment, took up a book to read, but, he says, was unable to see the print clearly enough to read. He lay there for nearly an hour, when he was called from downstairs by his sister to supper. On attempting to rise he was at once taken with spasms of the legs, arms, and muscles of the trunk. He called out to his sister to send for a doctor at once, that he had taken strychnine. Having some knowledge of medicine, he had his sister give him a teaspoonful of sulphate of zinc dissolved in water. He swallowed this with much difficulty, as he felt a "tightness" of the muscles of the throat; he followed this by a draught of warm water, which failed to produce emesis. When I arrived, a few minutes later, I found my patient suffering intense agony from frequent spasms of the whole body. His body was bathed in perspiration, his face was swollen, and his eyes were protruding.

I immediately injected one-tenth of a grain of apomorphine hydrochlorate hypodermically and gave him by the mouth one drachm each of chloral hydrate and potassium bromide. In a few minutes he began to vomit freely, but at each attempt at emesis was seized with violent convulsions. After the vomiting ceased

I gave him a second dose of chloral and potassium bromide, one drachm each, which I again repeated in one hour. Gradually the spasms left him, but the slightest noise—the opening of a door, and in one case just speaking to him—brought on the attacks in a minor degree. In three hours from the time of my arrival all spasms had disappeared, with the exception of a twitching of the muscles of the face. His only complaint the next day was a "soreness" of the muscles all over his body.

MECHANICAL RESTRAINT OF MASTURBATION IN A YOUNG GIRL.

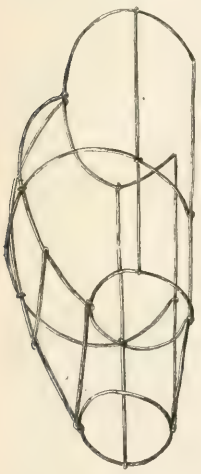
By C. D. W. COLBY, M.D.,

JACKSON, MICH.

A GIRL, aged seven years, slight build, swarthy complexion, black curly hair, light blue eyes, unusually precocious.

She had been taught the habit by vicious children at a "county house," from which she was adopted in the summer of 1895.

I learned from the fostermother that on the advice of physicians she had given her worm remedies, they thinking that, perhaps, the irritation was due to the migration of "pinworms." The parts had been kept thoroughly cleansed; she had been made to sleep in sheepskin pants and jacket made into one garment, with her hands tied to a collar about her neck: her feet were tied to the footboard and by a strap about her waist she was fastened to the headboard, so that she couldn't slide down in bed and use her heels; she had been reasoned with, scolded, and whipped, and in spite of it all she managed to keep up the habit.



On making an examination I found an adherent clitoris, retained smegma, and a redundant prepuce. I broke up the adhesions, cleansed the parts thoroughly, and removed the redundant preputial tissue, thinking this would remove the irritation and stop the habit. She was not made to wear her jacket after the operation (the fosterparents objected to a clitoridectomy), and the first night she tore off the dressings and opened the wound with her fingers, starting up quite a hemorrhage. From that on she was watched till the wound healed and then sent home (fifteen miles) to wait two weeks, while I could devise some scheme to break her of the habit.

The result, which is shown in the sketch appended, is built of No. 8 coppered iron wire, the legs and armpits are protected with sheep's wool, and over the whole thing is fitted a stout canvas jacket. At bedtime the child is slid into the "harness" from the top and the canvas jacket is laced up the back and strapped over the shoulders.

It succeeded in breaking the habit for a year, when she was returned for a new one, having outgrown the old one). She had gained six inches in height and nearly twenty pounds in weight. The habit was resumed as soon as the "harness" was left off at night. I built a new and larger "harness" the first of February and so far it seems to have worked as well as the first.

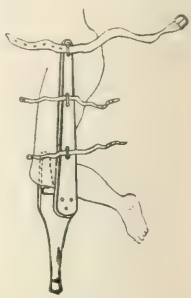
208 SOUTH JACKSON STREET.

A NOTE ON THE USE OF THE PEGLEG AS A PROTECTIVE APPARATUS IN THE TREATMENT OF DISEASE OF THE ANKLE OR TARSUS.[1]

By JOHN C. SCHAPPS, M.D.,

PUEBLO, COL.,

IN examining recently a case of tarsal disease, I was impressed by the patient's ingenuity in securing the protection afforded by a pegleg. The man's name is Michael Sobbi. He was thus able to perform, without injury to his foot, the hard work of a fireman. The apparatus, as shown in the cut, requires no skill in construction or application, and accomplishes efficiently the following purposes: 1. Protection against pressure of weight. 2. Relaxation of calf muscles. Thus the foot can be kept at or nearly at a right angle with the leg without thereby causing interosseous pressure. 3. Diminution of the ill effects of pendency. It permits the application of plaster of Paris or other means of fixation. It renders unnecessary the use of crutches.



The pegleg consists of two slats of wood, attached below to a conical block, upon whose upturned and padded base the patient's weight is received. The block ends in a peg, which should be ferruled. If the patient has to walk upon soft ground, the lower end of the peg should be made broad. The outer strip extends nearly to the crest of the ilium, the inner to a point a few inches above the condyle. The whole may be cut from a single piece of hard wood, from two to two and one-half inches thick. It is secured by straps, as shown.

Kraske's Operation for Carcinoma of the Rectum.—The operation by cutting through the sacrum has not yet obtained that position in the estimation of the profession which its advantages entitle it to possess. The idea of cutting through the sacrum in order to get at the rectum appears to many as such a formidable procedure that they hesitate to recommend it in the early stage of disease when it can be carried out most satisfactorily, and perhaps give it a trial only when the patient himself demands it because his sufferings are becoming more than he can bear. Heidenhain considers that "the only local contraindication to the operation is the extension of the growth to the prostate, bladder, or ureter." There can be no doubt, however, that if the loose connective tissue about the rectum is involved the case is very unfavorable, as it also is if the retroperitoneal glands are affected. Dr. Allison states that "the reported cases of excision of the rectum after Kraske's method for cancer show a mortality of thirty per cent., with a recurrence in forty per cent. of the recoveries. This includes, however, many inoperable cases, as is proved by a mortality of eight per cent. in the hands of some surgeons in properly selected cases." Senn writes that "the surgeon who removes the cancer of the rectum by excision will have a great mortality, while the one who follows the loose connective-tissue spaces, resorts to blunt instruments, and carefully guards against hemorrhage, will show the best results."—*The Lancet*, March 13, 1897.

[1] Read at the annual meeting of the American Orthopædic Association, Washington, D. C., May 6, 1897.

Surgical Suggestions.

Black Eye. — To prevent ecchymosis of the eyelid after injuries, paint the part with the following, avoiding any broken surface:

℞ Mucil. acaciæ ..... ℥ss
Tr. capsici ..... ♏i
Glycerini ..... ad ℥i.
—Da Costa.

Toxin Treatment of Malignant Growths.—In Czerny's clinic (Heidelberg) 27 cases were treated according to the method of Coley. Of these 27 cases 10 were carcinomata, and 17 sarcomata (7 round-cell, 3 spindle-cell, 3 lympho-, 2 angio-, 1 osteo-, and 1 melano-. The following deductions were drawn: 1. In carcinomata the results were completely valueless. 2. In sarcomata, only very exceptional cases showed any result. 3. This questionable advantage was equalized by the dangers of poisoning as well as by the increase of the tumors in other cases.—*XXV. German Surgical Congress.*

The Treatment of Furuncles.—Dr. Louis Dumont (*Annales de Dermatologie et de Syphiligraphie*, tome viii., No. 11, 1896) employs the method of linear scarification used in ulcers and some of the chronic skin diseases, and, according to the author, who has used this method for some years in military service, the results are very satisfactory. The skin over the beginning pustule or boil is first cleaned with a brush and an antiseptic solution (1 to 1,000 bichloride; 1 to 50 carbolic); several parallel incisions are made, a millimetre apart, through the dermis; a similar series is made at right angles to the first; a wet antiseptic dressing is then applied. When this treatment is instituted early in the disease, the pain, redness, and swelling will usually disappear within the first twenty-four hours. The advantages of this procedure are that bleeding is more free, the access of the antiseptic is made more easy, cure is more speedy, and scarring is practically absent.

Urethral Stricture.—1. Strictures of large calibre, that is, of more than fifteen French, situated at or behind the bulbo-membranous urethra, are to be treated by gradual dilatation. 2. Strictures of large calibre, occupying the pendulous urethra, are to be treated by gradual dilatation when very recent or soft, and by internal urethrotomy when of longer standing and distinctly fibrous. 3. Strictures of the meatus and of the neighborhood of the fossa navicularis should be divided upon the floor of the urethra whenever there are real pathological conditions. 4. Strictures of small calibre, less than fifteen French, situated in advance of the bulbo-membranous junction, usually call for internal urethrotomy, preferably with a dilating urethrotome under strictest antiseptic precautions. 5. Strictures of small calibre situated at or deeper than the bulbo-membranous junction should be treated whenever possible by gradual dilatation; in cases of resilient or irritable stricture, which is not dilatable, by external perineal urethrotomy. 6. Impassable stricture of the deep urethra always requires the performance of perineal section.—Dr. Sanders, *New England Medical Gazette.*

Dislocations of the Hip-Joint.—Dr. D. H. Allis (*Dunglison's College and Clinical Record*, March, 1897), in discussing the inward dislocations, summarizes as follows: "The patient lying supine, the surgeon kneels by his side, and if the right femur is dislocated he seizes the ankle with his right hand and places the bent elbow of his left arm beneath the popliteal space: (1) he now turns the bent leg outward by means of the ankle and lifts upward (skyward); (2) then turns the bent leg inward and brings the femur down in extension. Should this method fail, the method by traction should be adopted. The obstacles to reduction are: 1. Lack of skill in the operator or lack of facilities. 2. Obstacles that prevent the head from entering the socket. 3. Obstacles pushed into the socket by the head. 4. The sciatic nerve hooked over the neck of the femur.

Primary or Subjective Causes of Stricture of the Male Urethra.—Dr. Strittmatter (*Dunglison's College and Clinical Record*, March, 1897) felt warranted in offering the following conclusions taken from personal observations: 1. The condition known as urethral spasm, between the bulb and the meatus urinarius, is not due to contraction of the circular muscle fibres, but to either a folding over of the relaxed mucous membrane or the sudden contraction of the cut-off and accelerator urinæ muscle, causing a sudden engorgement of the part subjected to irritation. 2. Post-gonorrhœal stricture is frequently but an augmentation or an infection of a pre-existing condition of stricture. 3. Gonorrhœa, while capable of inducing stricture, very rarely does so without an element of decided traumatism, or without conditions interfering with free urethral drainage. 4. Chronic prostatitis in the aged is always preceded and associated with either an old gonorrhœal urethritis or with conditions interfering with the proper drainage and healthy condition of the urethra. 5. Masturbation, when prolonged, may induce sufficient irritation to inaugurate a stricture, but more frequently the intractable habit is the result rather than the cause of stricture.

Cocaine for Fistula.—The *Medical Bulletin*, November 25, 1896, reported a case of salivary fistula cured by painting with cocaine; the issue of December 2d describes a similar success obtained with it in the case of a fistula of the parotid gland, treated previously with nitrate of silver and chloride of zinc without effect. The solution of cocaine used was five to fifty grams each of water and glycerin. The skin alone was painted twice a week. No result was perceptible at first, but at the end of the second week the improvement was evident and the cure progressed to completion.

Appendicitis.—Dr. J. W. White writes as follows: "Immediate operation is indicated whenever the onset of appendicitis is marked by both suddenness and severity; whenever, during even a mild attack, the symptoms at the end of forty-eight hours are unrelieved or are growing worse; whenever, in cases seen later, a firm, slowly forming, well-defined mass is to be felt in the right iliac fossa; whenever at any time a sudden increase in the acuteness of the pain and a rapid diffusion of tenderness occur; whenever there is good reason to believe the appendix infection to be tuberculous in character; whenever attacks of any type have been numerous, or are increasing in number or gravity, or have unfitted the patient for work or activity, or have caused local symptoms which are permanent or persistent, or have at any time put the patient's life in danger."

Perityphlitis.—Dr. A. Marmaduke Sheild, in the *Clinical Record*, January 20, 1897, writes that that the bacillus coli, associated with other microbes, extensively infects the cellular tissue around the appendix, producing an abscess of varying size filled with peculiarly fœtid pus and gas, which is situated in the right iliac fossa, and usually slowly and painfully works its way toward the skin. It may burst just above Poupart's ligament, or into the intestine, bladder, or rec-

tum, and in females it has been known to point and burst into the vagina. In other cases the abscess, which may be very small in size, transgresses its feeble barriers, and the pus extravasates into the peritoneal cavity. So the affections of the appendix may be divided into two classes—one class in which the part gets thickened and glued down; and a second in which an abscess forms and bursts, or is opened by the surgeon.

The Curette and Morbus Cordis.—Dr. Resnikoff (*Monats. f. Geburtsh. u. Gynäk.*, January, 1897) warns against scraping the endometrium for menorrhagia or metrorrhagia until the patient's heart has been examined. When organic disease of the heart exists, the use of the curette is often followed by an increase instead of a diminution of the hemorrhage.

Carcinoma of the Uterus.—Dr. W. W. Russell concludes a paper upon the "Operative Significance of Metastasis and Post-Operative Recurrences in Carcinoma of the Uterus" with the following propositions: 1. Cancers of the vaginal portion of the cervix tend to advance out on to the vaginal walls, either superficially or beneath the mucous membrane, and if the case is suitable for operative treatment a wide removal of the vagina is indicated. 2. These growths are usually epitheliomata and have little tendency to metastasis. If the local extirpation is complete the prognosis is good. 3. Growths of the cervix are usually adeno-carcinomata, and from their situation are to be considered the most malignant of uterine cancers. The parametrium and bladder are the critical points, and the former should always be removed as completely as possible. 4. Adeno-carcinomata of the body are the most accessible to operative procedure and give the most favorable prognosis.

Society Reports.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, May 17, 1897.

JOSEPH E. JANVRIN, M.D., PRESIDENT, IN THE CHAIR.

The Treatment of Pertussis.—DR. LOUIS FISCHER read the first paper. We must individualize, not generalize the treatment. Each case must be studied separately, somewhat as follows: How many paroxysms had the patient had in an hour or a day? Had he vomited, and how often? Of what did the vomit consist? Were the paroxysms most violent at night or during the day? Had there been any hemorrhages? The temperature? How much food was retained and digested as shown by the fæces? Was the child emaciating or increasing in weight? What was the condition of the heart? What complications existed? In the first or catarrhal stage, expectorants and general hygienic rules, plus concentrated nutrition, cod-liver oil, malt extract, and other restoratives, would relieve and aid in recovery. But if cough persisted, or if we were called in the second or convulsive stage, we must resort to heroic measures. The following headings appeared under treatment: (1) Isolation, (2) clothing, (3) fresh air, (4) the room, (5) medicinal treatment. Isolation was necessary to prevent spreading of the disease. The clothing should be warm, and flannel underwear should be worn both winter and summer. It was Dr. Fischer's belief that more children were lost by injudicious exposure and careless dress than by any other means, for usually those found in a hopeless condition were suffering less from whooping-cough than from some complication or sequel. Fresh air was one of the most valuable means of relieving and modifying the cough. To keep the window open was the cheapest and handiest way to secure oxygen and ozone. If the child's condition permitted, it should be in a park all day. The temperature of the room should be kept at from 68° to 72° F. Sweeping the floor or in other ways raising dust must be prohibited. Let the floor be washed instead of swept. Tobacco smoke, cooking of onions, etc., must be prohibited. Handkerchiefs should be placed in an antiseptic as soon as soiled. Expectoration should be into a cuspidor containing one-per-cent. carbolic solution. In medicinal treatment almost every drug in the pharmacopœia had been mentioned. The tendency in all instances was toward antizymotic agents, local antisepsis, and anodynes. Inhalations of steam, or steam impregnated with carbolic, thymol, or eucalyptol, was recommended by some. The author had tried hot poultices, ice bags, and ice cream, but without benefit. In the MEDICAL RECORD, September 6, 1890, would be found an elaborate paper by him on the treatment of pertussis with bromoform, based on fifty-one cases. Since then he had used it with many successes, and also with poor results in some instances. A pure preparation must be used, given not in solution, but only in drop doses from a spoon. It was very volatile, and should be kept in a well-stoppered bottle, protected from the light. The dose for children was from three to eight drops, three times a day, according to the age. He had one case of poisoning to report from taking too much by mistake, but the child recovered. Chloroform or ether was called for only in urgent cases to relieve the violence of the paroxysm when there was hemorrhage or to prevent rectal prolapse. Belladonna had been an utter failure in his hands. The same was true of atropine. He had discarded antipyrin, and the coal-tar series in general was contraindicated on account of the heart. He had tried morphine and opium with trepidation. Steam inhalations impregnated with ichthyol, a teaspoonful to two ounces of water, had given him good results in children who could inhale properly. This was also true of one-per-cent. formalin inhalations or impregnating the air of the room with it. Menthol seemed best for controlling vomiting, about one grain three times a day. Bichloride of mercury, one-one-hundredth grain, combined with five drops of ichthyol, three times a day, had given good results in some cases in which bromoform had failed. Vaccination with cow lymph seemed to have been of benefit, but only in children not previously vaccinated. Bromides and chloral relieved cough only for the time being. Antistreptococcus serum was injected in one case, without apparent benefit. In some cases of irritable pharynx, rectal feeding was indicated.

DR. S. HENRY DESSAU opened the discussion. He fully agreed with the author that fresh air was one of the most necessary things in the management of pertussis. The sleeping-apartments should be well ventilated in winter as well as in summer. Fresh air and the ozone which it contained was the best antiseptic. He was in the habit of directing the nurse to take the patient to the gasworks of the city, and sit an hour in the room when they opened the purification boxes. The asphalt works could be visited for the same purpose. He also resorted to sulphur fumigation of the rooms, followed by thorough ventilation of them, after which the child was returned. The renewed air was supposed to be then quite pure and germ free. Many mothers had the notion that whooping-cough did not amount to much, yet it was not long ago when it ranked third as the cause of death, directly or indirectly. In looking for some rational treatment, one could not but consider the cause of the disease as some germ, known

or unknown. Therefore benefit should come from remedies having both an antiseptic and a sedative effect, such as antipyrin and phenacetin. He disagreed with the author in his comments upon the coal-tar series, for he had limited himself almost entirely to their use in whooping-cough for some seven years. We ought not to give disagreeable mixtures to children, and for this reason he had discontinued bromoform. Patients for whom it was prescribed at the dispensary were not brought back. For the same reason he had given up bromide and chloral. Enlargement of the bronchial glands at the root of the lung was frequent, especially in children with a phthisical tendency, and when this came on there were likely to be paroxysms of coughing which led mothers to say that there was recurrence of the whooping-cough. In these cases he had found nothing to act as well as iodide of potassium. In patients with chronic intestinal indigestion, alum was useful.

Dr. Quinlan said a child had recently been brought to his clinic with the statement that it had had whooping-cough, that during a paroxysm epistaxis had come on. Its nose was plugged with cotton containing alum, etc. On examination he found the tonsils much enlarged, and on excising them the epistaxis and whooping-cough ceased.

Dr. Fischer thought the benefit from a visit to the gashouse was probably due to the outing. The case related by Dr. Quinlan was one of pseudo-pertussis. Pure bromoform was not disagreeable. It was important to keep up the nutrition of patients with whooping-cough.

Atrophic Rhinitis.—Dr. H. Beaman Douglass read this paper. Atrophic rhinitis presented a loathsome picture, and there was no easy escape from that loathsomeness when once it became established. The scabbing, the horrible stink, the hawking, the difficulty of breathing, the repulsiveness to friends, often made a recluse of the patient, perhaps caused melancholia and suicide. The remedies which had been suggested for its relief included nearly all new and old agents, and pointed to the rebelliousness of the disease if not to ignorance of its etiology. Regarding the latter, search had been made of recent years for some special germ as the cause, possibly with success. The author said that vitiated air, close rooms, dry heat, and crowding undoubtedly contributed to its development. Debility, especially inherited weakness, favored it. It was often seen in persons with abnormally flat, wide nose, and at the dispensary they not infrequently made a diagnosis of atrophic rhinitis at sight when a person with a nose of that form entered the room. In only a few cases was atrophic rhinitis found in an àquiline nose with small nares, and then as a result of degeneracy or anæmia. More frequently complete obstruction would cause atrophic rhinitis of the opposite side. The free side tried to do double work, succeeded for a time, but finally gave up the struggle, and the structures became atrophic. Destructive operative work had in many cases been the cause of atrophic rhinitis. This included work with the cautery and caustics. It had been by this expensive lesson that rhinologists had learned the exceeding importance of sparing gland and vascular tissue. Among the symptoms were headache, both frontal and occipital; cough, nosebleed, dead feeling along the nose, hot and dry feeling, tenderness on touch along hard and soft palates, persistent feeling of nasal obstruction, fœtid odor, scabbing, with feeling of necessity to free the nose. The most frequent place for scabs was about the pharyngeal opening of the Eustachian tubes. Unless it were remembered that all parts of the lining membrane of the nose might be affected, the treatment was likely to be unsuccessful. The treatment related to alleviation of the symptoms, cleanliness, antisepsis, and to the cure of the disease. For practical purposes this division was made: 1, Treatment of early cases; 2, treatment of unilateral cases; 3, treatment of ulcerative cases; 4, treatment of obstruction in superior or middle meatus; 5, treatment of the general condition. Complete removal of the scabs was necessary. The physician should see the patient every other day or every day. When the patient was told to use the douche in the interim, he must be cautioned not to overdouche. The doctor could remove the scabs with a probe wrapped with cotton, wet with some fluid. An antiseptic and deodorizing solution must be used twice a day, to be followed by a medicament if the doctor so directed. Dr. Douglass had douched with light antiseptic, 1 to 100,000 bichloride, and 1 to 10,000 zinc. The electric cautery might be necessary to induce healing of ulcerated surface. Any obstruction must be removed. The general condition required treatment, including exercise in the open air. As to climate, a dry air was best; temperature made less difference. Finally, he knew no specific. Faithful carrying out of treatment must be insisted upon. The earlier it was begun, the better for the patient and the more satisfactory to the physician.

Dr. F. J. Quinlan opened the discussion. In the course of his remarks he said atrophic rhinitis was the terminal stage of fœtid rhinitis or ozæna. The pharynx and larynx participated in the process. As the author had said, the mutilation of soft parts in treatment must be avoided as far as possible in the earlier stage. A fact not mentioned in the paper was that young women, at least according to Dr. Quinlan's experience, were oftenest affected. The odor seemed more marked during menstruation. One author had likened the condition to that of fœtid odor from the axilla, or decomposing smegma. Deafness was a symptom not mentioned in the paper. There was contraction of tissue at the entrance to the Eustachian tubes, perhaps extension of disease to the middle ear. There was a marked kinship between these cases and disease of the accessory cavities of the nose. He thought the nasal douche, as well as acids and caustics, had been a cause in many cases.

Dr. W. F. Chappel remarked that the speakers had confined their remarks chiefly to one form of atrophic rhinitis. In his opinion there were four or five forms, some of them not so serious. There was the rheumatic and gouty form, in which local treatment was not so important, and relief followed remedies directed against the gout or rheumatism. Another form accompanied anæmia, and treatment of this relieved the anæmic, drawn, dry state of the nasal mucous membrane. Then there was traumatic atrophic rhinitis, seen in stonecutters, millers, and persons working in overheated air. A fourth form was that which had been referred to chiefly to-night. In this form he thought more emphasis should be put upon the constitutional influence and the necessity for constitutional treatment against the scrofulous state, etc. He thought ozæna was nearly always of specific origin. It might be a hereditary-syphilis manifestation. Dr. Douglass, he said, had not expressed much faith in oily preparations, but the speaker thought they were of value, after removing scabs, in preventing their reformation. In ordinary atrophic rhinitis he had found nothing equal to iodine. Plenty of cod-liver oil and outdoor exercise should be given.

Dr. T. J. Harris said he would confine his remarks to atrophic fetid rhinitis. According to the common definition, there were three characteristic symptoms which were constant, namely, atrophy of the mucous membrane, discharge, odor. The speaker thought only one of these was constant, namely, discharge. There might be atrophy here, hypertrophy there, and odor might be entirely absent, but discharge

which constantly recurred was never missing. Lowenberg claimed about two years ago to have found the bacillus, but was unable to get a culture which would produce the disease. Later it it had been claimed that the true bacillus resembled the pneumococcus of Fraenkel but with differences, and it had been asserted that ozæna could be produced by introduction into the human nose. Other observers in Italy and France had found the same bacillus. The other theory was the old one of Michel that ozæna always came from a purulent condition of the frontal sinus. Later Grünwald had modified this by saying that there was always a purulent condition of one or other of the accessory sinuses, and, bearing this fact in mind, he claimed to cure his cases. Dr. Harris thought researches into the etiology should be continued, but we ought not to disregard the factor of disease in the accessory sinuses.

Dr. Concanon had treated fourteen cases, in every one of which there was a purulent condition of the ethmoid cells. Five had been cured. Treatment included washing out the ethmoid cells, and use of iodoform-gauze pack, saturated with ichthyol, in the upper part, leaving room below for breathing.

Locomotor Ataxia (?) and Hodgkin's Disease. Dr. Abrams presented a man, thirty-five years old, single; history negative until two years ago symptoms of locomotor ataxia began to manifest themselves, consisting in shooting pains in the lower extremities, absent patellar reflexes, slight swaying with eyes closed and feet together. About a year ago he noticed a mass on the back of the head and neck, and to-day swelling of the glands constituted tumors in the neck beneath the jaw, in the back of the neck; the glands in the axilla were enlarged; the mammæ were also enlarged. It was clear that the man had Hodgkin's disease; had he also tabes dorsalis? A friend had suggested alcoholic neuritis, but the patient drank only occasionally. The interest in the case was the combination of the two diseases.

Amendment of Bylaws.—The following amendment to article v., section 7, of the bylaws was adopted: "Whenever an investigation of charges against a member is undertaken by the executive committee, in regular order, it shall be within its power to cite before it as many of the members concerned as the committee may consider necessary for an equitable adjustment of the matter. Should any member so summoned fail to comply, without valid excuse, he shall be judged in contempt, and it will be the duty of the executive committee to recommend his censure or expulsion from the association."

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, May 24, 1897.

L. C. Gray, M.D., President, in the Chair.

Resection of Pylorus for Cancer.—Dr. Carl Beck presented a man whose pylorus he had resected for cancer. The points made were: Early diagnosis and early operation gave promise of cure; formalin catgut was used, one row of suture, which contributed to the good result, for the patient was able to be up by the ninth day and to be presented on the twelfth day after the operation.

Report of Committee on Legislation.—Dr. Frank Van Fleet read the report of the committee. The committee had been appointed to act with that of the State Medical Society to oppose undesirable bills affecting the medical profession brought before the legislature, and to advocate others. It had very properly and successfully opposed the opticians' bill, which had again been brought before the legislature at its recent session. It had sought to have the charter of the Pedic Society repealed, but had not been disappointed in failure. The amended bill affecting dispensaries had passed the legislature. The committee had started out to do a certain work, and this it had accomplished. On motion of Dr. Van Fleet the members of the legislature who had acted with the committee received a vote of thanks.

Report of the Committee on the Abuse of Medical Charity.—Dr. J. H. Burtenshaw, chairman of the committee, read the report. The first step taken was to ascertain the sentiment of the governing boards of the different dispensaries, and to communicate with the Charity Organization Society with the object of ascertaining what system could be instituted for the investigation of the worthiness of applicants for free medical treatment. A circular was sent to the officials of the ninety-five dispensaries in the city, with three interrogatories, briefly as follows: 1. Did the governing board of the dispensary approve of the movement to abolish or regulate the abuse of medical charity? 2. Would the governing board co-operate with the County Medical Society in this matter? 3. Would it post a placard in a conspicuous place in the dispensary, stating that the ability of applicants for free medical treatment to pay would be investigated? Replies were received from seventy-six. Of the other nineteen, five were homœopathic, two were under the supervision of the department of charities, most or all of the others had a local or limited patronage. The replies were favorable or conditional, with the exception of that from St. Mary's Free Hospital for Children, which treated over seven thousand yearly, and the New York Hospital dispensary, which treated over nine thousand yearly. The committee co-operated with one from the New York County Medical Association and one or more others, and had aided in having the amended Sullivan bill passed in the legislature for the control of charity abuse. The profession throughout the State seemed to be practically unanimous in favor of that bill. The committee had every reason to suppose that the bill would receive the signature of the governor, and had been greatly disappointed that he had not yet signed it, as the thirtieth day since the adjournment of the legislature would expire at midnight. The committee and the entire medical profession fully recognized the fact that there was no charity more beneficent than free medical attendance on the poor, but it had been conclusively demonstrated that the abuse of this had attained such great proportions as to make it imperative to adopt measures to check it at once.

It was moved to accept the report.

The Sullivan Bill too Effective?—Dr. D. B. St. John Roosa said he supposed he was not in accord with the majority of the society, but he thought he would be if they would be kind enough to hear him. He thought the question of the abuse of medical charity had been much exaggerated. He was connected with two large institutions, both of which he had helped to found, and he wished to state that, whatever the medical press might say to the contrary, they were not working primarily for the glorification of the doctors connected with them, but for the benefit of the sick poor. Secondarily they hoped to achieve for themselves an honorable reputation. If there was any treason in that, then they were guilty of it. They took the greatest pains to exclude those unworthy of charity. He thought it would be found that the reason why the governor had not signed the present bill was not that he had not had time to consider it, but that he had considered it. The fatal error in the original bill was that it undertook to give the control of chartered institutions into the hands of a self-constituted society, which had not been born long enough for most members

to know anything about it. The amended bill gave the State board of charities power to annul charters, and to this he was opposed. That power should lie elsewhere when it was proven that the provisions of a charter had been violated.

A point of order having been raised, THE PRESIDENT ruled that Dr. Roosa was not in order, but said he would entertain a motion which would allow the discussion to continue.

The motion to accept the report was carried.

DR. STURGIS then moved to continue the committee, and accepted an amendment by Dr. Grandin to allow $200 to pay for past expenses of the committee. The work of the committee had been great, much greater than would appear from so brief a report.

DR. EGBERT H. GRANDIN spoke for the adoption of the resolution. It was seldom that the society had opportunity to hear so valuable a report as this one on an evil which threatened the medical profession of the city. He was not connected with any institution, and could speak from a somewhat different standpoint from the gentleman who had upheld two institutions with which he was connected, but which nevertheless had helped defraud the medical profession. He was being brought in daily contact with the general practitioners of the city, who told him of their patients who were able to pay an adequate fee going to hospitals and dispensaries where they paid nothing, unless it was ten cents for a prescription or "a dollar a month." He contended that it was just as unethical for a hospital or dispensary to rob him of a patient who was able to pay him a fee, as it was for his next-door neighbor to do so. If there was a body of men in this city who should take hold of this question it was the County Society. We had been speaking and writing editorials on the subject for years; boards of managers had been shown that the charity which they were carrying out was not of the kind the good book spoke of. At last an appeal had been made to the legislature and a bill had been passed, but as it promised something effectual the rich managers of hospitals and dispensaries had killed it. But a drop of water would in the end wear out a stone, and perhaps some day there would be a governor in Albany who would recognize the voice of the medical society of this county. Within a brief period three of his patients, able to pay him a fee, had been taken from him by institutions which charged $15 a week board. Hereafter let the members keep track of all such cases, and let the axe be laid at the root of the evil. The doctors connected with such institutions would learn that it did concern them; that they also must investigate cases coming for free treatment, whatever the managers might do.

DR. F. R. STURGIS said members had been told tonight that there had been a great deal of unnecessary talk with regard to the abuse of medical charity. Pick up the reports of any of the dispensaries and charity institutions in this city, and one could not but be convinced that in each of them abuse of medical charity was practised to an enormous extent. Dr. Sturgis thought the most effectual method of entering complaint under existing conditions was not that suggested by Dr. Grandin, but that each known case of abuse of medical charity should be reported to the State board of medical charities, and that when one knew of a new institution about to be founded he should present facts to that board showing there was no necessity for it.

After several other members had spoken, the president called upon DR. JANVRIN, president of the County Medical Association, and DR. HADDEN, who had just returned from Albany, where they had visited the governor, urging him to sign the Sullivan bill relating to the regulation of dispensaries. They had had an audience of only about ten minutes, but were able in this short time to present their points briefly. They pointed out that at present there was no way of regulating the dispensary abuse; that physicians had no control in the matter; that every dispensary in New York was a law unto itself. More, the different dispensaries would not co-operate with one another in trying to rectify abuses. The whole medical profession felt the injustice of the present want of system, and was practically unanimous in supporting the bill awaiting the governor's signature. It was anxious to leave to the State board of charities the arbitration of the whole matter. If any dispensaries were opposed to this method, it was known that they did not wish the abuses rectified. The State board of charities at present had simply general supervision, but it had no power to regulate the abuses. The governor did not give them any assurance of signing the bill, but expressed the wish that he had heard from them sooner. What that meant, Dr. Hadden remarked, he did not know.

A member asked if it was known who had opposed the signing of the bill, and Dr. Hadden said it was rumored that two men whom he named had done so, one of them a doctor.

Dr. Sturgis' motion was adopted, with few voices in opposition.

Blood in the Urine: How to Verify its Presence and Determine its Source, together with Some General Considerations as to its Causes.—DR. WILLIAM K. OTIS read a paper with this title. The question of blood in the urine interested both specialist and general practitioner. It interested the general practitioner because the patient, greatly alarmed, always came to him first. The presence of blood in the urine might be due to a condition or a lesion of comparative insignificance, or it might indicate one which must inevitably prove fatal.

When the urine contained blood its color first attracted attention. The amount of blood varied from a quantity only sufficient to cause slight smokiness to that which caused a cherry-red appearance. One part of blood in fifteen thousand of urine was enough to cause smokiness, one in five hundred to cause a bright red. The color was due to hæmoglobin, and when this became changed the color might become dark brown. It was a mistake, however, to suppose that when the color of the urine was dark brown the source of the hemorrhage was necessarily in the kidney, not below that point. The use of certain drugs and the presence of bile pigments might impart a color closely resembling hæmaturia. The chemical tests by which to distinguish between this and blood, when microscopical examination was not sufficient, as it usually was, were given. The presence of blood in the urine could also be determined by the spectroscope.

The next question was to determine in what part of the urinary tract the blood originated: Was it from the anterior urethra in front of the compressor urethræ; was it between the latter point and the bladder; was it in the bladder; was it in the ureter or kidney? If anterior to the compressor urethræ, the blood would exude from the meatus, or could be stripped out. The urine first passed alone contained blood. The urethroscope could also be used. If the hemorrhage was from the posterior urethra the blood would not exude from the meatus, but would back into the bladder if of sufficient quantity. If the hemorrhage was small the blood would appear only with the beginning or at the end of micturition, the rest of the urine being clear; or the urine at both beginning and end of micturition might be tainted, the intermediate portion being free. At times a clot might escape. When the hemorrhage was from the bladder the entire urine was mixed with the blood. Microscopic examination might show evidence of a new growth in the bladder. Let the examiner wash out the bladder with solution of borax until the water came away clear, then throw in two

or three ounces, wait a few minutes, and withdraw it; if it contained blood it was probable the hemorrhage was vesical. A further test was the fact that the bladder lining membrane absorbed very slowly except when through disease some portion of it was deprived of its protective epithelium. Let the examiner, having cleansed the bladder, throw in a small amount of iodide of potassium in solution, ten or fifteen grains, wait fifteen minutes, collect the saliva, and test it for iodine by the starch method. If the saliva contained iodine that fact would point conclusively to some lesion of the bladder—assuming that the patient had not been taking iodine internally. He had got this idea from Dr. McBride, but on visiting Germany found it in use there. In case of a new growth in the bladder it could sometimes be felt by rectal examination. The value of an examination by the electrocystoscope could hardly be overestimated. It often revealed the nature of the lesion as well as its seat. In locating hemorrhage in the kidney or ureter, the history was usually of value, for the presence of stone or passage of gravel was apt to give a history of pain. Occasionally, however, hemorrhage from above the bladder came on without the slightest warning. The amount of blood passed varied greatly. Intermittency might be caused by blood clot obstructing the ureter. Dr. Alexander had presented a clot which had been passed, and which was a complete cast of the pelvis of the kidney. The pain might be positive, or only an uneasy feeling. Pain over the region of the kidney might be elicited with the finger when it could not with the whole hand. If the bladder seemed to be the source of hemorrhage which, however, could not be definitely located, suprapubic exploratory incision was justifiable.

Dr. L. Bolton Bangs opened the discussion. There was little to add except by way of confirmation. It had been well stated that the presence of blood in the urine was only a symptom. The important thing was its cause and where situated. The color of the urine was no indication of its source. He had seen urine of bright red color when the source of the hemorrhage was the kidney, not the bladder. The cystoscope might fail to reveal the lesion when this was in the bladder because of discoloration of the injected fluid by active hemorrhage, but this fact itself pointed to the bladder as the source of the hemorrhage in opposition to the kidney. The iodide-of-potassium test had failed several times in his hands when the lesion was in the bladder. He had had a case of profuse hemorrhage whose source was doubtful; he made an exploratory suprapubic cystotomy; the cause was found to be tuberculosis, and the hemorrhage ceased, but recurred when the drainage opening closed. Hygienic measures were employed, and there had been no hemorrhage in two years.

Dr. F. R. Sturgis had found the determination of the source of the hemorrhage in the bladder with the cystoscope difficult even after irrigation when the hemorrhage was considerable. The iodine test had not been of much value in his cases. The author, he said, had limited his paper almost exclusively to hemorrhage in surgical cases. But there were many other causes of hæmaturia, among them certain drugs, supplementary hæmaturia in menstruation, in bleeding hemorrhoids; hæmaturia caused by mental emotions, by parasites, especially in hot countries; by transfusion of blood, in the case of animals, etc.

Dr. Samuel Alexander thought the best test as to the presence of blood was microscopic examination. The other tests, although useful, were rather a refinement. He had found that a good test of whether the bleeding was due to calculus was to have the patient ride on a Fifth Avenue stage and immediately afterward examine the urine for blood. He regarded the Fifth Avenue stage as a part of his clinical armamentarium! As a rule the shape and size and solidity of the clot gave little information, but in his case alluded to in the paper the clot was a distinct fibrinous mould of the pelvis of the kidney and its calyces. Subsequently a renal calculus was removed by operation.

Therapeutic Hints.

Tic Douloureux. — Ewart (*British Medical Journal*) states that in the etiology of this disease the importance of gout in the larvate forms is often overlooked. It may be recognized by the following indications: 1. It occurs often in the healthy with ruddy complexion, which is common in sthenic gout. 2. Presence of Heberden's nodules, or of tophi in the ears. 3. History of gravel or stone. 4. Nervous, gastric, intestinal, and hepatic disturbances of long duration. 5. Strength of pulse and endurance of patient after prolonged pain and insomnia. 6. Adverse influence of alcohol and certain diet. 7. Presence of uric acid in the urine. The nature of the etiological action of gout is not explained, though it is thought to act by producing an irritability of the nervous system. His treatment consists of sedative, restorative, alterative, and tonic measures. As sedatives he recommends morphine and choral; as restorative agents, rest and a non-nitrogenous diet; as alteratives, salts of iodine, mercury, guaiacum, and for tonics the vegetable tonics, massage, and salt baths. The results which he obtained by mercury and the salts of iodine in cases which were not specific are most satisfactory. He gives the histories of several patients about to submit to an operation, who recovered under this line of treatment.

The Treatment of Graves' Disease.—Dr. Hector Mackenzie (*American Journal of the Medical Sciences*, February, 1897) speaks as follows in regard to the treatment of Graves' disease by means of thymus gland: "I am of opinion that the dose, to be of any use, should be at least one or two drachms a day, of the fresh gland or its equivalent in the form of extract or powder. The conclusion at which I have arrived is that the thymus gland possesses no specific action in Graves' disease. I have found it in most cases to have no effect either on the heart, on the goitre, or on the exophthalmos. At the same time it appears to be a remedy of some value, improving the general condition, and, in this way, may assist toward the recovery of the patient. I should, at present, place it in the same class of remedies as cod-liver oil."

The Treatment of Chronic Bronchitis.—Dr. Arthur Davies recently read a paper on this subject before the Hunterian Society. He alluded to the many drugs which had been employed in the treatment of this disease, but he now emphasized the value of the spray method. This was carried out by frequent administrations of ipecacuanha wine three or four times a day. At each sitting one-half or one drachm of the drug was used, but the patients were directed not to swallow the wine. Cases were cited which showed relief from difficulty of breathing and lessening of the expectoration. The disadvantages of the inhalations were that sometimes vomiting followed, and if the drug were used pure spasmodic dyspnœa would sometimes come on, and it was not suited for cases of asthma. Dr. Davies had tried a spray of potassium iodide with encouraging results. The class of cases suitable for treatment with the ipecacuanha spray was early cases with much dyspnœa and tenacious sputa. He had also had much help from the administration of trinitrin, the dyspnœa especially being relieved. When the

dyspnœa was moderate, tar in various forms was found useful. Terebene also fell in the same category. When fœtid bronchitis and bronchiectasis were present, inhalations of creosote have been found efficacious.

For Greenish Dejections.—

℞ Sodii bromid. 4
Syr. rhei aromat.,
Tinct. opii camph. ..... āā ʒ
Aquæ anisi. ..... ad ℥ij
M. S. One tablespoonful every two to four hours.

℞ Lactic acid. 2
Simple syrup 98
Lemon juice ..... q.s.
M. S. One teaspoonful every three hours.

—Hatfield, "*Diseases of Children.*"

Whooping-Cough.—Since Michael suggested nasal insufflations of antiseptic powders, Moizard has also employed them with great benefit. He recommends:

℞ Benzoin (pulv.) 10
Salicylate of bismuth 10
Quinine (sulphate) 2

The insufflations are made five times a day. In a week or less the accesses of coughing are reduced in number and intensity, and the cure is rapid.—*Journ. de Méd. et de Chir. Prat.*

Trismus Neonatorum.—

℞ Ext. gelsemii ..... ♏ viij.–xvi.
Syr. simplicis ..... ʒ i.
Aq. ..... q.s. ad ʒ iv.
M. S. Half-teaspoonful every two to four hours.

—Bartholow.

℞ Tinct. opii ..... gtt. v.
Tinct. asafœtidæ ..... ʒ iss.
Syr. simp. ..... ʒ v.
Aq ..... ad ʒ xv.
M. S. Half-teaspoonful every hour.

—Eberle.

Purulent Conjunctivitis in Infants.—

℞ Hydrastinæ sulph.,
Acid. boric.,
Sodii biborat. ..... āā gr. v.
Tinct. opii deod. ..... ʒ ss.
Aquæ dest. ..... ʒ i.
Mix and filter.

Several bad cases were all cured within two weeks. It should be injected under the lids every hour, and the eyes still more often cleansed with tepid water, and vaseline applied to the edges of the lids every night.—Scott, *Am. Jour. Oph.*

Chapped Hands and Face or Fissured Nipple.—

℞ Tinct. benzoin comp. ..... ♏ x.
Alcohol ..... ʒ ij.
Aquæ rosæ. ..... ʒ ss.
Glycerin. ..... ʒ i.
M. S. Apply to chapped surfaces at night, after washing with soap and water and carefully drying.

—*The Practitioner.*

Mumps.—

℞ Ichthyol,
Plumbi iodidi. ..... āā gr. xv.
Ammon. chl. ..... gr. xxx
Adipis ..... ʒ i.
M. S. To be applied to the swollen parts three times daily. Sometimes vaseline may be used in place of lard and belladonna may be added with advantage.

—Trancmet.

Nervine Tonic.—

℞ Asafœtidæ ..... ʒ i.
Acidi arseniosi ..... gr. ss.
Strychninæ sulph ..... gr. ss.
Ext. sumbul ..... ℈ iss.
Ferri subcarb. ..... ℈ ij.
Quininæ valerian ..... ℈ i
M. Make capsules No. 24. S. One capsule after each meal.

—Brown, *Va. Med. Semi-Monthly.*

Correspondence.

OUR LONDON LETTER.

[From our Special Correspondent.]

SIR R. QUAIN ON THE FIRST SOUND OF THE HEART—PROFESSOR FRASER ON SERPENT POISON, A FURTHER COMMUNICATION—ROYAL COLLEGE OF SURGEONS—NURSING-HOMES—HOSPITAL SUNDAY FUND.

[illegible], July 31, 1897.

The mechanism by which the first sound of the heart is produced is again under discussion. Sir Richard Quain, notwithstanding recent illness and his advanced age, has submitted a paper to the Royal Society on this subject. He attributes the sound to the impact of the blood driven forcibly against the column of the same fluid in the vessels (supported by the valves), which is in a condition of momentary repose. You may be inclined to say you have heard this view before, and certainly it closely resembles if it is not precisely the same as that advocated by the late Dr. Arthur Leared in his thesis, "On the Sounds Caused by the Circulation of the Blood," published in 1861. Dr. Leared even went further, and held a similar view of the production of murmurs. If the stream meets with sufficient resistance in the blood pressure in the aorta and pulmonary artery, what about the valves and ventricular walls? Surely they also offer resistance, and some would say more resistance than the column in the vessels. Be that as it may, the cause of the first sound has always been in dispute, and the venerable baronet, who has always made the heart a special study, may be congratulated on his attempt to settle a knotty question.

Professor Fraser has communicated to the Royal Society of Edinburgh further experiments with serpent poison. He has found that the bile of all animals is antivenomous, but that of venomous serpents is most potent, *e.g.*, ox bile is only about one-seventieth as potent as the bile of the most venomous serpents. Serpents' venom does not seem to be destroyed in the stomach, and yet it fails to poison; so it is also clear that it is not absorbed from the stomach. It is then probable, from Professor Fraser's experiments, that the venom is destroyed by the bile, and we may conjecture that one of the uses of this secretion is to render such organic poisons inert. The antivenomous property of bile does not seem to be soluble in alcohol, but Dr. Fraser has separated a watery extract which displays considerable potency, and thinks that from bile an antidote for snake poison may be produced equal to the most powerful antivenin or antivenomous serum that has yet been obtained from the blood of immunized animals. As bile may perhaps be equally destructive to other toxic agents, it would seem that our views of the functions of the bile should be enlarged and that we may be prepared to learn that it constitutes a most valuable barrier against various toxins formed in the body or entering from without.

Sir William MacCormack has been re-elected to the presidency of the College of Surgeons. The council of the college has followed the example of the Physicians' College in the matter of the medical-aid associations.

The *Morning Post* has admitted a number of correspondents' complaints about the management of nurses' homes. One further charges doctors' secretaries with frauds which if perpetrated would speedily bring them within the clutches of the law. It is rather hard to publish such anonymous charges, without a tittle of evidence, against a whole class of men—charges, too, on the face of them most improbable.

The Hospital Sunday fund still lags behind, and no wonder, for the distribution committee still indorses the clique which is endeavoring to destroy the smaller and special hospitals, though they have given up their separate collectings toward the fund.

Dr. W. H. Robertson, F.R.C.P., of Buxton, died on the 15th inst., aged eighty-six. He had been a prominent figure for more than half a century in Buxton; in fact, he settled there in May, 1836, after he had practised for about five years in Chesterfield. He became physician to the hospital and took a leading part in all the public movements of the town, to the growth of which he so largely contributed that he was sometimes said to have "made Buxton." There is no doubt that his influence did much to extend the reputation of the important mineral waters and to foster the rapid growth of this bracing spa. He was buried on Tuesday, full of honors as full of years, all the town seeming to follow him to the grave. He had been so long associated with Buxton that many thought he must be much older, and I have often heard it said that he must be ninety, but I hear now that he was only eighty-six. He enjoyed the esteem of all his local brethren, as well as of a very wide circle of the profession in London. Of course he had practically retired for some years, but he retained all his faculties to the last, presided at the meeting of the hospital committee, in which he took the keenest interest, as well as those of the Public Gardens Company. He now and again saw patients, and I hear that he did so on the day of his death, which took place rather suddenly that night from heart failure. Buxton is one of our most important inland health resorts. It is situated in the beautiful peak district of Derbyshire, familiar to you from Scott's "Peveril of the Peak," though I believe the "Wizard of the North" never actually visited the locality. The town is nearly one thousand feet above the sea level, and there are higher hills round about, but they cannot be said to protect it from winds. In sunny weather it is hot enough, but on dull days there is always a keen breeze, and out of the short summer season it must be very cold compared with London. I have been there often enough to experience its varying moods. The mineral waters belong to the indifferent class; in fact, "mineral" is a misnomer, for the water contains none and approaches distilled water, unless account be taken of the free nitrogen present. The temperature of this water is 82° F., and the natural baths are considered the most valuable, although there are hot baths for those who cannot take the natural one. The place has from a remote period been celebrated for rheumatism and gout, and in the season is crowded with sufferers from these diseases. Rheumatoid arthritis is often relieved by a course at Buxton, which maintains its repute as our best resort for these chronic invalids, many of whom spend three or four weeks there every summer.

OUR BERLIN LETTER.

(From our Special Correspondent.)

THE NEW TUBERCULIN—PASTOR KNEIPP—CANCER AND TRAUMA—BLACK-WATER FEVER.

BERLIN, July 15, 1897.

THE festivities of the Congress for Internal Medicine, which were reported in detail in my last letter, are all over; members and guests coming from all places in Germany have departed for their individual homes, well satisfied with the work done. Each one pursues in silence his further labors and researches, perhaps to bless mankind soon or in after-years with some valuable discovery. In spite of the distressing heat of the dog days, scientific Berlin works on untiringly.

The first professional opinion upon the new tuberculin was expressed lately before the Dermatological Society of Berlin. As may have been expected, judging by the shortness of time in which this remedy has been before us, there are considerable caution and conservatism indicated in the opinion, which is by no means unfavorable. Of course it covers only the treatment of lupus (skin tuberculosis). Professor Lassar showed five patients who had been receiving the injections for three months, beginning with one-five-hundredth milligram and gradually increasing. He (Lassar) could not speak of a real curative effect, but there certainly was an improvement without any general disturbance of the system. One surprising feature of this treatment is its expensiveness, the daily cost for the five patients being seventeen marks ($4). The other dermatologists present who participated in the discussion all expressed themselves very cautiously; some even took an opposing stand upon the question. Before forming a definite opinion, it would be best therefore to await the results of further careful investigation. If not, there might occur the same wild scenes of seven years ago, when the first tuberculin made its appearance.

As we see the adherents of the medical schools achieving success after success through orrhotherapy, so we note cries of woe and lamentation within the camp of their opponents, the antimedical crowd, at the loss of their leader and master, the world-renowned Pastor Kneipp. The death of this man in Wörishofen, after a lingering illness, on June 17th, is an event which even a medical journal must chronicle. Even though we must regard his working, from a medical standpoint, as harmful, yet we must not class this man with the ordinary run of quacks, for he labored not for personal benefit, but was actuated by love of the human race and a faith in his own teachings. He certainly achieved some good through his warnings to lead a temperate and rational life. While we cannot attack the personal character of the man, yet there remains, on the other hand, the fact that his activity was a most unwholesome one, for the number of the duped patients at Wörishofen is an enormously large one, as every practising physician of Munich can relate. He did much to introduce and widen the use of cold water among the populace, but in no wise did he advance scientific hydrotherapy. Following its originator, the so-called Kneipp system will disappear from the scene.

It is a certain satisfaction to observe in these times, when there is a tendency to ascribe as the cause of most diseases some form of microscopic organism, that some investigators recognize other factors, which are not of a parasitical nature, as playing an important etiological rôle in disease, especially as regards malignant tumors. This is shown by a paper read by Dr. I. Boas, at the Verein für innere Medicin, upon "Traumatic Intestinal Carcinoma, with Especial Reference to Accident Insurance." This question is of vast interest to us Germans, because the law grants a yearly stipend to a workman suffering from carcinoma (or to his heirs in the event of his death), if it can be shown that there was a trauma preceding shortly the appearance of the carcinoma. In sixty-two cases observed by him during the past few years, Boas obtained a history of nine of them. Of these, two were œsophageal cancers, six stomach, and one liver. According to his statistics, Boas finds that heredity plays a minor rôle; three times was there cancer in the ascendants, and seven times among the brothers and sisters. The trauma which entered into the etiology of these cases was received from a few years to a few months previous to the appearance of the first symptoms. The speaker is of the opinion that a carcinoma may remain latent for years until an accidental cir-

cumstance (among others a trauma) may call forth an active cell proliferation. He also believes that a cancer may retrograde, for at autopsies cancers of the stomach have been casually observed in persons who during life never had stomach disturbances. From personal observations and deductions arrived at from general considerations, Boas draws the important practical conclusion that in accident insurance traumatism must be accepted as a cause of cancer. The law does not ask for positive evidence of the relation between trauma and cancer, but merely a strong probability. The verdict of the past few years in accident-insurance cases has sustained this opinion.

At the Berliner medicinische Gesellschaft, Dr. Below reported some interesting facts about the so-called "black-water fever." Long years of personal experience in Mexico and the reports of others in New Guinea have brought him to conclude that this disorder is more closely related to yellow fever than to malaria. He is certain that the melanuria occurs only after the administration of large doses of quinine: that it is, therefore, not a symptom of the disease, but a result of the quinine therapy.

The researches of Dr. Gürber, of Würzburg, cast a new light upon the mooted question of the function of the suprarenal bodies. He first verified the known fact that watery extracts of the suprarenal bodies cause an increase of blood pressure in animals; he furthermore succeeded in obtaining a substance from the extract which exercises a direct contrary physiological effect, viz., diminishes blood pressure. Evaporating the watery extract at 100° C. (212° F.) to dryness, he obtained this new factor each time readily. It is much more poisonous than the substance which raises blood pressure, for after injections of apparently minute quantities into animals, death ensued very soon, with symptoms of cardiac paralysis. Gürber is of the opinion that this blood depressor exists ready formed in the suprarenal bodies, but has remained unknown heretofore because its activity was masked or neutralized by its antagonist, and only after the latter has been destroyed does it become effective. These two substances in the suprarenal bodies really appear to antagonize each other. It has not been possible to isolate them, each for itself. Gürber's discovery is a great advance in the study of the rather obscure functions of the suprarenals. We hope that even this problem will soon be solved.

LINEAR ELECTROLYSIS.

To the Editor of the Medical Record.

Sir: In your issue of July 17, 1897, is a letter from Dr. J. A. Fort, criticising my paper entitled "Results of Chemical Electrolysis *versus* Divulsion or Cutting in Treatment of Urethral Strictures." I nowhere in my paper undertook to determine who was the true inventor of the instrument called by Dr. Fort his "electrolyzer." On the contrary, after exhibiting models of Dr. Fort's and Dr. Butler's instruments, I pointed out the difference between the two instruments, and left the question of priority entirely to the consideration of my auditors. Instead, as Dr. Fort presumes, of assuming that there was but one size of his electrolyzer, I suggested that difficulties regarding the size of the instrument could be overcome by having various-sized instruments.

The next point made by Dr. Fort is that sometimes as high a current as forty milliamperes is used. So high a current would almost certainly pass the instrument through the stricture, but in almost every instance destroy the mucous lining of the urethra; the passage would be obtained rather by cauterization than electrolysis.

Dr. Fort insists that I do not understand his *modus operandi*. Perhaps I do not, but I demonstrated by experiment before the New York County Medical Association that the chemical electrolysis which took place by using ten milliamperes for thirty seconds was so slight as to be hardly perceptible, which statement is verified by the annexed letter of Mr. Livingston:

"July 26, 1896.

"The experiments of electrolysis referred to in Dr. Newman's paper, published in the New York Medical Record of March 27, 1897, were conducted by the undersigned in the presence of the physicians attending the meeting, and the results stated and demonstrated to the society as obtained are absolutely correct in every particular. T. F. Livingston."

I have operated twice according to Dr. Fort's rules, and in both cases caused pain and hemorrhage, with a result very unsatisfactory. A chemical experiment demonstrating a result is a fact, and can be met only by ocular demonstration showing an opposite result. It cannot be "silenced" by observations.

Lastly, Dr. Fort, in his paper, admits that his method does not cure but only alleviates strictures, when he says: "In order to prevent relapses it is necessary to pass a bougie along the canal from time to time." When a stricture is properly treated by electrolysis, the stricture is so completely absorbed that the urethra is restored to its normal condition and thereafter it is wholly unnecessary to pass any instrument through the canal for any purpose. This result I have produced in several thousand cases, some of which are of twenty years' standing, without relapses, and many of which have been investigated by a medical board, and by said board found to be as I stated.

I therefore still contend that Dr. Fort's method of practice is not true electrolysis. My purpose in my former paper was not to criticise any method of treatment, but to compare the various methods of treatment of strictures of the urethra, and to prevent misrepresentation of the method which I have advocated. I claim that such does not cause any pain: the patient is not detained from his business: no tissues are burned or destroyed, but stricture only absorbed by chemical action; no relapses have occurred after a cure has been made: and afterward there has been no occasion for the introduction of a sound or catheter. Such cures have been accomplished in an average of two months, having required a *séance* once a week.

Robert Newman, M.D.

New York, July 30, 1897.

DEFERRED CREDITORS.

To the Editor of the Medical Record.

Sir: I recently took occasion to dun a patient whom I have treated for the past twenty-three years and never received one cent in payment—not even a load of hay or a bushel of oats for my nag. He said: "Doc., I'm liable to pay you most any time. I haven't got down to you yet."

This reminds me of what Samuel Foot said one hundred and fifty years ago, in "The Lame Lover":

"*Sir Luke.*—A pox o' your law. You make me lose sight of my story."

One morning a Welsh coachmaker came with his bill to my lord, whose name was unluckily Lloyd. My lord had the man up.

"You are called, I think, Mr. Lloyd?"

"At your lordship's service, my lord."

"What, Lloyd with an L?"

"It was with an L indeed, my lord."

"Because in your part of the world I have heard that Lloyd and Floyd were synonymous—the very same names."

"Very often indeed, my lord."

"But you always spell yours with an L?"

"Always."

"That, Mr. Lloyd, is a little unlucky; for you must know I am now paying my debts alphabetically, and in four or five years you might have come in with an F, but I'm afraid I can give you no hopes for your L. Ha, ha, ha!"

I'm afraid my man will never get down to P.

H. R. PORTER, M.D.

BISMARCK, N. D.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 31, 1897:

	Cases.	Deaths.
Tuberculosis	24[illegible]	[illegible]
Typhoid fever	[illegible]	[illegible]
Scarlet fever	[illegible]	[illegible]
Cerebro-spinal meningitis	[illegible]	[illegible]
Measles	[illegible]	[illegible]
Diphtheria	[illegible]	[illegible]
Laryngeal diphtheria (croup)	4	2
Chicken-pox	[illegible]	

The Prevention of Tuberculosis.—A writer in a recent number of the *British Medical Journal*, in discussing this question, states that since Koch's discovery it has been manifest that phthisical sputum furnishes the infective material of tuberculosis. Schill and Fischer showed that dry phthisical sputum remained infectious for a long time. Dr. Cornet conducted experiments with the dust of rooms and hospital wards in which phthisical persons were being treated, and found that when no particular care had been exercised in removing infectious discharges this dust contained sufficient infective material to cause the disease when injected into a guinea-pig. Dr. James Niven read a paper before the Epidemiological Society, March 19th, in which he said that the registrar-general's returns showed an enormous reduction in the mortality from tuberculosis during the last fifty years; this might be partially due to better diagnosis and changes of nomenclature, but it was also partly due to sanitary progress. Congenital tuberculosis must be extremely rare. Boltz, in twenty-five hundred and seventy-six necropsies on children under fifteen years of age, failed to find the least trace of tubercle in any under one month; of those between three and six months, 8.6 per cent. were tuberculous, and as the age advanced the percentage of the tuberculous cases increased. Heredity, in the strict meaning of the term, was improbable, though the children of consumptives, like all persons with narrow chests and enfeebled constitutions, were more susceptible to infection. The *British Medical Journal* mentions, as a reason why tuberculosis has not been brought under control, that there is a marked disinclination on the part of many practitioners toward any interference by sanitary authorities with their treatment of tuberculous patients. Dr. Niven advises that spittoons should always be used in the sick-room, and provided in workshops, lodging-houses, railway carriages, etc. He urges the control of dairies, and says that tuberculous milk should not be given unboiled even to pigs. Dr. Willoughby, in discussing Dr. Niven's paper, said he believed that the prevalence of consumption among the native population of health resorts, and the way in which each was in turn discarded in favor of some other, was a result of their becoming saturated with infection. There was no doubt that there should be special regulations in these resorts for the prevention of the dissemination of tuberculosis. Dr. Nocard has called attention to the great faculty of spreading which tuberculosis possesses when it is once introduced into a herd. He shows how easy it is by proper and simple means of isolation to save sound animals. It would be an advantage to have an intercommunication of ideas betwen scientific observers and agriculturists on the preventive measures which may be usefully and economically taken. The pathologist and physician would be stimulated to appreciate and overcome the difficulties which beset the breeder and cow keeper, and the owners would realize the advantages which would accrue from rational precautions. Meat from tuberculous cattle should also be condemned.

An Expensive Testimonial.—A veteran living in the interior of Massachusetts recently gave a testimonial to a patent-medicine manufacturer, stating that he had been entirely cured by the nostrum. It seems that he was receiving a pension for the ills of which the medicine cured him, and that when the authorities learned of his recovery his pension was cut off. Is he likely to suffer relapse? and if he does will he get back his pension?—*Boston Medical and Surgical Journal.*

Effects of Absinthe.—Dr. Pauly, in *La Médecine Moderne*, relates his observations on a man, thirty years of age, who, wishing to commit suicide, took three-fourths of a litre of absinthe. Three hours later he had not vomited nor had he regained consciousness. Injections of ether, artificial respiration, and lavage of the stomach were resorted to. A stomach pump was introduced, and part of the absinthe flowed off almost pure. Forty litres of water, at a temperature of 35° C., were then passed through the stomach. Respiration returned, and the heart became regular, but there were complete coma and abolition of reflexes. The following day the patient died. At the autopsy they found an acute desquamative gastritis, nephritis, with diffuse renal hemorrhages. Alcohol was present in all the organs, but was especially abundant in the brain. Dr. Pauly attributed the symptoms more especially to alcohol, the characteristic effect of absinthe being the production of epileptiform coma. Dr. Lepine did not entirely concur in this opinion. Absinthe is not only an epileptogenic poison, but has also a stupefying principle which would add its action to that of the alcohol.

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the United States Marine Hospital service during the week ended July 31, 1897:

		Cases.	Deaths.
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Medical Record

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Original Articles.

PERSISTENT TACHYCARDIA WITH DIGESTIVE AND NERVOUS DISORDERS.[1]

BY W. H. THOMSON, M.D., LL.D.,

NEW YORK.

My attention has been drawn for some years to cases occurring in my private practice of persistent non-febrile tachycardia which could not be accounted for by any inflammatory or structural disease of the heart, nor by any concomitant affection of the kidneys, nor of the brain or spinal cord. Of course also they were not cases of paroxysmal tachycardia, as the rapid action of the heart was continuous for prolonged periods, and when recovered from the subsidence was in each case very gradual. Moreover, in no instance was the tachycardia the only affection present, for without exception this seemed part of a general derangement, of which the most pronounced accompaniments were digestive and nutritive disorders, coupled with serious nervous symptoms, both sensory and motor. While I could cite also similar cases from the wards of my service in the Bellevue and the Roosevelt hospitals, I prefer to quote from my records of private patients, because naturally they were followed up for much longer periods than could be possible with hospital cases.

CASE I.—Mrs. C. H——, widow, aged sixty-five. Seen first, April 11, 1896. Patient stated that she had been quite healthy until some two and one-half years ago, when she began to suffer from constantly recurring attacks of nausea on rising in the morning. At first these would pass off after breakfast, but after some months they recurred often during the day, and for the past year the sense of nausea had been almost constant. During the past year especially she felt that she was losing ground and was growing very weak, all of which she attributed to the state of her stomach. But on November 1, 1895, she developed a series of severe and anomalous symptoms, consisting of violent paroxysmal pains over the head and scalp, with excessive tenderness of the external ears, which became very red, particularly the left. She described the severest pain as radiating from the left ear to the neck, so that she could not lie on the left side. She then had violent neuralgic paroxysms in the jaws, accompanied by stiffness of the tongue, so that she could not protrude it. She also had intense pains in the palms of both hands, and finally in the legs, especially about the hips and knees, but all her pains had more or less tendency to shift. When they occurred, however, whether in the neck or in the upper or lower extremities, the muscles of the affected part became stiff and painful on movement. Latterly she began to have alarming attacks of vertigo, accompanied by a sense of impending death and ending in free vomiting. She could not turn in bed, especially to the left, without inducing dizziness. During the vertigo she had sensations of falling rather than of turning, or else while in bed the whole room seemed to turn round. She had no tinnitus, but I found that she could hear my watch tick only for one inch from the left ear and for twelve inches from the right. At times she had temporary diplopia, but I could find no evidence of paralysis in any of the ocular movements. Occasionally also she had transient but distinct attacks of aphasia, but more commonly of paraphasia.

On examination I found the patient much emaciated, and her family stated that she had been losing flesh markedly since her pains began. The temperature was normal, and remained so or slightly subnormal throughout her illness. The pulse was 156, regular but small, weak and very compressible. No cardiac murmurs. Cardiac percussion area of dulness normal. No tremor in muscles of the face, of the tongue, or of the hands. Knee reflexes normal. No pulmonary affection whatever, no enlargement of the thyroid and no exophthalmos. Liver and spleen normal. As to the alimentary canal, the tongue was small, pointed, glazed, very red, and sore; in a few days aphthæ developed in the mouth and pharynx, as in a patient in the terminal stage of phthisis, making deglutition very painful; the stomach was dilated and tympanitic. There was no epigastric tenderness, no rigidity, and no evidence of tumor or thickening. Bowels habitually constipated. Urine amber colored; specific gravity, 1.025; no albumin or casts, no sugar.

The diagnosis of cerebral tumor had been made by her previous medical attendant, which was apparently justified by her attacks of vertigo, vomiting, aphasia, diplopia, cephalic pains radiating to the neck and extremities, and her continuous wasting. The fact, however, that her first symptoms were gastric and had so continued unchanged for over two years; that her pains were too shifting in character and were so widely distributed over such symmetrical regions as both palms, both hips, and both knees, as well as implicating the jaw and tongue; and that it was difficult to reconcile those about the head with the progressive irritation or pressure of an intracranial growth which would affect both ears, jaws, and tongue, with occasional aphasia and ocular symptoms, and yet without a sign of motor paralysis anywhere, or of any localized anæsthesia, and with normal reflexes—all made me doubt the presence of such a lesion. I once had, however, a patient who had similar attacks of vertigo and of occipital headache supervening upon a chronic purulent otitis, with a long history of progressive wasting ending in death. At the autopsy general chronic pachymeningitis was found, which had been set up by extension from the old ear disease. But in that case there were no tachycardia, no pronounced gastric symptoms, and no pains in any way resembling this patient's. On reviewing the totality of the symptoms of this case, therefore, my conclusion was that the tachycardia, with the nutritive and nervous disorders of the patient, was not due to any inflammatory or organic mischief, and the event proved that this surmise was correct.

A condensed abstract of the subsequent history of the case under my care is as follows: First, the pains of the patient were markedly and rather unexpectedly

[1] Read before the New York Academy of Medicine, June 3, 1897.

relieved by fifteen-grain doses of strontium salicylate three times a day. This at first sight would seem to indicate their rheumatic character, but the peculiarity was that no other salicylate, such as the sodium salicylate, salol, or salicin itself, appeared to approach the strontium salt in efficacy. Antipyrin, phenacetin, and acetanilid had no analgesic effect whatever. I have repeatedly tried the strontium preparation in other cases, but without any such unmistakable relief as with this patient, except in one case to be soon mentioned. The pains were by no means wholly removed, but were so plainly benefited that she continued to take from forty-five to sixty grains a day of the strontium salt uninterruptedly for eight months. On the other hand, an examination of the painful parts showed no correspondence to the signs of a rheumatic inflammation; there was no tenderness on pressure of any joint, no swelling anywhere, and no redness except of the ears. The tenderness on pressure was limited to the tendons and to the fascia of the muscles. There was nothing like peripheral neuritis, or true myositis, for the pains, which curiously stiffened the muscles and made them very painful on movement, in a few hours would shift elsewhere, always excepting the left side of the neck. Unlike rheumatic pains also, they were not affected by changes of the weather, nor were they worse at night. The patient always felt worse in every way on waking in the morn ing. Besides the persistent pain and rigidity of the muscles on the left side of the neck, she had for a long time contraction of the fingers with rigidity of the tendons in the palms of the hands, closely resembling the familiar palmar tenositis of gout. But she showed absolutely no other symptoms of gout, and the pulse was always weak and very compressible.

She was ordered to have a mercurial purge once a week, to avoid all meat and meat extracts, and to live principally on matzoon, kumyss, or peptonized milk, and take fish, poultry, rice, potatoes, and most vegetables, excepting asparagus and celery. Medicinally, besides the strontium salicylate, she took in capsules ten grains each of phenol bismuth and sodium benzoate, three times a day, varied occasionally with the addition of ichthyol. At one time, when the phenol bismuth was increased to forty grains per diem, the urine became dark and showed traces of albumin, so that it had to be decreased to thirty grains daily, which quantity she continued to take without cessation from April, 1896, to March 1, 1897—or a period of nearly eleven months.

The first effect of this treatment was to reduce the pulse from an average of 150–160 down to 110–120. But in other respects she seemed for a long time to grow worse instead of better. The tongue became still more sore, and from April 11th to May 11th my notes show that her nausea was almost constant. She could now lie only on her right side, for if she turned on her back, still more on her left side, the dreaded vertigo would soon come on. During the second month, from May 11th to June 11th, the stomatitis became very troublesome and the aphthæ increased in the mouth and pharynx, rendering deglutition very painful. I may mention that every ordinary prescription for stomatitis was tried without effect, but finally she seemed to be most benefited by infusion of rhus glabrum rhizoma, or sumach. The nausea also persisted as well as the dizziness; the patient continued to emaciate until she had to be padded with cotton batting to prevent bedsores. After nearly sixty days' treatment the attacks of diplopia seemed to become more frequent, her speech was often hesitating or paraphasic, and she was sometimes delirious at night. In fact, her condition appeared so serious that a fatal issue could not have been surprising. I could not see, however, any valid reasons for changing my first opinion of the case, and the treatment was ordered to be kept up without change.

About June 7th the pulse had dropped to 106 and was stronger. The stomatitis was slowly improving. Blistering of the left mastoid seemed to act favorably on the vertigo. The emaciation, however, continued, and the patient had great repugnance to food, owing to her fear of increasing her nausea, which was never absent.

After June 11th the nausea began to be much better. Both the pulse and the nausea, it had been frequently noted, improved for twenty-four hours after she had taken one and one-half grains of calomel in six fractional doses, one every fifteen minutes till the six were taken, which dosage was generally followed by a loose movement in about four hours. She always complained that the calomel made her feel prostrated at the time of action, but the next day the pulse almost always was reduced by ten or more beats and the stomach felt easier, and then in about three days more this improvement would seem to pass off.

On June 22d the excessive heat of that week affected her unfavorably, and the stomatitis returned, as bad as ever.

On June 27th she had an attack of total aphasia, now plainly motor, though before I had regarded it as of the auditory variety. It seemed induced by a bad dream, but I found no signs of muscular paralysis accompanying it on the right side. Before night she fully regained her speech. During this month, however, the dizziness was slowly improving, and one day she told me that she had read some in a magazine, for the first time in a year, as before that reading always brought on a sense of distress in the head.

During the fourth month, from July 11th to August 11th, the great heat of the season again had bad effects, though the stomatitis continued to improve and the nausea became less constant. One most annoying complication then occurred in phlebitis of the right saphena vein, with much œdema of the leg. As the weather improved, however, she began to gain markedly.

About September 1st the nausea disappeared entirely, never to return. She began to relish food, and after a calomel action on September 18th the pulse came down to 92, for the first time below 100. She now began to gain in flesh, color, and strength, and by the end of the sixth month of treatment she was able to walk down stairs.

A month later, in October, she went out driving, and the improvement in November and December was slow but progressive, the chief symptoms complained of being rheumatoid pains in her knees and some discomfort still in the head if she lay on her left side. Through the past winter she has gone about the city with but little inconvenience. Her appearance as to flesh and color is excellent.

The note on March 31, 1897, is that her tongue is perfectly natural; that her stomach gives her no trouble whatever, after more than two years of distress there; pulse, 86, regular and of fair strength, even after quite a long walk to my office; the only symptoms now complained of being occasional pains in the back and legs, for which she insists on taking the strontium salt until they are relieved. She also has some numbness in her toes and some twitching of the fingers.

The last entry is April 28, 1897. The patient can now lie on either side at night, and considers herself quite well. Her hearing is perfect in both ears. Her remark was that whenever she feels mean she takes a dose of calomel, which makes her feel meaner yet for a while, but the next day she is all right.

On thus reviewing the chief clinical details of this case, the question seems pertinent: What disease did

this patient have? That it was a dangerous disease for a time, no experienced physician could doubt. In fact, a really long-persistent tachycardia like hers, verging upon 160, could be no trifling matter, whatever the other conditions were. But in trying to come to a conclusion about the nature of the malady itself, a diagnosis by exclusion may possibly be hazarded. Following the safe clinical rule to begin with the beginning and then keep hold of the first important symptom which maintains throughout a prominent relation to the complaint, we must admit that pronounced gastric derangement preceded for nearly two years every other symptom; also that it afterward accompanied all other developments, until they in turn disappeared with the disappearance of the gastric trouble. That she never had any serious inflammatory cerebral mischief is evident from the fact that she never had any febrile temperature, while it is equally patent that her numerous cerebral symptoms were not due to any tumor or abscess by her getting well of everything when her stomach improved. That she had neither rheumatism nor gout is plain from the consideration that neither of these diseases is preceded by nausea for two years, nor do they give rise to diplopia, repeated vertigo, or aphasia, nor do they occasion extreme emaciation with aphthous stomatitis, or purely functional continuous tachycardia for months together. That she did not have Graves' disease, if by that is meant exophthalmic goitre, was plain by the fact that in her emaciated throat the thyroid seemed atrophied if anything, nor was there the least protrusion of the eyes or weakness of the eyelids, and certainly she had no myxœdema. My surmise at my first visit was that she was suffering from a grave form of toxæmia of gastro-intestinal origin, and the treatment was perseveringly followed according to that supposition. My reasons for maintaining that view were that though an extreme, yet hers was not an isolated example in my experience of what I now consider a definite disease, with characters as special as those of any other affection which has a name, the leading manifestations of which are a persistent rapid action of the heart, conjoined with greatly varied and yet characteristic functional nervous disorders, and apparently accompanied by certain digestive derangements as regularly as diabetes mellitus is accompanied by saccharine polyuria. So definitely associated are these symptoms in these cases that now, whenever I am consulted about certain nervous troubles, I early take note of the pulse, and if tachycardia be present which proves to be persistent and not simply from excitement, and is not to be accounted for by the other well-known causes of cardiac overaction, I then suspect that the nervous derangement is due to this particular malady, and recommend special treatment accordingly.

Case II.—Mr. G——, lawyer, a light-complexioned, fairly well-nourished man, aged forty-two, first consulted me on October 28, 1895. He said that eighteen months before, without any antecedent gastric or other trouble, he was taken quite suddenly one day with nausea and distress in the stomach, which have continued ever since in spite of treatment by a number of physicians and consultants. He has never felt any real relief except for brief intervals while on outings. His symptoms are nausea and an ill-defined sense of distress referred to the stomach, which is not aggravated by eating or worse when the stomach is empty. There is no spontaneous pain there, nor is any induced by pressure. He generally feels worse on waking in the morning and best in the evening. He can lie on his left side as well as on the right.

Inspection showed pupils normal in their reactions, knee jerks normal, no shooting pains, no ataxia. Examination for movable kidney negative. Epigastrium very prominent, and this proved to be due to a decided enlargement of the left lobe of the liver, whose lower border was nearly two inches below the lower limit of the right lobe. There was no enlargement of the spleen, but the stomach was dilated, its tympanitic resonance extending from the sixth interspace to near the umbilical line. Though there was epigastric muscle resistance, yet there were no other signs of gastritis; he stated that he had had his stomach washed out very often, but with nothing excepting clear water being brought up. He says that after every movement of the bowels, even when of natural consistency, he has a sense of having had diarrhœa, which sensation lasts for some time afterward. The urine has been repeatedly examined and always found normal. His tongue was covered with a thick brown fur, and he said that a year ago it was quite black. He did not use tobacco. I found, after a number of countings, that his pulse averaged 130, and was not at all affected by movement. There was no cardiac enlargement or murmur. But besides his dyspeptic symptoms, his chief complaints were of recurrent attacks of nervous prostration, most pronounced on waking in the morning, which made him feel wholly unfit to attend to business. These might pass off in a few hours and he would then go to his office, but they were often accompanied by a sense of weakness and sometimes by severe aching in his legs. These sensations in his legs sometimes came on quite independently of his gastro-intestinal symptoms. He never had any pain or aching in the back, and only occasional headache. When this did occur it was occipital. He showed no signs of muscular tremor, no enlargement of the thyroid; the expression of the eyes was natural.

This patient attended very regularly for a year, and for a number of months his troubles proved very tedious and intractable, being further complicated after a time with obstinate morning diarrhœa. At first I tried a great variety of remedies for dyspepsia, with no better success than my numerous predecessors had. I then learned from him that while living at College Point, Long Island, about fifteen years ago, he had prolonged chills and fever for some three years, which he got rid of only by going abroad. He then had a chill on the third day after getting back, but none since. Accordingly, on the supposition that his present troubles might be due to latent malarial infection, he was treated with full doses of quinine, Warburg capsules, arsenic, and ergot, with counter-irritation over the enlarged lobe of the liver, but without benefit. Meantime his pulse kept up between 104 and 135. His temperature was never noted above normal. Neither digitalis nor strophanthus had any effect upon the pulse, and they had to be given up on account of exciting nausea.

Finally, on February 7, 1896, after a bad week, I determined on a change of treatment, letting his cardiac and gastric symptoms alone so far as medicines directed to them were concerned, and put him on an exclusive diet of peptonized milk with phenol bismuth and sodium benzoate, of each forty grains a day. In a week his diarrhœa was checked and his pulse dropped to 108.

A month later, on March 14th, the record is that he has been much better, has had only one loose movement the past week; pulse, 102; he says that he has counted it down to 90.

After another month, April 20th, he reports that his diarrhœa has entirely ceased, and that his nervous symptoms have so much improved that he has not missed a day from business, although he occasionally has some nausea.

As his pulse still was at 110, I ordered three-grain doses each of ichthyol and salol to be added to the phenol bismuth, t.i.d.

June 2d, he has been improving steadily: has had

none of his old nervous symptoms, no gastric uneasiness, no diarrhœa; liver dulness diminished, but left lobe still larger than normal. Pulse, 98. To continue treatment.

October 19th, just short of one year since beginning treatment, he reported that he kept up the peptonized milk and the medicines until September 20th. Since then he has been on ordinary diet and feels quite well; pulse, 86.

In this case the clinical peculiarity in the history is the sudden beginning of the gastro-intestinal symptoms on a definite day, without any error of diet or other reason to account for them. But to the patient a serious element was the disabling nature of his nervous symptoms, which were both mental and sensory, and which when present made him incapable of mental effort. The effect was as specific and often as temporary as if he had taken a single dose of some paralyzing narcotic poison. It was the regular onset of this condition on his waking in the morning which first excited my suspicions that he had this particular malady, whatever we may call it, for I have always found that these patients feel worse in the morning, whatever their general symptoms be.

Case III.—Miss L. W——, aged forty-two. Patient of unusually equable temperament, without the slightest indication of hysteria. She had commonly enjoyed excellent health. She first consulted me April 20, 1895, for a sudden access of pain in her left ear and left arm, and also an aching under the right scapula. As her eyeballs looked rather yellowish, she was first treated with a calomel laxative for hepatic disorder. These symptoms, however, continued, irregularly recurring, for more than a month, and as they were ascribed to malaria she took quinine from time to time, without further advice, for a number of months.

Nearly a year afterward, April 6, 1896, after having suffered from her symptoms for some time, accompanied by some gastric uneasiness, she again consulted me for pain in the left side of her head. She said that headaches were very unusual with her, but that this pain often centred in her left ear, which became very sensitive to the touch. This symptom, in fact, was precisely similar to the curious ear sensitiveness detailed in the history of Case I. In addition, she had frequent attacks of pain on the middle of the right clavicle, to which she attached a good deal of significance, which I did not understand at the time, but which she afterward explained. She also had pains in her hands and tips of the fingers, especially on the fingernails, as she described them. Pains were complained of also in her shoulders and in the middle of the back. Pulse, 126.

She was ordered fifteen grains of the strontium salicylate, three times a day, and was as much relieved by it as Case I. was. Her other symptoms, however, continued, and more than a month later, May 30th, she complained of an additional ache, rather than pain, in her throat. Pulse, 120.

Patient then went to the country for the summer, so that I did not see her again till September 14, 1896. She stated that she had been feeling badly all summer. Pain was still frequent in left ear. Pulse, 120. But a new symptom was sudden attacks of total blindness in her right eye, lasting some five minutes. The sight then returned all right, but was followed by pain in the eyeball for some time. During these attacks the sight of the left eye was wholly unaffected. She had no diplopia, no hemiopia, no contraction of the field of vision during these attacks (she had been directed to observe for herself, being a very intelligent woman). She had no tremor except in the tongue; this was not fibrillar.

I may here remark that this affection of the eyesight is interesting on account of its resemblance to the ocular derangements of migraine. But this patient had never had migraine before, while this particular symptom occurred in her about the time of life when migrainous headaches begin to decline. I have long held that migraine is of toxic origin, and this disturbance of sight in the present patient would seem to confirm the supposition that her affection is also toxic.

On November 10, 1896, there is a record of pronounced weakness in the knees; also pains about the heart, radiating to the inner surface of the left upper arm; also much pain in the tip of the second left finger. Pulse, 124. No cardiac murmur, no arrhythmia. No enlargement of the thyroid, no exophthalmos, no tremor of the eyelids when closed. The patient stated that she had been feeling much better under the treatment ordered September 14th—exclusive milk diet and intestinal antiseptics, with tincture of strophanthus—until she took dinner at a friend's, where she ate both meat and lobster, the cardiac pain returning on the next day. On resuming treatment, she again improved in her neuralgic symptoms, except that during an attack of influenza, April 12, 1897, she had a severe neuralgic pain referred to the left mastoid and to that ear. The patient is still under treatment, and the pulse continues to range between 110 and 120, but her pains are much relieved as long as she keeps to the milk diet, which, however, is a serious infliction to her.

Now in this patient, as in Case I., we have very similar nervous symptoms, without, however, the serious nutritive disorders which that patient had. It is interesting also to note the control of the pains about the joints, when they occur, by the strontium salicylate; but the other localized neuralgias are not affected by it, nor, as in Case I., are they relieved at all by bromides or antipyrin or phenacetin.

Case IV.—In my experience this variety of pains which the histories of both Case I. and Case III. illustrate is peculiar to this class of patients, and therefore might be very puzzling to account for if the nature of the complaint itself were not recognized. This is shown in the story of Case IV., a Miss G. H——, schoolteacher, who was brought to me recently, May 15, 1897, by Dr. H. W. Kice, of Port Oram, N. J., and which I here include on account of the difficulty in diagnosis which her physician had in accounting for the pains which the patient complained of. I append his history of the case as follows:

"The patient first complained four years ago of a feverish condition, especially at nighttime, when she would be very thirsty. This condition lasted for about two months, being sometimes better and sometimes worse, though she all the time continued about her work. Following this trouble she complained of pain in the heels, particularly in the right—a sensation as if the skin was rubbed off. She says that before any of the above symptoms were observed, for a year or two she suffered from cramps in the feet and calves of both limbs, the right generally being the worse; the cramps sometimes lasted a few minutes, at other times an hour, and occasionally all night. After the pain in the heel had lasted for about three weeks, it went into the entire foot, then both feet; then the feet became numb, as if asleep, the arms experiencing the same feeling. The patient's attention was attracted to the condition of the hands when she tried to pick up a pin or needle from the floor, or anything that required the hands to be down; in fact, simply hanging the hands down caused pain in the tips of the fingers. The hands got very red on hanging down. In walking, the legs from the knees down felt like sticks of wood—stiff. They at first had a sensation as if in ice water, when suddenly they felt

hot, the sensation passing from one extreme to the other. The head symptoms were very noticeable; the first attracting attention was a feeling as if the entire head was in a tight rubber cap. She would also at times experience a sensation of vertigo, or as if the ground were coming up to meet her. Several times on rising in the morning the patient felt pain in the stomach, very severe, running through to the spine. This pain would last for an hour or two, and would subside without treatment. These pains were always more noticeable in the morning.

"I was called at midnight four years ago in October to relieve her of a severe gastralgia, at which time I took the case in charge. The patient lost eighteen pounds in two years, from one hundred and eight she was reduced to ninety. Under treatment she regained the lost flesh, gaining twenty pounds. The general condition has improved, so that the patient now weighs, after four years, one hundred and eight pounds, which was her normal weight. But she has failed to find relief from the other symptoms described above. Her condition at present is about the same. She finds it almost impossible to do any amount of reading without feeling the fulness in the head. There is also a constant desire to close the eyes—not for sleep, but for contentment. A sensation of soreness along the spine, as if having been pounded, is complained of in the morning; also a nauseous feeling, which soon passes off after rising. There is tendon reflex. The pupils react to the light. There is a slight swaying of the body when the eyes are closed or arms extended. There are no lightning pains.

"The above history of the case was taken last autumn. The symptoms have continued since, not constant, but varying; sometimes a few symptoms only annoy the patient, at others there would be much suffering. In April last I saw her for a severe gastralgia. The pain was severe in the right side. Pain has been most constant in the left side for the last two months. The bowels are constipated. The patient is troubled with insomnia; she passes perhaps one night a week without sleep. Heart action rapid, 120 per minute."

Examination: Patient pale and emaciated, with an anxious expression. She said that besides her other pains she had lately had a severe pain in her right ear. The character of the pains showed that they were not due to peripheral neuritis. Knee jerks and other reflexes were normal. Pulse, 130. Her physician said that he had never counted it below 120 for four years. There was no enlargement of the thyroid, but patient said she often had a sense of tightness there. There was no exophthalmos, but the palpebral fissure was widened and the lids were very tremulous on closing, especially the left.

In other cases the gastro-intestinal symptoms are the chief manifestations for which the patients seek advice, as in Case II., and here again, so long as the nature of the malady is not recognized, the treatment is naturally directed toward remedying the supposed digestive derangements, but with most disappointing results as regards both stomach and bowel troubles. I have been struck with the total failure of all the reputed remedies for derangements of the stomach, including lavage, which in these patients have proved useless, when faithfully tried either by myself or by others before me. This disappointment is still more likely in the treatment of the diarrhœa, when that is present. In these patients it is a painless watery flux, coming on in the morning, but the frequent sense of uneasiness in the bowels is always accompanied by bad feelings in the head and a sensation of general depression. Astringents only increase this discomfort, and they control the looseness but temporarily. Of course the continued absence of a febrile temperature with the tachycardia must be carefully noted, in order to exclude the presumption of tuberculosis. Another mistake in such cases is to rest content with the adoption of that equivocal term, "neurasthenia." All the symptoms of nervous weakness may be present in these cases, and I have found that every antineurasthenic remedy has been tried, from strychnine to hydropathy, or I have tried them myself, without any permanent benefit, as the record of the following shows:

Case V.—Mr. J. C——, cashier, aged forty, consulted me first, June 13, 1894. This gentleman has a sister, whom I treated for epilepsy of seven years' duration in 1881, and from which she quite recovered, so that I was not consulted again by her for fifteen years, when she came with symptoms of Graves' disease, from which in the course of about a year and a half she also recovered. Mr. C—— consulted me, as above, for persistent gastric and intestinal uneasiness, accompanied by almost constant occipital headaches and spinal achings; he slept badly, awoke unrefreshed, and always felt worse in the mornings. What he also especially complained of was tremor of the right hand, interfering with his signing checks. Pulse, 104. As he seemed a very nervous subject and a chronic dyspeptic, he was treated accordingly throughout 1894, but with very varying results. In 1895 my notes show him still complaining of frequent sense of prostration, constant feeling of pressure in the head and pains in the eyes, pulse not falling below 100, and with frequent attacks of palpitation and continued tremor of the hand. He had often taken quinine on the hypothesis of malaria, but if anything felt the worse for it. Headaches were most relieved by ten-grain doses of antipyrin and twenty-grain doses of ammonium bromide, repeated in two hours and always taken in the morning. Throughout July, 1895, he had morning diarrhœa, with much increased tremor in the right arm. The rest of the story of 1895 is that of ups and downs, the patient feeling best when giving up all business and going on a long vacation in the country, the morning diarrhœa then ceasing of its own accord. He relapsed, however, on returning to the city, and January 1, 1896, he complained of aching in the right shoulder and neck and upper part of the right leg, with a feeling of general nervousness. He had been taking cod-liver oil and various tonics. For a time he seemed to improve under arsenic and ichthyol, with sodium benzoate at night, but my notes in April and May and June, 1896, record frequent returns of his morning diarrhœa, which was always painless; also early waking with feelings of gastric distress, severe neuralgic pains in the back of the head and neck, for all which he again tried the country cure. He was not benefited, however, and returned August 10th, with severe morning headaches, prostration, very troublesome palpitation, tinnitus, tremor of hand, and pains in the eyes. I should mention that I sent him on this account to Dr. Carl Koller, who reported that nothing in the condition of his eyes accounted either for the pain in them or for the headaches. He was accordingly put upon the treatment for persistent tachycardia with digestive disturbance and nervous symptoms—namely, abstinence from meat, matzoon diet exclusively, with sparing use of vegetables, on account of his diarrhœa, and a blue pill once a week, with phenol bismuth and sodium benzoate.

The notes that I may cite are, first month, September 11th, diarrhœa stopped; still has headaches, but lessening in severity.

October 7th, feels generally better; treatment continued.

March 7, 1897, has not reported all winter because he felt so much better; has been continuing treatment faithfully. Pulse, 80.

As this patient recovered from his tachycardia, the tremor of his right hand improved so that he could use it again. But the tendency to headaches and morning depression returned again, April 27th, and still continues at the last date, May 31st, though the pulse is only 76. He avers, however, that nothing makes him feel so well as the blue pill, as the next day after taking it is the best in the week. Such relapses must be expected in chronic digestive troubles of whatever kind, but the improvement during the past winter is so evident that the patient is well content to persevere.

I have had several patients with this form of persistent tachycardia, who complained much of pain in the eyes, generally, however, along with headaches similar to those experienced in this case.

Thus Miss B—— first consulted me, February 8, 1894, for daily severe headaches with pain in the eyes, always worse in the morning on waking, suggesting, therefore, that use of the eyes did not cause or at least did not aggravate the headaches. Dr. Koller also examined her eyes, and reported that there was nothing in them to account either for the pain or for the headaches. Her pulse, counted at repeated visits, ran from 130 to 140. Under treatment, outlined as above, her symptoms all improved in about two months.

Case VI. — Miss C. B——, aged thirty, music teacher, first consulted me for this condition, October 21, 1896. This patient's trouble could easily be mistaken for a case of hysteria, as she was very nervous and emotional and had so many troubles to complain of—as insomnia, constant headaches, pains in the eyes, pulsation felt in the head and, as she averred, in the neck also, with pains at the last cervical vertebra and coccygodynia. She, moreover, especially dreaded her fits of mental depression. She was also much disfigured with pustular acne. Her appetite was poor, and she complained of great gastric discomfort, without, however, symptoms of gastritis. At repeated visits from October, 1896, to May, 1897, the pulse ran generally above 120, but at the last visit it was 94. I mention this case more for the purpose of directing attention to the symptoms of mental depression, which, I think, in this class of patients is very frequently misinterpreted as hysterical. I have for many years, when the question of this protean disorder of hysteria has arisen, been accustomed to rely on certain, to me, distinctive mental accompaniments, the undoubted presence or absence of which has determined my diagnosis accordingly. Of course this element, in this cerebral complaint, cannot be described in a word; but to say that hysteria must somehow be spectacular perhaps comes nearest to my meaning, as it implies that mental disposition illustrated in the anecdote of the Frenchman, who was complimented on the emotion which he displayed at the funeral of a friend. "Ah, but you should have seen me at the grave!" was his reply. There is something dramatic about the hysterical patient, even when she is dumb, which is distinctive. Now in this patient, and in others with this form of tachycardia, there is often much nervousness present, but it is not in the least spectacular, any more than the approaching delirium of fever is; and observation of the action of the heart soon proves that its rapid action cannot be due to emotion. The presence of true tachycardia must be based upon repeated careful examinations of the pulse, for nothing is more common than mere emotional quickening in weak or nervous patients. When due to excitement it will invariably be found to vary on the second or third counting at the same sitting, upon the patients becoming accustomed to the proceeding, and very likely not to be present at all at the next visit.

In this patient the last note, May 7, 1897, was: "Feeling much better; pulse, 94; headaches greatly improved. Finds great help from ten-drop doses of strophanthus tincture, especially against nocturnal palpitation."

I may mention that I have found the action of this drug very variable with these patients, some finding it beneficial, and others not, especially if it disagreed with the stomach.

It will readily be inferred from the prolonged history of most of the foregoing cases that their treatment may tax to the utmost the patience of both patient and physician. I do not wonder, therefore, that some cases which I have seen in consultation with other physicians have illustrated the pathology of the affection more than its therapeutics.

Thus Mr. J. N. S——, sent to me by Dr. Charles S. Kerley, of this city, November 12, 1894, a fairly healthy-looking young man, aged twenty-four, came with a story of constant diarrhœa for six months, coming on when he rises in the morning and very watery in character, and which lasts till 10 A.M. His chief complaint, however, is of sudden attacks of great prostration, which may occur anywhere in the street, when he feels as if he were going to drop and lose consciousness. This state may last two or three hours. I found his pulse 110. Dr. Kerley stated that he had suffered from these attacks of prostration for three years, following, according to the patient, an attack of the grippe, since which he had never felt well, and that from the beginning he had rapid heart action, though the diarrhœa was, as stated, of but six months' duration. This patient afterward returned to England, and the change seemed to do him the most good.

Another patient, Mr. A. J. C——, aged thirty, literary man and artist, was referred to me by Dr. W. R. Chichester, of this city, February 3, 1897. His mother had lifelong migraine, as he described it, in one eye. He suffers from peculiar headaches, which are preceded or accompanied by a sense of great distress in the bowels, described variously as pain, nausea, and great general nervousness. They often set in as suddenly as a fit. No ocular symptoms. No albumin or sugar in the urine. The pulse is very rapid and irregular, but as I saw him only once I cannot state how persistent the tachycardia is. Dr. Chichester, under date of May 26, 1897, writes: "For a time Mr. C—— seemed to improve under the administration of the antiseptics you prescribed, with the weekly dose of blue pill. Later on he began to lose flesh and strength, and was drifting into a state of mental depression. These phenomena would appear to come on when he could not get his matzoon and partook of red meats (beef). About a month ago his condition was most deplorable, and at that time I stopped his medicine and fell back on the old pil. asafœtida, as his nervous condition at times became one of frenzy. The increased heart beat and the intestinal pain seemed to be coincident. His diet during the last month comprised everything except red meats, although he has confined himself to matzoon in the main."

As to the pathology of this affection, it appears to me that some insight into the problem is gained by a study of the peculiar pains and their accompaniments which have been described in the histories detailed. As a class they appear characteristically to differ from the other varieties of pain which we usually meet. In the first place, they certainly are not inflammatory, for they present no signs of local exudation or infiltration or swelling, and they are more shifting in character than true inflammatory pains. Though apparently developing often in the fascia of muscles and their tendons, yet they are rarely affected, as all inflammations of fibrous tissues are, by alterations in the weight of the atmosphere, such as presage the advent of a storm. Also, though sometimes resembling peripheral neuritis, yet they produce no changes in the normal re-

flexes, as, for example, in the lower extremities, no matter how long they have been complained of there. They are not accompanied either by any more muscular wasting than comports with the general emaciation present. The same may be said of the accompanying numbness or paræsthesia, as in Dr. Kice's case, in which the patellar reflexes were just normal, neither increased nor diminished. Just as certainly they are not degenerative pains, for I have never found localized anæsthesiæ, whether of pain, touch, or temperature. They differ also from pure neuralgias in being accompanied by distinct local arterial hyperæmia, and by producing a peculiar stiffness of the muscles, with pain on movement. But this stiffness, totally unlike the tetanic reflex contraction of the periarticular muscles of an inflamed joint, was also unlike the inflammatory stiffness of muscular rheumatism, for example, because it changes rapidly, sometimes by simply altering the position of the limb, as if the arterioles of the part had lost their tone and the blood in them was affected by gravity, giving rise, moreover, to that subjective sensation of inward pulsation all over the body, which these patients often complain of when standing. Moreover the tremor, so frequent in these patients, never had the characters of a clonus or of any analogous reflex phenomenon. A closer examination into these symptoms seems to connect them, instead, with a state of general arteriole dilatation; the condition of the ear in Case I. being precisely similar to that of the ear of a rabbit in whom the sympathetic in the neck on that side has been severed. It might be surmised, therefore, that paralytic arterial distention, particularly in the vasa nervorum, is the proximate cause of many of the pains, especially those felt in the abundant plexus of the tips of the fingers and in the toes. On the same hypothesis I would account for the pains in the eyes and ears and the accompanying interference with their special functions.

I may add that a patient of this kind under my treatment once lost the sense of smell for several months, following upon a headache which was relieved by an attack of epistaxis. The relief which blistering of the mastoid afforded to the pain and deafness in the left ear in Case I., with improvement of the vertigo, does not invalidate the inference that the aural trouble was not inflammatory, for the blister may have relieved the arterial hyperæmia of the part simply by the well-known effect of the vasomotor stimulation which is produced by counter-irritation.

Lastly, it may well be asked: What morbid process of an organic kind, whether inflammatory or degenerative, can involve such symmetrical areas as hands and feet, knees and hips, both ears and both eyes, besides the motor branches of the fifth and the hypoglossal nerve, and likewise cause aphasia—all of which phenomena were present in Case I.? In fact, we may say that not a sign is wanting in these patients of a state of the vascular system which is summed up in the term vasomotor paralysis, and that the distribution of the symptoms is such that it cannot correspond to any systemic affection of vasomotor tracts or centres, but must be brought about by an agency operative through the circulation itself—all of which is equivalent to saying that that agency must be toxic in its nature. On this theory we might infer that the tachycardia also is not a local affection, but due largely to the general loss of arterial tone, though this does not exclude a direct effect as well of the toxæmia upon the heart itself.

The next question is: In what direction are we to look for the origin of the toxæmia? The clinical evidence, it appears to me, points strongly to the alimentary canal as the primary seat of the mischief, owing, in the first place, to the fact that in the history of these patients distinct digestive disturbances precede, often for months or even years, both the tachycardia and the nervous derangements. If the gastro-intestinal symptoms dated only from the time that the other derangements were first noted, still more if they developed subsequently to the tachycardia, this presumption would not be so strong. Instead of that, I have not failed, on careful inquiry into the previous history of every one of my patients, to find that they had been long subject to digestive disorders, very often of quite a characteristic kind. Thus both the gastric and the intestinal derangements in these patients rarely have presented the signs of catarrhal inflammation. The stomach troubles, instead, are more like those which migrainous patients complain of, while the intestinal disorders comprise habitual constipation or simple watery diarrhœa, accompanied by a sense of uneasiness in the bowels and of depression rather than of pain.

In the second place, when improvement in the action of the heart and in the nervous symptoms takes place, the improvement invariably has been preceded by improvement or cessation of the digestive disorders. About this clinical fact there can be no mistake, and hence it is difficult to resist the conclusion that the relation of the gastro-intestinal derangements to the others must be causative, when we find that the latter neither begin nor end without the former have first begun or ended.

We must await the progress of chemistry to demonstrate what the supposed poison or poisons are which, generated in the alimentary canal in this affection, are then by absorption productive of the specific symptoms. Here again clinical experience seems to indicate that it is in the digestion of certain highly nitrogenous articles of food that the occasion of the trouble arises. Repeatedly I have found all the symptoms of the patients as distinctly aggravated by indulgence in red meats as indulgence in starchy food aggravates the symptoms of diabetics. In one patient even the flesh of fowls caused derangement, though, with most, poultry in moderation is allowable. A milk diet, however, when made digestible by artificial fermentation or by peptonizing it, is by all odds the most conducive to restoration, and in many cases so distinctively curative in its effects that it affords of itself a strong presumption of the digestive origin of the complaint.

As to diagnosis, the presence of the specific tachycardia is the leading element. It would be difficult to cite an affection whose symptoms might be more obscure or baffling than this one, whether in the rebellious dyspepsia or bowel disorder, or in the curious and protean character of the nervous symptoms, until the clew is furnished by the concomitant rapid action of the heart. Failing to note the presence or to appreciate the significance of this functional cardiac derangement, we may vainly try for months to treat the alimentary canal or the nerves with our measures with as little success as if we gave tonics to a diabetic for his weakness or stimulants for his nervousness. On the other hand, digestive disorders, however well treated, always require patience and perseverance, and in this complaint this principle is particularly applicable. If the patient will agree to follow a systematic course only for a month or so, no cure should be promised.

Finally, we may ask: Is there any disease which is at all comparable in its symptoms and nature to the affection which we have been illustrating by these clinical examples? The answer is that undoubtedly Graves' disease does so in every respect, except in the addition of two symptoms, neither of which was present in the cases which I have detailed, but which two symptoms, on account of their obtrusiveness when present, have given it its most common name, exophthalmic goitre—most unfortunately, as I think. In Graves' disease we have digestive disturbance, cul-

minating in severe cases in marked emaciation without fever, and in a large number with a tendency to persistent diarrhœa. In a large proportion these digestive disorders are specifically associated with a variety of sensory and motor symptoms in different parts of the body, such as neuralgic pains, disturbance of the special senses, local paralyses, muscular tremor, vasomotor derangements, etc. Lastly, there is the same rapid action of the heart. But because the thyroid enlarges and the eyes protrude, that disease has been regarded as a purely thyroid affection, when it might as well be called an eye affection, for sometimes goitre occurs without exophthalmos and exophthalmos without goitre. In many cases also the patients suffer severely with the general symptoms of the complaint for months or even years, before any enlargement of the thyroid or exophthalmos appears, and then when these do appear they vary in degree from time to time up to complete disappearance and then recurrence. The mischief of naming diseases after inconstant symptoms is twofold, in that the disease may not be recognized when actually present because these particular symptoms are not developed, or it may lead to erroneous views of pathology by inconstant symptoms being interpreted as causative, which they never can be if they are inconstant. A real cause can never be absent from its effect.

In this list which I have detailed this evening, not one of these patients had either goitre or exophthalmos. Two of them have this feature connected with them —the gentleman, Case V., who has a sister who once had exophthalmic goitre; and the lady, Case III., who also has a sister five years older than herself, whose history I published in my second communication on Graves' disease in the *New York Medical Journal*, October 10, 1896. In this patient, Case II. of that paper, the first complaint was pain on the anterior aspect of both thighs at night, then distracting throbbing in the left ear, then tremor of the right arm preventing writing in the morning but not in the evening, with other characteristic and, some of them, very distressing symptoms, along with a pulse of 130, but no goitre from 1893 to 1896, when it suddenly developed, curiously enough, just as all her other symptoms were markedly improving. Meanwhile up to this week, as I saw her on June 1st, instead of the goitre increasing her troubles, these have wellnigh disappeared, and the thyroid enlargement comes and goes irregularly without much discomfort so that the patient cares nothing about it. Therefore if she had not, after three years of her trouble, finally shown enlargement of the thyroid, I should now have included her story along with that of her sister's. The fact is that one sister has exophthalmic goitre and the other has not, but both have Graves' disease. On one subject, however, both sisters, who are exceptionally intelligent ladies, express deep regret—namely, they are convinced from their own experience that their mother died of the same disease. She was sixty-four years of age when she died from exhaustion after an illness of four years, during which she was attended by several of the most eminent physicians of this city, none of whom ventured to give a positive diagnosis of her complaint. According to their statement she had first for three years a great deal of gastric trouble with frequent vomiting. She suffered from much palpitation and had sudden attacks apparently of heart failure. One physician said that she would die from heart disease, but that it was not valvular. She had a great deal of vertigo; then severe pains in the toes and then in the fingers; then recurrent phlebitis occurring twice in both legs, but from which she recovered. She had attacks also of transient blindness, and finally a severe pain in the right clavicle with some swelling there, which a distinguished surgeon said was in her condition an inoperable tumor, but which would grow till she succumbed to it. From the description I judge that it may have been supposed to be a subclavian aneurism, but the surgeon had to change his mind afterward, as both the tumor and the pain in the clavicle disappeared. I give this account for what it is worth; but the lady who furnishes it is fearful that the pain which she has had herself in the right clavicle and the attacks of blindness in the right eye, above described in the history of her case, ominously remind her of her mother's experience. I may mention that the statement of the phlebitis naturally interested me, on account of its supervention in Case I. of this paper.

If, however, the pathology of the cases now reported by me is that of toxæmia of gastro-intestinal origin, the same I hold to be true of Graves' disease itself. The enlargement of the thyroid then may be regarded as due to overstimulation of the thyroid cells by the presence of a toxic irritant in the blood. It is not an improbable theory, in fact, that one of the functions of this gland is to neutralize by its secretion poisonous materials constantly absorbed from the alimentary tract, and that it is only their excessive quantity in Graves' disease which causes it to become relatively insufficient to its task. We can only refer here to the experimental researches of Breisacher, Ewald, Rosenblatt, and Benissovitch, who agree in reporting the rapidly poisonous effect of a meat diet on thyroidectomized dogs, while the number and intensity of the symptoms are diminished on a milk diet, indicating that a normal function of this gland is to prevent injury from products of the normal digestion of what is a natural food with these animals. On the other hand, the many curious effects of the blood condition, in producing both motor and paralytic affections in nervous tracts, may also be the cause of the exophthalmos. Exophthalmos, and sometimes enlargement of the thyroid, have been reported by Filehne as the result of the division of the restiform bodies in rabbits, which phenomena therefore would seem to be induced by a paralytic impression on medullary centres, a deduction which is further borne out by the paretic symptoms in Graves' disease of the Stellwag and von Graefe signs.

THE PHYSICIAN, HIS PERSONNEL, AND HOW IT AFFECTS HIS SUCCESS.[1]

BY F. J. HILLIS, M.D.,

NEW YORK.

The Physician.—Of all the pursuits and occupations engaging the attention of civilized man, there is none so trying and so grinding on the nervous system as the practice of medicine. Men engaged in other walks of life, and the people at large, have as a rule regular hours in which to transact business, appointed hours for meals, a time for rest and amusement. The day laborer, the lawyer, the artist has regular hours for repose. These periods are dedicated to sleep, a heritage to be maintained, an institution to be perpetuated. No ringing at their doorbells at unseasonable hours, no jumping out of bed half-awake at a moment's notice, no running out into the darkness half-dressed, no solitary walk through miles of street under angry and unpropitious skies; for the doctor no holiday, no Sunday, but weary years of toil; no church bell to summon him to devotion, no process server to remind him he is a citizen. Occasionally, in the monotony of tumult, he receives a sudden jar when the bailiff comes to eject him for non-payment of rent; however,

[1] Read at the thirteenth annual meeting of the Fifth District Branch of the New York State Medical Association, May 25, 1897.

happily this is of infrequent occurrence. He is exempt from some obligations, only to be a slave to others. His vocation is to be ever waiting and always ready—a bondman *de facto*, while a citizen *de jure*. He would be discomfited and destroyed by these accumulated woes, were he not buoyed up by the consciousness of doing good. Here the poison and the antidote are companions of a journey.

Dwelling in the midst of alarms and a witness of so many tragic scenes, no matter how steeled his heart, the effect is felt and the image reflected; there the negative or shadow finds an abiding-place, and the development will come slowly or may suddenly be precipitated by a favorable condition. Excitements will begin to tell at fifty-five on the floor of the heart, roughening its naturally smooth surface and binding down its longitudinal fibres, rendering the doors or valves leading to the main arteries leaky and inefficient. The circular fibres of the arteries supplying this floor, the vasa vasorum, contract too, narrowing the lumen of the vessels and destroying their function, when atheromatous or calcareous degeneration ensues. Now the condition known as endocarditis exists, and few physicians at sixty-five are free from this pathological sequence.

After sixty there is a sort of chronic inflammation, progressive and increasing, according to the labor or excitement to which the physician is exposed. There is no temperature range of any consequence attached to this contraction and thickening; in fact, the temperature may often be subnormal. This might on general principles be designated as dry rot. Old trees are subject to this disease, too. The old tree rots at the heart, as the saying goes, while the young tree dies at the root. The old man's nervous system is not so impressionable as that of the young. It has not the elasticity to rebound or the potential energy to summon quick reinforcements. The old man's heart is a storm gauge. It receives the blows and they are registered on the endocardium. He may be unconscious of the manner of reckoning, and indeed even of the blows, but excitements after sixty will have a cumulative and finally a disastrous effect, and the saying will go around: "He died of a broken heart; that news he heard yesterday killed him."

Not Interested about Himself.—It is a well-known fact that the physician is careless about himself, sometimes to a degree of fatuity. While interested in his patient's heart murmur and the pallor of his patient's cheek, he thinks not at all of his own. He will examine with great minuteness a blood disc from his patient's artery, to determine its ratio to the standard of health, and investigate the source and quality of a murmur with care; while his own heart is weak, its valves are faulty, with murmurs long and loud, heard everywhere over the areas of exploration. He trusts himself to the mercy of the elements, chance, and perennial hope, while he builds a wall of protection around his patient and formulates a treatment that will withstand a vigorous bombardment from disease.

When He Will be Reminded that there is a Limit to His Endurance.—At sixty-five the surgeon should hand his scalpel to a worthy brother, younger than he. Many reputations have been ruined by not knowing when to quit. He should not imitate the pugilist and wait for a knock-out blow before retiring. After that age he will have a tremor in his hand, and the eye will grow dim in spite of glasses; even though the mind is as clear as running water, and its reasoning perfect, it cannot control that tremor of the hand. Then let him retire gracefully when he feels that the touch of time is upon him, for none should know better than he that nature is inexorable and will not be trifled with. If he further persists from habit or vanity in the vivisection of his fellow-beings, he is very likely to be the subject of some good-natured ridicule in the operating-room by the younger men around, and even by the neat and keen-visaged nurse at his elbow. Each day brings poorer results. There is nothing to be hoped for but retrogression in his methods. There is no time here. He is looking backward. He wants to grasp again the triumphs that younger and brighter days had brought him, to prop him up in this, the hour of his sore distress. Through the dim vista of the past he discerns the phantom flying and sees the lurid flame —forbear, good doctor—

"To tempt the dangerous gloom."

He takes the step heedless of the warning, and disappears from the scene.

The physician at seventy should take in his sign and seek a quiet retreat in the corner of a consultation-room. He is now admirably adapted for giving advice. The stored-up experiences of years have an inestimable value here. If he further persists in active labor and launches again on the stormy deep, his hulk will founder, since it is leaky, shrunken, warped, eaten by the resistless fury of the elements and weighed down by the incrustations of time, a prey to the conditions that are the offspring of age and complements of senility and decay.

His Discipline.—The well-disciplined physician will not worry too much if things do not go to his liking in the sick-room, or take it to heart if he loses a patient suddenly and unexpectedly. If he does, the sooner for his peace of mind and health he enters another pursuit the better for him. The constant fretting will wear his mind and consume his body, and while yet young he shall be gathered to his fathers and join the majority beyond.

The wise physician will forget the pains and tribulations of the sick-room after the door is closed behind him. In that room let him think and use his skill and judgment well, give his instructions in an easy yet emphatic manner, not recapitulate except on special occasions. Often for this cause good doctors have been accounted bores, and patients have disappeared from their lists without their knowing why.

The physician must not be too sympathetic in the sick-room, or carried away by the tears and sad faces he sees around him. He must be like the sturdy oak in the forest—bend to the blast, while not being affected by it. He must always keep himself well in hand, never lose his temper or presence of mind; if he is master of himself, he will seldom have difficulty in being master of the sick-room. He must be ever conscious of the fact that the family did not send for him for the purpose of sympathizing with them; their friends and spiritual adviser are abundantly able to do this, and more too, for it will be found that the former, and unfortunately often the latter, indulge in criticisms not overfavorable to the physician. His method of treatment will be measured by his degree of success, and, if failure perches on his banner, a cute and knowing friend in the background comes to the front to whisper into the ear of the distressed relative: "I told you so; I said all along he did not understand the case."

The nature and character of the disease play no part with these people. It is always a question of the degree of ability of the physician.

His Trials.—It cannot be too forcibly emphasized or too often repeated that humiliation has come to the physician because of his kindness of heart and ever-ready sympathy. He is doing excellent professional work to save his patient, and has hope he can pull him over the crisis. He neglects other patients whose money is sure, for this one whose money is not sure, but whose promises are inflated and extravagant: he has taken a special interest in this case, is in the sick-

room early and late, watches all the symptoms, and combats every unfavorable turn.

At the crisis, and while he is preparing to see this patient, who is the first on his morning list, his door-bell rings violently, a small boy hands in a note directed "To the Doctor."

On the previous evening a patient promised to send the doctor a fee that was long overdue. His heart was full of glee and words of thankfulness were on his lips as he was about to break the seal. He felt he was rather hasty on the previous evening, when he sent a tart note requesting the money, and when the word was returned that it would come in the morning he felt that human nature was not quite so bad as he thought—and he is now about to be in possession of that fee! The doctor tears the envelope with confidence and hope. He opens the letter. There is no money in it! He is disappointed. He is further disappointed, surprised, and disgusted when he reads:

"Dr. Kindheart: A friend of ours, a lady, Mrs. Lightbody, from across town, called this morning to see your patient. She is not satisfied with your treatment and thinks that Marguerite is growing weaker; consequently she summoned her own physician, who is now in the house. Please do not call again until we send for you.

"Very respectfully,
"Mrs. Lighthead."

A physician was called out of bed in the night to see a child suffering from croupous laryngitis. The physician was not young, nor was his health vigorous. The night was bitterly cold, and the sick-room to which he was called was anything but comfortable and congenial. He went home for his case of instruments, returned to the sick-room, performed a delicate operation, and remained through the night, lest an emergency should arise demanding his immediate presence there. His treatment gave instant relief and promise of final success. Tired and worn out by the labors of the night, the physician turned his thoughts on home. After giving directions as to the course to be pursued in his absence and until his return in the morning, he left the house, enveloped in an atmosphere of prayers and praise by the good people of the family that his days might be long in the land and prosperity always lend him her smile; they would never forget his skill and kindness as long as they lived, and would without fail pay him for his night's services when he returned in the morning—just then they were so overcome by their feelings of gratitude and emotion that money was of small consideration and of minor importance. He came according to promise in the morning; as he entered the apartments he met a member of the family, and in reply to the query, "How is your brother?" he was told: "Doing well now, but two hours after you left this morning he had a change for the worse, and we thought it wise to summon another physician, who has left positive orders that no person be allowed to see the patient but my mother, who is in attendance until his return. We would have sent you word not to call, but were too exhausted after the fatigue of the night to pay any attention to a thing of such small importance."

Recognizing the Situation.—An experience or two of this sort every week will bring the physician to his senses, and after a while he will get it through his cranium that people do not send for him to prescribe for them because they like him, or because they entertain a regard for him above or beyond other members of his profession. They call him in because they believe he can do the best possible for the sick one.

Ingratitude.—When they are convinced or imagine some one else can do better, they throw him down like a dishrag. They have, as it can be seen, no regard for his feelings or gratitude for what he has accomplished. They will trample him in the dust in their haste to bring some one else, not so competent as he, to carry on the work he so auspiciously began. The homely saying, "Don't swap horses crossing a stream," has no weight here, for these people do a great deal of swapping—the further down in the social scale the more so—and during this swapping there is swamping, for the new horse often throws his rider, not being so surefooted as the old one. This will account for the awful mortality in crowded tenement districts in times of sickness or epidemic. They play with doctors as a child plays with toys, and change their doctors oftener than they do their underclothes, with the result that "too many cooks spoil the broth." It is hardly necessary to say the cooks don't get paid. It is the common lot of all physicians to have such experiences some time or other during their professional career, and those with quick perceptions and fine nervous organizations suffer the most from the base and cowardly ingratitude and often atrocious conduct of these miscreants, calling themselves human beings and claiming a common humanity with us.

"Who knows thee well, must quit thee with disgust,
Degraded mass of animated dust."

It takes about ten years' observation to know and understand the dear public, for whom and among whom we labor, and about twenty years to have a fair knowledge of human nature, as it presents itself inside and outside the sick-room.

His Charity.—There is no profession so charitable or so ready to give its services away. The physician, if properly approached, will never say "No" anywhere and everywhere that his services are needed. In an emergency he is there, binding up the wounds of the injured or ministering to the wants of the sick; in that hour of peril he is as brave as a lion, prodigal of his labor and skill, and as kind as a sister of charity. This professional gentleman is ever alive to the appeal of the needy, and always ready to relieve a fellow-being's pain. If he is apparently deaf to entreaty and slow to respond to a so-called emergency call, he has just cause for his action, and will in every case be able to show that the seeker after his services is worthless and undeserving of consideration, and, after all, not really in need of his services at all. He has broken faith with this physician many times before, and is prepared to do it again when the occasion presents itself. If the people kept faith with the physician as the physician does with them, there would be little need of that institution known as the dispensary, and that other colossal concern, the hospital, would shrink to its normal proportions. Then would the board of governors cease to play the rôle of mandarins, the superintendent that of Turkish pacha: then would the physicians and surgeons attached to those establishments be emancipated from serfdom, and the hospital itself cease to be an engine of oppression.

His Habits.—There is a saying among the people that "all good doctors drink;" that if a patient is fortunate enough to catch the doctor sober, his case will be speedily diagnosed and recovery rapid.

It is not an unusual proceeding for several sick people to be on the lookout for the doctor, as at this period the mind is in a formative state, and, like the elements, in a nascent condition, eager to form new combinations and liberate latent force. At this transition stage his touch has a healing influence, and the words that fall from his lips are charged with potency and promise.

Physicians not overburdened with practice, having in mind this popular delusion, often rapidly spring into favor by simulating intoxication. Before he was commonplace and little noticed. Now attention has

been directed to him; he has exploited himself at opportune moments; the people in the marketplace and on the thoroughfare recognize that the mental processes and nervous energies of this physician are rapid, interchanging, and extremely exhausting, and that after all he is only paying the debt he owes to genius. He must have a stimulant to restore his nervous equilibrium, and what is so rapid in effect and so easily assimilated as alcohol? He cries for it and appropriates it with celerity and gusto. In time the mist will have cleared away and the popular illusion will have vanished, but often not before the physician retires with a competency.

His Triumphs.—The triumph of the physician is complete when after his patient is dead the family speak of him with respect and esteem. Death drew them closer together, and now binds them, as it were, with hooks of steel. Their loved one was too good to linger long here below. He was called away to fill a measure of usefulness beyond the vision of our grossness, but only to realize the fruition of our hope. Happy is the physician who can multiply these experiences, for his yoke is made easy and his burden light.

The Status of the Giants of the Profession. — It will be observed that the giants of the profession, the college professors and great practitioners of the day, are not, as a rule, the medical advisers of the four hundred. Their profession with them is the serious business of life. There are too much intensity and force of character in them to allow them to be obsequious and over-obliging. In their effort after knowledge they forget to cultivate the art of pleasing and the subtle ways that hypnotize and control—no polite aphorisms in the drawing-room, that leave behind fragrant memories and make the ladies' breasts thrill with emotion as they anticipate new and repeated *séances!* These men have no tricks, no sly ways, no cards up their sleeves, no surprises to spring, no pleasantries to relate. Their appearance will bear evidence of this; features rugged as the granite hills, strong to resist the force that is in them, the *vis a tergo* of the mind—faces always impressive, often implacable, terrible when confronting stupid opposition or condemning imposture and hypocrisy. These homely faces reflect thought and pent-up force. Men with faces like these make history, revolutionize society, and rearrange the maps of states and countries.

The rubicund and unctuous belongings of the prestidigitator and Don Cæsar de Bazan of the fashionable sick-room are all absent here. Plain and direct, life has an object and time a value to him. He is businesslike and brief in the sick-room. He came there for a purpose; that purpose accomplished he retires without ostentation; in fact, these great men carry the odor of the counting-room and the directness of the bailiff into the sick-room so conspicuously that their presence is seldom welcome there. For this reason they are seen in the portals of swelldom only when the angel of death is hovering over the house and Gil Blas is fearful that he will not be able to bear the burden of disaster alone.

His Personnel.—The personal qualities of the physician are always to be reckoned with on the balance-sheet of success or failure: his magnetism, his ability to attract or repel—in short, all the details, items, and attributes that make up his personnel. This will not consist of a strained and awkward effort to please, or of any effort on his part. It will be a quality or condition peculiar to himself, and of which he may be wholly unconscious; however, it contains the elements of success, the force to impel him along.

The versatile and dashing physician has neither the time nor the disposition to pour over cumbersome tomes and consult authorities on medical topics. He has an assistant to do that for him; to tell the truth, he has no great liking for these same authorities, for are they not too prosy, too dreary, and altogether unsatisfactory as to conditions and final conclusions? Who can blame him for wanting none of them? It will be seen later he is a law unto himself, and a higher law. To his mind they are well-meaning but honest fools, toiling and bearing the burden in the heat of the day, while he is regaling himself at the opera or admiring the scenes from art or nature from his dogcart in the park or driveway.

> "While the author is wrestling with the problem of disease,
> His forte, to wheedle, manipulate, and please.

He has the genius or inspiration to distinguish between conditions, and determine beforehand and anticipate the quality of fatality. In the drawing-room his smile is expansive and illuminated; his features are mobile, impressionable, and pleasing. After casting an auspicious horoscope for the young lady at the piano, and assuring her mother that youth yet lingers with herself, that it is not difficult to discern whence her daughter's ready wit and beauty came, he talks of the opera, what constitutes a dancing set, which is the best French play, criticises the latest novel, and anticipates the fashions for the season; he also says a word about golf, and incidentally mentions Newport and Lake George. These varied topics form an uninterrupted chain; the subjects blend into each other like the coloring in a landscape, and please the eye while amusing the fancy.

In the sick-chamber upstairs he drops his light and airy fairy ways. His face is a picture now (a veritable Jekyll-Hyde transformation)—features contracted, cold, and thoughtful; language measured and slow; manner severe and aggressive. He is diagnosing the case. His ponderous mind is like a sea swept by the fury of the gale. The intensity and concentration of thought are terrible. His mental perceptions have grasped and solved the problem; the diagnosis is complete. He apprehends disaster, though there is no danger signal flying, no high temperature, no rapid or irregular pulse, no respiratory sigh flashing like sheet lightning with ominous torpedo-like explosion; and, with gravity mingled with emotion, he informs the friends of the patient that pneumonia is about to develop, but he thinks it can be aborted or diverted, or, as the electricians say of the current, "grounded;" so he furnishes the conductor, a lightning-rod, in the shape of a placebo, gives some details to his nurse, says he will send his assistant to the house immediately and that he will call himself in the evening, jumps into his brougham, and is driven to the matinee. On his return from the matince he visits a flower show at the grounds of the Horticultural Society. At home he instructs his assistant in some minor details and dispatches him again to the sick-room. This assistant is often a clever fellow, and understands his business well. He is ever mindful that his first and only duty is to please his master. To this end he is diplomatic and crafty; nothing to affect his reputation, nothing to detract from, nothing to compromise his employer ever falls from his lips. He is as silent as a sphinx, thoughtful as a philosopher, and companionable as an owl.

How It Affects His Success. — The master is drowned on a yachting-cruise, and the mantle of success falls on this scholarly hack. He puts it on, but it is a hideous misfit. He would like to wear it, but it makes him look so ridiculous. It is so altogether out of proportion that he is not certain where to begin in order to remedy the inequalities and restore its symmetry. At a conclave of his friends it is decided that a change in construction would ruin the mantle. There is now nothing left for the hack but to wear it

himself or give it away—but it will fit none of his friends; a spirit of loyalty to his departed leader, however, prevents him from pursuing the latter course, and he dons it himself. He suddenly recovers his voice and grows quite loquacious. He is called professionally to a house, not unknown to him, but one that his lamented predecessor knew so well. In the drawing-room he talks of the physical aspects of the moon, the solar spectrum, and the belts of Jupiter, drops a few words in commendation of Milton's "Paradise Lost" and Gibbon's "Decline and Fall of the Roman Empire," and concludes with a reference to Munkacsy's "Christ before Pilate." Upstairs in the sick-room he is simplicity itself, and readily takes the family into his confidence. He declares that at present there is no danger, that it will be four or five days before symptoms are sufficiently developed to permit a positive diagnosis. In treatment he speaks about digestive ferments and assimilants; he also speaks like one having authority on leucocytosis and bacteriology. He departs with quiet dignity. His last words are: "If a change should come for the worse, be patient and hopeful, and immediately notify me." He hails a street car, and alights at the rooms of the Historical Society.

The drawing-room below has a frosty atmosphere from his presence there. His dissertations and admonitions upstairs fell on unsympathetic ears. He is now standing alone, no shadow of greatness to hide him from the fierce criticism that beats with relentless fury on his head. The shafts of slander that are hurled at him from feminine tongues strike in vital parts. His enemies are numerous and still increasing. His patients are one by one, like autumn leaves, falling from his daybook; they drift with the tide of success, while he is left high and dry on the shore of disappointment and despair, to ruminate on the fact that ability and skill in his profession are only a small part of the armamentarium of a successful physician, and that, though he may masquerade in his master's clothes for a while, he will in time be discovered, and in the end his defeat and humiliation will be more complete.

Some physicians fail who are thoroughly equipped. They possess all the elements of success, but, unable to control or to utilize the force that is in them, they are overwhelmed and destroyed.

> "Viewed his own portion on the field,
> And winged the shaft that quivered in his heart."

Others fail because they had ideas and expectations of easily and suddenly acquired wealth. The medical schools are to a great extent responsible for this sort of failure. They hold out great expectations to the aspiring medico, and often fill their catalogues with glittering generalities, which speedily evaporate into thin air. The student is charged and primed in the lecture and class rooms with this elusive philosophy, and longs to pluck the golden fruit that he sees dangling in the orchard of popular favor. But alas! a rapidly flowing torrent separates him from the realization of this dream. He cannot hear the roaring waters as they are precipitated over the cataract, or see the gulch below; but the rapid pace he is running will bring him face to face with it soon, and his impetus will fling him into the whirling eddy, where too often these troubled waters hide him and his blasted hopes. He perished because his alma mater did not sufficiently instruct him, and impress the fact on his mind that the road leading to success is hard and rocky, circuitous and full of inequalities, abounding in pitfalls and cañons; and further, that eternal vigilance is not only the price of liberty, but of success as well. In his haste to acquire wealth and fame he failed to acquaint himself with the difficulties to be encountered in pursuit of these objects.

Success in the practice of physic, then, depends not on the knowledge one possesses on that subject, but on the nice adjustment of the various mechanisms that enter into a perfect whole. The mental faculties must be rounded out by a keen appreciation of human nature, and of the fact that while this human nature is an element to be considered in any social equation, it is especially conspicuous and prominent in the practice of medicine.

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SOME IMPORTANT POINTS FOR CONSIDERATION IN THE TREATMENT OF ACUTE LOBAR PNEUMONIA.[1]

BY LOUIS FAUGÈRES BISHOP, A.M., M.D.,

[illegible]

[illegible] SECTION [illegible] MEDICINE, NEW YORK ACADEMY OF MEDICINE; MEMBER OF THE [illegible] OF ALUMNI OF ST. LUKE'S HOSPITAL [illegible], ETC.

THE proceedings of our medical societies are sometimes criticised by superficial observers, and by those who do not take an earnest part in the work, for the frequent recurrence of old topics and the absence of novelty and originality. Such persons mistake the office of the scientific medical society and the motives of those workers who can always be counted upon to express freely, honestly, and with humility what they know or to acknowledge their ignorance of any subject that may be brought forward. The object of the work is more to crystallize truth than to disseminate what is new. Such novel information has a spreading power in itself that easily carries it to the whole profession. In the medical society men gather to compare, correct, and fill out their experience. Here the immature views of young men germinate and develop, while even the oldest has his established beliefs pruned into better form by free discussion.

The introduction of the subject of pneumonia without the excuse of any original observations, without any new statistics, or any favorite plan of management, requires only the excuse that we are still seeking the best plan of treatment. Every physician has some mode of procedure that he has acquired from his preceptor or has carried from his hospital. That any one shall approach the treatment of a case of acute lobar pneumonia with confidence of a successful outcome is impossible, so long as the present death rate remains. A mortality approaching twenty-five per cent., which has not been materially diminished in modern times, is certainly sufficient excuse for free and frequent discussion.

There are two ways in which the treatment of disease may be improved: By a gradual improvement in the details of treatment, with a better appreciation of the disease and an improved technique; or some specific treatment may be discovered suddenly to supplant all previous plans and immediately reduce mortality. The improvement in the treatment of typhoid fever is an illustration of the first; diphtheria is an instance of the second. A number of specific treatments of pneumonia are claimed each year, but improvement is still confined to the elaboration of a better technique.

I will touch upon four points—feeding, the prevention of delirium, hydrotherapy, and stimulation.

As to diet. In acute lobar pneumonia it has always seemed to me that the tendency was rather to overfeed. It is questionable whether, in the acute stages of the disease, with the undoubted accompanying congestion of the abdominal organs, harm is not often done by stuffing the stomach with milk to the production of large quantities of gas and upward pressure on

[1] Read before the New Jersey State Medical Society at Atlantic City, June 22, 1897.

the diaphragm. Now and again a feeble voice is raised against overfeeding in pneumonia. The lesson of feeding in other febrile diseases has been so well learned that the shortness of the course of pneumonia is not enough considered. There are undoubted benefits in restricted diet in a disease so acute. Overfeeding means a consumption of physiological force in the digestion and assimilation of food. It means the diversion of so much energy from the reparatory forces of the body to the digestive forces. It means throwing into the circulation a quantity of crude food products that must be taken care of. It means the presence in the intestinal canal of the waste matter of the food that must be gotten rid of. The patient dying in acute pneumonia does not die from a lack of reserve force, such as might be produced by a system of stuffed feeding, but rather from the failure of the development when needed of the latent force already existing. If by a system of overfeeding, such as would produce this more remote force, part of our stock of immediately available energy is used up, more injury than good is done. It is just as if the captain of a ship with an important and pressing commission should stop to replenish the coal supply on the wharf when he should be on his journey, burning the supply in his well-filled bunkers. Diet should be bland and moderate in quantity. It would seem that only a misconception of the conditions of pneumonia leads to stuffing.

There is no disease in which it is more important to discount future events. An acute delirium in an alcoholic patient, when fully developed, frequently means a fatal termination. The feeble power of drugs to control this delirium, short of paralyzing the patient with dangerous doses, is only too well known. If at the outset of pneumonia in an alcoholic case we foresee that the day of delirium is bound to come, we can by the free use of safe sedatives avoid or at least limit the delirium of the later days.

The bromides are not sufficiently appreciated for their good qualities in acute disease. Their harmlessness has been so impressed upon me by the experience of treating a large number of epileptics, who took continually enormous quantities, that it has seemed desirable to consider their usefulness in other conditions. The reason that the bromides have so little reputation in emergencies compared with morphine, chloral, hyoscine, and the hypnotics, is that they have been given in too small amounts. Other drugs get more fair treatment. We push them until we accomplish the result aimed at, or until the appearance of some danger symptom. With bromide, single doses of from five to thirty grains are too often given, and then resort is had to some other expedient. A solution of bromide well diluted is not irritating to the stomach. It resembles very closely in its chemical and physical properties the saline salt solutions that we do not hesitate to put directly into the veins. It is not poisonous in any dose that any one would possibly apply. Its most glaring defects are the size of the dose and the slowness of the results. The fear of bromism that is constantly before the mind rests upon a foundation chiefly of tradition. It occurs in patients who have been taking large quantities for a long time, and is the result not simply of the drug itself, but of mixed causes, such as gastric irritation and deficient elimination.

If the alcoholic pneumonia patient is brought from the beginning of the disease under the influence of bromide in efficient quantities, the use of the more powerful and dangerous sedatives at a later period may be avoided. After delirium is once thoroughly established in pneumonia, bromide is a drug too mild to be efficacious. It should be begun in the very beginning of the disease in alcoholics and given freely, so that the patient shall get from one-half ounce to one ounce in the twenty-four hours. Lives seem to have been saved in alcoholic cases by the free use of bromides from the beginning.

The third point in the treatment of pneumonia that can well be discussed is the value of hydrotherapy. In going over the recent literature of pneumonia as found in the later text-books and systems of medicine, a restlessness and reaching out for new methods is perceived that is not found in the older ones. While we do not find among the conservative men who are usually selected as the authors of these books one who definitely recommends the exclusive use of hydrotherapy, still nearly all point to it as a possible or even probable improvement, and quote some other man in support.

The great problem that confronts us in this disease is the maintenance of the circulation in spite of the obstruction of the consolidated lung. To get the best results of management, we must regard the circulation as a whole, not concentrating our attention entirely upon the heart or the pulmonary circulation or the systemic circulation, but always remembering that what benefits one part of the circuit cannot but affect favorably the other. The stimulation of the heart and the use of vasodilators to relieve its burden are important, but hydrotherapy is not frequently enough employed in combating prostration and blood stasis. The difficulties and prejudices to be overcome before it can be generally adopted in pneumonia are so great that it is with some diffidence that one undertakes to break ground. Hydrotherapy has been so much the property of men who have prostituted medical science to the ends of mere personal profit that much of value has been lost to more conservative practitioners. No one who has once witnessed the splendid results of systematic cold bathing in typhoid fever would be willing to cut off from this resource in a severe case. In the same way in pneumonia the effect of hydrotherapy properly adapted to the condition of the patient would reduce mortality as much as in the case of typhoid fever. It can never be emphasized enough that the value of hydrotherapy extends far beyond the limits of the mere reduction of temperature. The effect is a general tonic to the nervous system, rehabilitating the heat-controlling forces of the body and restoring the tone of the circulation. To accomplish these results, the temperature and duration of the bath must be properly adapted to the case and the conditions present, but there is one element in the application of bathing that is of so much importance that one is almost tempted to speak of the treatment as tub rubbing instead of tub bathing. While in the bath the patient must be properly rubbed in every part of his body by a sufficient number of properly trained attendants. Without the rubbing properly carried out, the tub bathing in an acute disease is indeed the fearfully dangerous procedure that it is often supposed to be by those who have not given the subject mature consideration.

The Brand method of treating typhoid fever gives a standard—the bath of 65° F., the rubbing by strong attendants during the whole time of immersion, the immediate removal to a dry bed, the precautions that a patient should never be bathed when the feet are cold, and that cold feet after a bath should be treated by application of warmth.

Every man, before undertaking the treatment of disease by the application of cold water, would do well to follow a few cases of typhoid treated by this method. Then he would be in a position intelligently to depart from the set system, according to the demands of each case. Thus the bath may be advantageously modified by only half covering the patient, and trusting to the attendants to apply water to the part of the body not

covered. A very suggestive paper by Dr. F. Gundrum, of California, in the *Therapeutic Gazette* of last year, emphasizes the importance of hydrotherapy in pneumonia. He found that by placing a blanket in the bath under the patient the treatment was rendered less objectionable. He states that in his experience packs were found a useful adjunct when for any reason frequent baths were difficult to give, but whenever the temperature went above 103° F. he resorted to the baths. With all other writers, he emphasizes the fact that equal in value with the reduction of temperature is the general nervous stimulus of the cold water and the rubbing. The effect of cold water in health, as a refreshing and stimulating agent, needs to be remembered.

Without detriment to the treatment the baths may be commenced at a temperature of 80° or 90° F., and then while the patient is being thoroughly rubbed the temperature may be reduced by the addition of cold water. This lessens the shock somewhat with sensitive persons.

In the discussion of the hydrotherapy of pneumonia, curiously enough we come once more upon the old question of heat or cold in the treatment of disease, emphasizing once again the only possible answer to this dispute of two thousand years' standing—that there is good in both. The ground for belief is strong in the experience of every one of you that in pneumonia heat applied to the chest by poultices, hot-water coils, or other means, has a beneficial effect upon the morbid processes within the chest. It certainly benefits commencing œdema from whatever cause, and is said to hasten the cycle of the pneumonic processes. That heat is good I firmly believe; on the other hand, there is good authority from some of the best observers in the world that cold applied to the chest in pneumonia has also the power of influencing for good the course of the disease, cutting short the processes and hastening recovery. Thus between heat and cold we cannot decide absolutely, saying one is good and the other bad. It is even possible that there are times when the very hot bath might benefit a desperate case.

In the Maternity Hospital I have frequently studied the effect of such immersion in new-born children, in whom vitality was at a dangerously low ebb.

The effect of a properly adapted bath was beautifully shown in the case of a child of seven. The child had pneumonia with a very high temperature and rapid pulse. There was much venous stasis, and everything seemed to be going wrong. This child was put into a bath at a temperature of 90° F., and thoroughly rubbed for a period of about fifteen minutes. When the child was taken out of the tub and put back to bed the temperature had fallen, the breathing was quiet, the pulse improved, and the whole picture had changed. The bathing without the rubbing would not have accomplished any such result.

In a discussion in the section on general medicine in the New York Academy on the treatment of typhoid fever by cold bathing, the influence of the baths as a respiratory stimulant was dwelt upon by Dr. A. B. Ball. It would seem that in pneumonia this action should be advantageous. Its wonderful tonic effect upon the nervous system, equalizing the circulation and bringing about physical rest, has astonished every one who has had the opportunity of studying fever cases so treated. Increase in the secretion of urine, such as is a constant observation in fever patients who are taking baths, would suggest improved elimination of toxins.

The reports of the treatment of pneumonia in which bathing was used as a tonic and supportive measure, as opposed to merely antipyretic baths, are very meagre. Professor Bozzolo says: "After a considerable number of observations: (1) Such baths are well borne in severe cases; they never produce collapse. (2) They lower temperature rapidly and notably, and keep it down for a considerable length of time; they may be repeated every three hours. (3) The mortality per cent. among patients treated thus with cold bath is among the lowest recorded under any form of treatment." [1]

The fourth and last point in pneumonia is the circulation. Every thoughtful physician has a philosophy of his own that guides him in the choice of means of stimulation. The direct care of the heart is equal in importance to the attention to delirium and the destructive forces of high temperature. Every one who has watched a patient with pneumonia from the onset of the disease to a termination has felt that the heart was the organ upon which the brunt of the battle had fallen. There is no question of equal general importance or greater difficulty than that of heart stimulation. It is a problem to be approached with the utmost humility, because there are many points upon which it must honestly be confessed that definite facts are not known. The mechanism of the heart and circulation are admirably adapted to fulfil their functions. The heart has its wonderful nerve supply, both from the central nervous system and from the ganglia within itself. The blood-vessels are governed by the marvellous vasomotor system, with its millions of constrictors acting as a system of regulators whose perfection surpasses the comprehension of man. The automatic action of the respiratory and cardiac nervous centres also elude our complete understanding. In health the slightest mental or physical exertion is followed by an increased effort on the part of the heart and a corresponding deepening of respiration. When anything happens to cause obstruction to the breathing or circulation, the heart immediately responds with a large increase of labor to overcome the obstruction, and the lungs increase their activity to an even greater degree. Now, nature having provided this wonderful plan of increased activity to meet emergencies, the question of stimulation resolves into an inquiry as to whether we can by artificial stimulants supplement with advantage the natural stimulus that comes from the nervous system. We come face to face with the possibility of injudicious stimulation, or stimulation at the wrong time, which may exhaust the natural resources so that they will not respond at a more critical period. On the other hand, leaving stimulation, pure and simple, out of the question, can we not control the action of the heart and conserve its forces to calm the excessive stimulation of an excited nervous system, and in this way reserve the force required to tide over a critical period? In addition to stimulation and control, it would seem that nutrition of the heart was of great importance. Particular drugs cannot be discussed at much length. The best general plan of management of the heart in pneumonia is to conserve its forces early in the disease by the control of delirium by the use of a proper antipyretic but at the same time tonic system of bathing, and by the use of such drugs as will relax the general circulation and diminish the hyperactivity of the heart. Undoubtedly with all its disadvantages the aconite group of drugs affords very valuable properties.

The importance of the philosophical consideration that it is the right side of the heart instead of the left which is chiefly in danger of exhaustion seems to impress itself with difficulty upon the profession. Dr. Andrew H. Smith has for a long time advocated the study of the pulmonic second sound as a guide to prognosis. Still it is not perfectly clear that we have any means at hand by which we can stimulate one part rather than another, nor, indeed, with all that has been studied and written, is the mechanism of the

[1] Gazetta Medica Italiana, July 2, 1881.

circulation so well understood that we can proceed to a very great degree in the treatment of particular parts of it with confidence. After all is said, when we recall to mind the impression made upon us by a critical case of pneumonia at the critical period, it is of an effort to apply cardiac and pulmonary stimulants with the object of tiding our patient over. Before my mind is a patient surrounded by the paraphernalia of the sick-room and the anxious attendants, but more distinctly there stands out in my imagination a picture of a struggling heart and certain alkaloids, notably strychnine, atropine, digitalin, and cocaine, that must be applied hour by hour to keep this heart from failing in its task. After one has cared for a case like this, it is often difficult afterward to describe just what doses were given, as each was administered according to immediate indications. In Wood and Fitz's new text-book on practice, we find the following recommendation that appeals to our judgment of stimulation in a severe case, the drug to be given hypodermically if not well borne by the mouth: Strychnine, one-twentieth grain, every four hours, and cocaine, one-sixth grain, every four hours, alternating so that one or the other is given every two hours. The strychnine may be slowly increased to one-fourteenth grain and the cocaine to one-half grain. Dr. Wood thinks he has seen life saved by even larger doses. Certainly a well-thought-out and courageously applied plan of stimulation offers the only hope for critical cases.

Time compels the omission of the discussion of the place of alcohol, belladonna, nitroglycerin, and digitalis in pneumonia. Nor can the place of bleeding be touched upon, but these will doubtless be taken up in the discussion.

Faith in the value of hydrotherapy in pneumonia is more the gradual growth of time and thought than a belief founded upon any special line of experiment or the teaching of any single person. The literature, though curiously meagre considering its importance, is entirely favorable to the views expressed above. Many occasions arise in the course of pneumonia when a tub bath of moderate temperature, carried out with skilful rubbing, would benefit the patient more than a great deal of drug stimulation. To carry on such a method requires courage, apparatus, and skill. In advocating it at this time we can only hope to stimulate thought, with the desire that means may be found to adopt this important measure in practical medicine. When reason is convinced, no valuable addition to therapeutics must be discarded on account of apparent difficulty or pre-existing prejudice. It was my privilege to witness the introduction of the cold-bath treatment of typhoid fever into a large hospital, and I have listened to all the objections that will be raised again in the application of hydrotherapeutics to pneumonia, and yet we have all seen this method accepted by every one who has had the opportunity of observing cases under treatment.

Until an antitoxin is discovered, the treatment of pneumonia must be in its final analysis expectant, and, valuable though it may have been to review the various means by which the patient is protected from mortal injury by the disease and supported to resist it, still in the application of each and every one of these measures the judgment of the individual physician at the particular time must have influence greater than the voice of any authority. It is this quality of judgment that is found in its most excellent development in the general practitioner occupying the field a little removed from the atmosphere of theoretical teaching and extreme specialism. To such men it is a privilege and an advantage to bring the results of thought, study, and research, and from them I trust my conclusions may be reflected back with the additional light of well-digested experience.

IN THE TREATMENT OF APPENDICITIS, IS THE FREE USE OF THE KNIFE NECESSARY?[1]

BY G. H. BALLEKAY, M.D.,

PATERSON, N. J.,

FORMERLY SURGEON TO THE WOMAN'S HOSPITAL, NEWARK, N. J.; GYNÆCOLOGIST TO THE GENERAL HOSPITAL AND TO ST. JOSEPH'S HOSPITAL, OBSTETRICIAN TO THE MATERNITY HOSPITAL, PATERSON, N. J.; FELLOW OF THE BRITISH GYNÆCOLOGICAL SOCIETY.

MR. PRESIDENT AND GENTLEMEN: Some years ago I would have entered upon this discussion with a good deal of self-confidence; to-day I approach it with a great deal of self-mistrust, for I cannot help feeling that the more I see of appendicitis the less I know about it. I shall endeavor to confine my remarks to answering the question propounded by your committee, viz.: "In the treatment of appendicitis, is the present free use of the knife necessary?"

The question cannot be answered offhand for the reason that every case of appendicitis is a law unto itself; and while in one class of cases the free and early use of the knife is absolutely necessary, in the other class the use of the knife is unnecessary and therefore unjustifiable. At the outset it is important to bear in mind the different varieties of appendicitis actually met with in practice.

Appendicitis presents itself under five different forms, as follows: 1st. Acute perforative appendicitis with diffuse general peritonitis. 2d. Acute simple, catarrhal, or interstitial appendicitis with circumscribed fibrinous peritonitis. 3d. Acute perforative appendicitis with localized purulent peritonitis. 4th. Relapsing appendicitis. 5th. Recurrent appendicitis.

Of these the first, third, and fourth varieties are the most dangerous to life. Recurrent appendicitis is probably the chronic form of what was originally an attack of acute or subacute appendicitis with circumscribed plastic peritonitis. This at least is the conclusion at which I have arrived from the observation of the cases occurring in my own practice as well as those occurring in the practice of my hospital colleagues whose operations I have witnessed. In most cases of recurrent appendicitis it will be found that the original attack was not very severe. It lacked the profound abdominal shock, pinched countenance, lividity of surface, retracted abdomen, and early and persistent vomiting of acute perforative appendicitis with diffuse general peritonitis; it also lacked the high temperature and frequent but comparatively full pulse of acute perforative appendicitis with circumscribed purulent peritonitis. It was in fact a moderately acute or subacute appendicitis, catarrhal or interstitial, with localized fibrinous peritonitis.

After the subsidence of the acute symptoms the exudation is generally in great measure absorbed, leaving only a small, elongated, indurated mass in the region of the appendix, which can be easily felt for several weeks after the patient is convalescent.

The appendix as a rule remains adherent to whatever organ or structure it was in contact with at the time of the invasion. It is often bent upon itself; its walls are generally thickened and indurated, and its cavity is sometimes dilated, sometimes sacculated, and contains a thick mucus or caseous-like substance. Stercoral concretions are rarely found in the appendix in recurrent appendicitis, whereas I believe that they are almost a *sine qua non* of relapsing appendicitis. To my mind recurrent appendicitis is the analogue of catarrhal or interstitial salpingitis with limited pelvic peritonitis. The pathological changes are the same in both; the symptoms sometimes so closely resemble each other that right-sided salpingitis is sometimes mistaken for appendicitis and *vice versa*. But owing

[1] Read at the annual meeting of the New Jersey State Medical Society, June 23, 1897.

to the reflex intestinal disturbances set up by a diseased and adherent appendix, its removal may be necessary for pathological changes which would hardly justify a resort to salpingotomy. The limits of this discussion will not permit me to enter in detail upon the pathological changes which occur in the various forms of appendicitis. But as a proper understanding of the clinical differences which present themselves to the observation of the intelligent practitioner can be obtained only through a clear idea of the pathological changes taking place in the appendix and adjacent structures, I shall briefly pass in review the morbid processes peculiar to each of the varieties above enumerated.

Our knowledge of the pathology of appendicitis has been derived rather from the observations of practical surgeons in the operating-room than from those of pathologists on the post-mortem table. To American surgeons is due the credit of having evolved the true pathology of the appendix. Their operations, often undertaken within a few hours after the manifestation of symptoms, enabled them to appreciate the structural changes which characterized the early stages of appendicitis, whereas the older writers could describe only the advanced and complicated morbid processes observed after death. American physicians have also contributed largely to our knowledge of this subject; and prominent among these is Reginald Fitz, of Boston. It must not be forgotten, however, that to Mêlier, of France, we owe all that we know of the disease under consideration; for it was he who first brought order out of chaos and taught that the diseases previously described as typhlitis and perityphlitis were in reality appendicitis, as the morbid process always originated in the appendix. Before the publication of Mêlier's observations the appendix vermiformis was credited with being an organ of little or no importance, the lesions of which often passed unnoticed in the autopsy room. Therefore, all honor to the brilliant Frenchman to whom the medical profession and suffering humanity owe a debt of gratitude which can never be paid.

Whatever may be the results of perforative appendicitis, its cause is always the same, viz.: the penetration into, and impaction within, the cavity of the appendix of a foreign body—generally a stercoral concretion. Many foreign bodies have been found in the appendix; but all foreign bodies other than stercoral concretions are found in only a comparatively small number of cases of perforative appendicitis. When a hard foreign body of irregular shape penetrates into the cavity of the appendix it produces a condition of irritability of the gastro-intestinal tract which is accompanied by colicky abdominal pains and sometimes vomiting. This condition is exactly analogous to that which is produced by the impaction of a gall stone in the common bile duct or of a renal calculus in the ureter. And as those conditions are spoken of as biliary and renal colic, so this condition may properly be called appendicular colic. The signs and symptoms which characterize appendicular colic are abdominal pain, sometimes vomiting, tenderness over McBurney's point, and rigidity of the right rectus abdominis muscle. Under the influence of the contractions of the walls of the appendix the foreign body may be forced back into the cæcum and the symptoms may disappear as promptly as those of renal colic after the passage of the obstructing calculus into the bladder. But if the concretion remains tightly wedged between the opposing walls of the appendix, what happens? Well, two things happen: first, we have an obliteration of the orifice of communication between the appendix and cæcum; second, there results a compression of the walls of the appendix and consequently an interference with the circulation in the vessels contained in those walls. The obliteration of the orifice results in the accumulation of the products of the glandular secretion of the mucous lining of the appendix and distention of its cavity, while from the compression of the vessels results a diminution of the vitality of the organ. But the obstruction and compression are not sufficient in themselves to accomplish the process of ulceration and perforation; the intervention of a third factor is necessary to bring about destruction of the anatomical elements of the walls of the appendix. This third factor is found in the presence of large numbers of bacteria, which invade the tissues already weakened and devitalized by the interference with the blood supply, and complete the work of destruction.

When the process of ulceration and perforation is so rapid that nature has no time to throw up protective barriers of lymph around the appendix—between it and the general peritoneal cavity—the disease presents itself in its most deadly aspect. This variety of appendicitis is known as acute perforative appendicitis, and is always followed immediately by diffuse general septic peritonitis. In cases in which the process of ulceration goes on more slowly, an effusion of plastic lymph occurs which binds the appendix to contiguous structures and thus protects the general pertioneal cavity from the sudden extravasation of the contents of the diseased appendix. This effusion of lymph is the result of a circumscribed plastic peritonitis. As the destructive process in the walls of the appendix goes on, a focus of suppuration develops. The collection of pus surrounds the appendix, which occasionally forms a portion of the abscess wall. At times when the abscess is opened, the appendix is found lying loose in its cavity, having been entirely separated from the cæcum in the form of a slough. Cases are occasionally met with in which after the existence of well-marked evidences of appendicitis the symptoms gradually subside, to recur after an indefinite period of time. The second or third attack may result in the formation of an abscess which contains a stercoral concretion, and occasionally the débris of the sphacelated appendix. These are the cases which I would classify under the head of relapsing appendicitis. It would seem probable that in these cases the stercoral concretion—which is the real thorn in the flesh—excites the morbid process, which proceeds to a certain point and then becomes quiescent. Later, without any appreciable cause, the fire becomes rekindled and the disease goes on until gangrene and destruction of the appendix and abscess result. In the early stage of this class of cases there has been an effusion of plastic lymph which protects the general peritoneal cavity so long as the walls of the abscess do not give way and allow its contents to escape into the cavity of the peritoneum. When suppuration occurs, the location of the abscess will depend upon the position of the appendix at the moment of the attack. The normal position of the appendix varies in different individuals. While its upper portion is attached to the posterior and inner border of the caput coli, its free extremity seems to enjoy a considerable degree of liberty, and consequently cannot be expected to be found always in the same place. The result of a large number of autopsies shows that in a very large proportion of cases the appendix is in contact with the posterior surface of the cæcum and the cellular tissue of the iliac fossa. If perforation occurs in a case of this sort, the resulting abscess will be in the subperitoneal cellular tissue of the iliac region, and the collection of pus most easily reached at the outer margin of the cæcum. The appendix, if long, may dip down into the pelvis and may be adherent to the rectum, or, in the female, to the ovary, Fallopian tube, or broad ligament. It is sometimes found adherent to several loops

of small intestine high up in the abdomen. Should perforation and suppuration occur under such circumstances, the practitioner might easily be deceived as to the nature and origin of the resulting abscess. In acute catarrhal or interstitial appendicitis with limited plastic peritonitis the changes in the appendix consist in turgescence and thickening of its walls, and dilatation of its cavity with a viscid mucous or semi-purulent fluid. The contiguous coils of intestine are adherent to it and to each other. When of recent date these adhesions are easily broken down with the finger. This form of appendicitis usually terminates by resolution, the plastic effusion being gradually absorbed. But if the disease in the walls of the appendix is very extensive, subsequent attacks are likely to occur, constituting typical recurrent appendicitis. In acute perforative appendicitis the process of gangrene and ulceration of the appendix may go on so insidiously that no marked symptoms occur until perforation has actually taken place. This is most likely to occur in cases in which a stercoral concretion becomes impacted in the cavity of an appendix previously the seat of interstitial inflammation, resulting in a loss of sensibility of the organ.

Symptoms.—The symptoms of appendicitis vary with the type of the disease. In its most acute form perforative appendicitis presents the following symptoms: sudden acute abdominal pain, beginning perhaps in the right iliac fossa but rapidly spreading over the whole abdomen; the countenance is pinched; the surface cool and sometimes livid; the abdomen is retracted and the right rectus muscle rigid. Vomiting is an early and persistent symptom and is sometimes accompanied by singultus. The character of the vomiting differs from that accompanying the other forms of appendicitis. It is more frequent and persistent, and often resembles the vomiting due to intestinal obstruction. An obstinate constipation is often present. The pulse becomes frequent early in the attack. It may vary from 120 to 130, 140, or 150, and as a rule it is a pulse of low tension. The expression of the face, when not altered by the injudicious administration of opium, is indicative of abdominal shock. The facies, the pulse, and the vomiting are the three symptoms which enable us to recognize early this hyperacute form of perforative appendicitis. Tenderness on pressure over McBurney's point is as a rule much more marked than at any other point of the abdomen. The temperature may not be above normal in the early stage; at times it is subnormal, but when the peritonitis has become general it may rise to 102° or 103° F., although it generally keeps below 102° F. As the disease progresses, the abdomen becomes distended; the vomiting becomes almost incessant; the pulse more and more frequent, and finally imperceptible, and the patient sinks and dies from exhaustion and sepsis.

In perforative appendicitis with encysted purulent peritonitis the pulse may reach 120 or more at an early stage, and the temperature in the evening may exceed 104° F., especially in young subjects. There may be vomiting, but it is not persistent, and as a rule yields readily to intelligent medication and alimentation. Constipation if present yields to gentle laxatives or carefully administered enemata. The absence of persistent vomiting, obstinate constipation, frequent adynamic pulse, and pinched anxious countenance will serve to distinguish this from the hyperacute form of perforative appendicitis in the early stage. Tenderness over the region of the appendix and rigidity of the right rectus muscle are common to this and the other forms of appendicitis. As the disease progresses, a well-marked tumefaction develops in the neighborhood of the appendix. This tumefaction is due to the presence of pus, and may continue to increase until the abscess bursts into the peritoneal cavity or elsewhere, unless the surgeon intervenes.

In catarrhal or interstitial appendicitis with limited plastic peritonitis the pulse is never very frequent and the temperature rarely goes above 102° F. The morning temperature is generally below 100° F. The pulse rarely reaches 110. The expression of the countenance is good. There may be tenderness over the appendix, and there generally is more or less abdominal pain; but the pain is rarely very severe. Rigidity of the right rectus is generally present. After a few days a greater or less tumefaction in the region of the appendix develops, due to the agglutination of coils of small intestine to the appendix by fibrinous exudation.

Treatment.—The first indication in the treatment of appendicitis is rest. The patient should be put in bed and closely watched in order to determine early the true nature of the case. No food, except some form of animal broth, should be given. Anodynes should not be administered, as they tend to mask the symptoms and create doubt in the mind of the practitioner as to the form of disease that he is dealing with. It is of vital importance that the type of the disease should be recognized at the earliest possible moment, for upon a correct appreciation of the nature of the case the success of the treatment depends. If the case prove to be one of acute perforative appendicitis with incipient diffuse general peritonitis, the abdomen should be opened immediately in the median line, the appendix excised, the abdominal cavity thoroughly flushed with hot saline solution, a glass drainage tube inserted, and the wound closed. Drainage is absolutely necessary in these cases, as the peritonitis is always septic. In perforative appendicitis with encysted purulent peritonitis, suppuration rarely occurs before the fifth day, and rupture of the resultant abscess into the peritoneum seldom takes place before the ninth day. The rapidity of the suppuration process bears a direct relation to the severity of the general symptoms—the more severe the general symptoms the earlier the formation of pus. If the temperature reaches 104° F. every evening for several successive days and does not fall below 102° F. in the morning, while the pulse keeps at about 120 and there is some tumefaction in the region of the appendix, suppuration as early as the fifth day is probable, and operation should not be deferred beyond the morning of the seventh day. If the evening temperature does not exceed 103° F., and the morning temperature 101° F., the pulse varying from 104 to 116 and the local swelling not increasing, operation may be safely deferred until the ninth day. Exceptions to this rule will be rare. If from the sixth to the ninth day there is some improvement in the general symptoms but no improvement in the local signs, or, on the contrary, an increase in the local swelling, the surgeon should not be deceived by the apparent improvement; he should proceed to operate without delay.

Acute Catarrhal Appendicitis.—Cases of acute catarrhal or interstitial appendicitis with circumscribed plastic peritonitis do not call for operative interference. Such cases are fatal only through the officiousness of the doctor. They probably constitute forty per cent. of all the cases of appendicitis met with in practice.

Recurrent appendicitis is sometimes associated with a chronic catarrhal inflammation of the lower bowel, which is as often the cause of the patient's discomfort or suffering as is the diseased appendix. This condition calls for intelligent medical treatment. But when the recurrent attacks are plainly traceable to the diseased condition of the appendix, its removal is not only justifiable but imperative. In conclusion I would state that the treatment of appendicitis does not belong exclusively to either the physician or surgeon. The

former is too prone to procrastinate and his procrastination may be paid for by the patient with his life. The latter has too great a tendency to resort immediately to his knife, which is often unnecessary. Let the physician call the surgeon early and place upon him the responsibility of deciding when to operate, but let the surgeon appreciate the fact that he is not called merely as an operator, that it is to his judgment, not to his scalpel, that the physician appeals.

Progress of Medical Science.

Carcinoma of the Breast in a Child.—Dr. Blodgett (*Boston Medical and Surgical Journal*, June 17, 1897) has reported the case of a youth, born of healthy parents free from all suspicion of malignant heredity. The father had been at times grossly intemperate. Up to the age of twelve years the boy presented no appearance of glandular or other disease, but soon after this time a swelling was noticed in the left breast, beneath and attached to the nipple, which was slightly reddened and harder than its fellow. The swelling and induration gradually increased in size during the succeeding months, and the skin became more extensively adherent. Surgical removal of the breast was advised, assented to, and effected. The growth presented on microscopical examination the typical structure of carcinoma, and had invaded all visible glandular tissue of the breast. The wound healed by first intention, and there had been no recurrence or metastasis at the end of five years.

Chronic Diarrhœa Due to Senile Degeneration of the Intestinal Walls.—Duprey (*The Lancet*, May 1, 1897) reports a case of chronic diarrhœa in a woman, fifty-six years old, in which he believed there existed degeneration of the intestinal walls, in consequence of senile changes. During a period of nine months the patient had suffered from four attacks of diarrhœa, each of which was more severe than the preceding one. In the last of these the temperature reached 101.2° F. and the pulse 84. The area of cardiac percussion dulness was unchanged; the heart sounds were feeble, but the rhythm was not disturbed. Vision was impaired and there was well-marked arcus senilis in each eye. The tongue was slightly furred and the patient retched often and occasionally vomited. She also complained of pain in the abdomen, which was tender on pressure. Fluid evacuations were passed from the bowels at intervals of twenty minutes or half an hour. Ptomain poisoning being suspected, brandy and milk with soda water were directed, in conjunction with a mixture containing bismuth subcarbonate and nepenthe. During the next twenty-four hours the diarrhœa was less frequent, but symptoms of cardiac failure made their appearance, and death appeared imminent. Repeated attacks of fainting occurred, the skin became icy cold, the lips livid, and the pulse at the wrist scarcely perceptible. It was now learned that fainting fits had occurred also in the previous attacks. In view of the marked degeneration of the cornea, the dimness of vision, the failure of circulation, and the chronic diarrhœa, the intestinal symptoms were attributed to degeneration resulting from senile changes. The treatment consisted further in the application of artificial warmth and the administration of five drops of tincture of digitalis and twenty drops of spirit of nitrous ether every four hours. Improvement at once set in and progressed to eventual recovery.

Meningitis and Typhoid Fever.—According to Dr. Kuehnan the disproportion between the cerebral symptoms in typhoid fever and the morbid lesions found in the nervous system have long attracted attention, and these pseudomeningeal symptoms are well known to experienced observers. Purulent meningitis has occasionally been seen in enteric fever. It has been put down as a mixed infection due to pyogenic micro-organisms, but it has been shown that the typhoid bacillus has pyogenic properties, and can produce this purulent meningitis. The author relates a severe case of enteric fever in a man, aged thirty-two, accompanied by hemorrhage and complicated by purulent meningitis. A bacteriological examination of the blood during life showed colonies of the typhoid bacillus. The cerebral symptoms did not appear until the thirty-second or thirty-third day of the disease. The patient rapidly became somnolent, the pulse irregular, and the urine and fæces were passed unconsciously. The pupils were equal, but reacted sluggishly. There was slight retraction of the head, but no optic neuritis. Death occurred on the thirty-sixth day in profound coma. The typhoid ulcers were nearly all in process of healing. Numerous typhoid bacilli were still present in Peyer's patches. There were slight microscopic changes in the renal epithelium. After the removal of the dura mater the convolutions were seen to be covered with purulent exudation. The pus was intimately connected with the pia mater. The presence of the typhoid bacillus in the mesenteric glands, spleen, and exudation over the convexity as well as at the base of the brain was proved bacteriologically. Here the purulent meningitis was a metastasis of the typhoid bacillus. The bacillus had penetrated into the blood, as shown by the bacteriological examination made during life, and had settled down by predilection in the membranes of the brain.—*Berliner klinische Wochenschrift.*

Extra-Uterine Pregnancy.—From a study on this subject by Dr. Chaput the following conclusions are announced: (1) the differential diagnosis between hæmatocele and pyosalpinx is usually difficult; (2) non-ruptured extra-uterine pregnancy before the fifth month can only be suspected; (3) in extra-uterine pregnancy complicated by non-encysted hemorrhage surgeons are unanimous as to the proper treatment being immediate laparotomy; (4) in encysted hæmatocele or effusion the choice lies between (*a*) laparotomy and (*b*) vaginal incision. The latter is far from being free from danger, and the author always performed laparotomy if hæmatocele resisted ordinary medical treatment. Even if it is first discovered on making a vaginal hysterectomy or puncture he would perform laparotomy, which makes it possible to take away the ovum and placenta and stop bleeding. In discussing these propositions Dr. Bouilly thought that in any case of extra-uterine pregnancy one had to do with an abdominal tumor which indicated laparotomy. Laparotomy is also indicated when sudden alarming symptoms make one suspect rupture of extra-uterine pregnancy. The symptoms of hæmatocele from rupture of extra-uterine pregnancy usually make the diagnosis easy; suppression of menses, suddenness of onset of symptoms, more or less peritonitis, and development of tumor in Douglas' pouch. Incision through the posterior cul-de-sac is the best treatment. Bouilly had operated in thirteen cases with the best results. Dr. Tuffier thought the diagnosis of rupture by no means easy. Out of four cases seen by him he mistook the first for acute peritonitis from perforation; in the second no diagnosis was made. He agreed with Bouilly that incision through the posterior cul-de-sac was the best treatment of simple or suppurating hæmatocele. Reynier and Terrier, however, would limit vaginal incision to septic cases, performing laparotomy in all recent ones, which allows the operator to see what he is doing, and to remove diseased appendages if necessary.—*La Semaine Médicale.*

MEDICAL RECORD:

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE EFFECT OF CHLOROFORM UPON THE VITAL FUNCTIONS.

THE action of anæsthetics has ever been a favorite field of investigation by physiologists, and of late years many laudable attempts have been made to clear up the doubtful points involved. Notwithstanding these attempts, the question as to whether in cases of death by chloroform the respiration or the heart stops first is still an open one. The two Hyderabad commissions both came to the decision that in every case in which chloroform was pushed respiration stopped before the heart did. *The Lancet* special commission to investigate the matter from a clinical standpoint found, out of five hundred and six fatal cases, that the heart failed first in one hundred and forty-three, respiration first in fifty-nine, both together in forty-six; no note in two hundred and eleven. Therefore the conclusion arrived at bears out the view that in a large majority of cases death is due to syncope, so far as the clinical evidence can decide one way or the other. Dr. Hobart A. Hare (*Gaillard's Medical Journal*, June, 1897) is inclined to adhere to the belief held years ago, that both the respiration and the pulse need watching. He says: "As with other discussions in medicine, the truth of the question as to whether chloroform causes death by respiratory failure or by cardiac failure lies, as it were, half between the two antagonistic forces; and, further than this, the somewhat startling statement may be made that it is not directly due in the majority of cases to either of these causes. On the contrary, the cause of death from chloroform is usually vasomotor depression. My conclusions, therefore, are that while chloroform in its general depressing power depresses all vital functions, it is the question of blood pressure which is most important." Mr. Leonard Hill says (*Treatment*, May 27, 1897): "The cause of chloroform collapse is, in all cases, a primary failure of the circulatory mechanism. It is secondarily that respiration fails, on account of the anæmia of the bulbar centres. That the cause of chloroform collapse is primarily due to failure of the circulation is contrary to the conclusions arrived at by the Hyderabad commission. Examining all the tracings taken by this commission, I have found that in them, although it is not so interpreted by the experimenters, the same typical fall of arterial pressure is recorded actually occurring before the cessation of respiration. Thus their own experimental evidence contradicts the conclusions arrived at by the workers on the commission."

There can be no doubt that, whatever may be the outcome of the discussion, it has already been clearly demonstrated that respiration is of the greatest importance in chloroform giving. In regard to the safety of different anæsthetics, the fact cannot be too strongly urged that the chief cause of danger rests with the administrator. The safest anæsthetic is dangerous in the hands of a careless administrator, whereas the most dangerous, when used by a skilful and competent man, is, considering all things, marvellously safe.

IS INSANITY INCREASING?

PUBLIC opinion has decided that this is a neurotic age and that insanity is ever on the increase. This general impression, however, appears to be erroneous, and the trouble is probably more relative than actual. Yet that there is an increase can hardly be denied. A hot and bitter discussion has been prevailing on the subject for many years in Great Britain, and still continues with undiminished vigor. The lunacy departments there hold that the increase is only apparent, while those taking the opposite view contend that the increase is only too real. Regarding the question from a statistical point of view alone, the conclusion arrived at by most persons would be that the latter are right, but, as an old-time Glasgow professor was in the habit of telling his class, "Statistics are like sausages. It all depends on the old woman who makes them." In the *Westminster Review* for May is a slashing article attacking the arguments of the lunacy commissioners which they bring forward in support of their contention that the increase is only apparent. The writer of this article says that there is a real substantial and progressive increase, and backs up his words with figures. In 1862 in England there were 2.02 lunatics in every 10,000 of population; in 1895 there were 3.15. In 1862 where there were 1.36 in every 10,000 of the population; in 1895 there were 3.96. In 1862 in Scotland there were 2.01 lunatics in every 10,000 of the population; in 1895 there were 3.39. Figures so startling as these will take a great deal of explaining away, but to a large extent they are misleading. Statistics in lunacy must be dealt with very broadly and cautiously. One reason for the great increase in the population of hospitals for the insane is the fact that lunatics are looked upon with different eyes than formerly. In the early part of the century insanity was regarded with horror or scorn, and with little feeling of pity or sympathy. The truth that it was a disease possible to cure had not entered men's minds. An asylum was a prison, the inmates of which were treated more harshly than criminals; now that asylums are recognized as hospitals, they contain inmates who formerly were not counted as lunatics. The advance in England in the number of the insane has been almost wholly in the pauper class, and is doubtless due to the improved accommodation and treatment and the consequent enhanced appreciation of the benefits of being

an inmate of a hospital. This state of affairs applies also to this country. The accumulation of chronic cases is another fruitful cause of increase, and it must not be overlooked that the accumulation of chronic cases is inevitable at a hospital for the insane as differing from a general hospital, because at any insane asylum all the incurables, or nearly all, have to be kept as permanent patients. Under the modern system, too, the rate of mortality is very much less. When all that is to be said has been said to minimize as much as possible this increase, it is useless to pretend that there has been no real increase whatever. It is certainly not so great as statistics without necessary explanations and the alarmists would lead us to suppose; still the fact that there is some increase is more or less self-evident.

THE NEED OF A HOME FOR CONVALESCENTS.

The charity which would commend itself with greatest force to physicians and intelligent laymen is an institution which would provide a shelter for convalescents, and for persons not ill enough to secure hospital care yet not well enough to compete with the hard conditions of life in a large city.

There is not a physician in New York who has not met with poor persons too ill to look after themselves, and yet not proper hospital cases. With a few weeks' rest under proper supervision these unfortunates could be restored to a life of usefulness. In the same way discharged hospital patients, freed from disease but yet too weak to take up their usual burdens, could be rehabilitated.

We commend this idea to the thoughtful and practical philanthropist. No institution adequate for the real necessities of the situation is now in existence in this city, but the value of such a one would be immense. It would fill the great gaps beyond the reach of the hospitals. It would materially lessen pauperism, and bring back to independence and vigor thousands who now drift annually into helplessness.

Russian Congress of Syphilography.—A congress to arrest the spread of syphilis in Russia, recently summoned by the government, was attended by over five hundred persons, including physicians, teachers, professors, heads of penal and other institutions, inspectors of factories, and military and naval officers. Among the measures proposed were stricter supervision of the morals of the young and cultivation of outdoor sports; education of the public to the dangers of syphilis by popular illustrated lectures, pamphlets, etc.; the adoption of a uniform blank for recording all cases, and for annual reports to a central bureau; physical examination of prostitutes by female physicians, and also the examination of the men who visit them. Special measures for preventing the spread of syphilis among the innocent, which, as shown by Bulkley in his work on "Syphilis Insontium," is so common in Russia, were also recommended.

News of the Week.

The Cumberland County (N. J.) Medical Society convened at the Hotel Cumberland, July 13, 1897, with the president, Dr. H. W. Elmer, in the chair. Dr. Rulon Dare, of Deerfield, read a paper on "Serum Therapy," and Dr. D. H. Oliver reported on the advance in medicine. The society adjourned to meet the second Tuesday in October.

Dr. Joseph J. Kinyoun, of the Marine Hospital service, has been designated by the secretary of the treasury to represent this government at the international exposition on hygienic and sanitary service on shipboard, to be held in Brussels in September. He has also been appointed a delegate to the international leprosy conference, to be held in Berlin in October. While in Europe he will visit the several bacteriological laboratories on the continent, for the purpose of obtaining information for the use of the Marine Hospital service as to recent advances in the investigation of contagious diseases.

Collision with an Ambulance. — An ambulance from the Harlem Hospital was run into at Lexington Avenue and One Hundred and Twentieth Street on Tuesday last by an electric car. The ambulance surgeon received a scalp wound, and the driver was injured about the body.

The New Morgue.—The sinking fund commissioners have authorized the dock board to extend the pier at the foot of East Twenty-sixth Street to give additional space to the new morgue building. A resolution to the same effect was passed several months ago, but it was lost in the mayor's office and was not acted upon.

Mr. Christopher Heath, ex-president of the Royal College of Surgeons, is to deliver the second course of Lane lectures at San Francisco this year. There will be ten lectures on the following subjects: Two lectures on congenital malformations, two on diseases of the rectum, two on diseases of the jaws, one on diseases of the tongue, one on diseases of the joints, one on aneurism, and a concluding lecture entitled "A Century of Surgery." For accepting the invitation to deliver these lectures, Mr. Heath was bitterly assailed by some of his amiable colleagues in the Royal College, the charge being made that he had lowered the dignity of his profession by accepting the honorarium offered, although the latter will barely cover the expenses of the long journey.

The American Association for the Advancement of Science.—The forty-ninth annual meeting of this association was opened on Monday in Detroit by Vice-President McGee, of Washington, and continued in daily sessions until Friday.

To Keep Away Mosquitoes.—A resident of New Jersey, who has tried the prophylactic with signal success, writes that a mixture of one part of oil of sassafras in five parts of alcohol applied to the hands, neck, and other exposed parts, will effectually keep away the

most ferocious of mosquitoes. It is necessary to renew the application every two or three hours.

A Case of Supposed Superfœtation.—It was reported recently in Cleveland that a woman of that town had given birth to two children, one three months earlier than the other. At the time the first child was supposed to have been born, the woman was visiting in Connecticut. She returned with a girl baby which she declared to be her own. Three months later she gave birth to a boy. The husband and the attending physicians accepted the woman's story, and looked upon the case as particularly remarkable. On inquiry, however, it was found that the woman, who is out of her mind, had given birth to no child while in Connecticut, and it is now supposed that she stole the baby she brought home with her.

Bicycle Accidents.—During July, during about half of which it was raining and consequently few wheels were out, the newspapers reported forty-eight more or less serious accidents from bicycling. Most of the sufferers were those riding the wheel, but there were also many children run down while playing in the street. It is a favorite sport of these innocents to stand directly in the path of a wheelman and make faces at him, so that it is almost impossible at times to avoid an accident.

The American Jubilee Fund, which was started for the purpose of raising money to establish beds in perpetuity in the chief London hospitals, has been closed. The subscriptions exceed $21,500.

The Moscow Congress.—The preparations for the meeting in Moscow are proceeding with a slowness comparable to that of the railway trains and many other things in Russia. The preliminary programme, issued the latter part of July, announces that there will be but three general meetings, instead of five as first proposed. The Tsar will receive one member from each country, in order to fulfil his rôle of patron of the congress, but this reception will be held in St. Petersburg two days before the opening of the congress. The selection of the one person to be thus honored will be left with the national committee, instead of with the ambassador of each country, as was first announced. This will reduce the number of those taking part in the ceremony, for there will be time to appoint representatives from European countries only. The town council of Moscow was asked to entertain the members of the congress, but instead of doing so decided to establish a triennial prize for the best essay upon some subject connected with public health or epidemiology. Some twenty members will be put up at the Maison des Cavaliers, one of the official residences in the Kremlin, as guests of the Tsar, but it is not stated how these lucky twenty will be selected. The preliminary programme contains the titles of nearly one thousand papers which it is proposed to inflict upon the members of the various sections.

Professor Max Joseph Oertel, of Munich, died on July 13th. He was born in Dillingen, Bavaria, March 20, 1835. Early in his medical life he turned his attention to respiratory diseases, and was appointed to the chair of laryngology in Munich in 1867. He was especially occupied for a time with the study of diphtheria, upon which he wrote an article in Ziemssen's "Cyclopædia," and always claimed that he was the first to discover the bacillus of Klebs-Loeffler. His classical work on the pathogenesis of diphtheria was published in 1887. About 1870 he began to suffer from heart trouble, accompanied by albuminuria, marked circulatory disturbances, œdema, and obesity. After several years of orthodox but unsuccessful treatment, he restored himself to a state of practical health by means of a special diet and graduated exercises, which he afterward developed into a system followed in the various "Terrain-Curorte" which he established in Germany and Austria. This system he described fully in his articles on the treatment of circulatory disorders in Ziemssen's "Handbook of Therapeutics," on the milk cure in circulatory disturbances in the "Festschrift" in honor of Pettenkofer's jubilee in 1893, and on obesity in the "Twentieth Century Practice of Medicine"—the latter being his last contribution of importance to medical literature. He was an honorary member of many learned societies in Germany and other countries, and was the bearer of six decorations conferred upon him by the Emperor of Austria and various German rulers.

Philadelphia Hears of a Great Discovery, and at once puts it to practical use. "PHILADELPHIA, August 9th.—At the Polyclinic Hospital this afternoon the *x*-rays were used to locate a pin which was swallowed yesterday afternoon by Kate Kellie, five years of age. The child was playing with a spool containing four pins, and in pulling one out with her teeth it slipped down her throat."—Special Telegram to *The Sun.*

Obituary Notes.—DR. EUGENE FRANCIS SANGER, of Bangor, Me., died at his home in that city on July 24th, after an illness of several months. He was born in Waterville, Me., October 18, 1829. He was a graduate of Dartmouth College in the class of 1849, and then studied medicine in Philadelphia, receiving his M.D. degree from the Jefferson Medical College in 1853. After serving in the Marine Hospital at Chelsea and later on the staff of the Charity Hospital in this city, he went to Europe, studying in the hospitals in Edinburgh, London, and Paris. Upon returning to this country he began practice in Ellsworth, but soon established himself in Bangor. Immediately upon the breaking out of the civil war he joined the medical staff and served with distinction during the entire war, filling many important places of trust, and upon being mustered out at its close he was brevetted lieutenant-colonel for meritorious service. Returning home to Bangor, he commenced the practice of his profession in October, 1865, and continued there to the time of his death. In 1868 he was made examining surgeon of the pension bureau. He was made surgeon-general of Maine by Governor Chamberlain, and served seven years as surgeon to the State militia. He was president of the Maine Medical Association

in 1876. He was an honorary member of the Detroit Academy of Medicine and of the Baltimore Medical and Surgical Society; a member of the county and State medical societies, and of the American Medical Association; a member of the G. A. R. and the Loyal Legion.—Dr. Edwin Sprenkle died at Hanover, Pa., on August 4th, at the age of thirty-nine years, as a result of injuries received in being dragged and trampled on by his runaway horse. He was a graduate of Franklin and Marshall, and of the Jefferson Medical College in the class of 1884.—Dr. Albert F. E. Krog died suddenly at his home in this city on August 10th. He was a graduate of the New York University Medical School in the class of 1881.

Inspection of Chinese Laundries. — The health commissioner of St. Louis has issued an order for the inspection of all the Chinese laundries in that city. He says that many of the Chinamen are tuberculous, and that they carry tubercle bacilli in their mouths and squirt them on the clothes they are ironing, the latter thereby becoming carriers of contagion.

The Plague in China. — It is reported that the plague prevails in Canton, and the English residents in Hong-Kong are alarmed lest it break out in that city. Nothing has been done to put the Chinese quarter of Hong-Kong in a good sanitary condition, and it is feared if the plague once gains admission its ravages will be fearful.

Surgeons in Ordinary to the Prince of Wales.— Sir William MacCormac, president of the Royal College of Surgeons, and Alfred Downing Fripp, assistant surgeon to Guy's Hospital, have been appointed surgeons in ordinary to His Royal Highness. Mr. Fripp obtained his licentiate in the Royal College of Surgeons only eight years ago and was but recently appointed assistant surgeon to Guy's Hospital, and there is some grumbling that the Prince, now himself a fellow of the college, should not have selected one of his more aged colleagues.

An International Jenner Society.—It is proposed to organize among the members of the Moscow congress an International Jenner Society, the object of which will be the encouragement of vaccination and the collection and publication of facts and statistics in connection with smallpox and vaccination. Dr. Hubert, the secretary of the Russian Public Health Society, who has the matter of organization in charge, proposes the name Jennerianum for the new society.

Censure of Hospital Surgeons.—A boy shot himself accidentally last month through the palm of his left hand with a revolver. He was taken to one of the city hospitals, where the hand was dressed. The wound did not heal, however, and a few days later the boy was seized with convulsions. A private physician was then called and extracted a piece of wadding from the palm of the hand. The boy died from tetanus. An inquest was held, and the coroner charged the jury that the case was clearly one of criminal neglect on the part of the hospital authorities in not giving proper treatment to the boy. The jury returned a verdict that the boy came to his death by tetanus following a wound made by the wadding of a blank pistol cartridge, and they censured the surgeons at the hospital for failing to discover the wadding in probing the wound and for failing to remove the powder also contained in the wound.

Medical Society of the Missouri Valley.—The annual meeting of the society will be held at Council Bluffs, Iowa, Thursday, September 16, 1897. Titles of papers to be read should be sent to the secretary, Dr. Donald Macrae, Jr., not later than August 26th.

Antitoxin of Tetanus.—A case of tetanus in a colored man, resulting from a nail wound of the foot, has been placed under treatment at the Emergency Hospital at Washington, D. C., with antitoxin prepared in the United States army medical laboratory.

The Boston Medical Library has received the medical libraries of the late Drs. Edward Wigglesworth, of Boston, and William G. Wheeler, of Chelsea. The former is composed almost entirely of books and periodicals on dermatology, and contains nearly everything published on this subject up to a short time before the owner's death. The latter consists of books by early American writers, standard medical works, files of valuable periodicals, and a large collection of books and monographs on obstetrics and gynæcology.

Hot Weather in Italy.—The weather in all parts of Italy during July has been extremely hot, and to aggravate the sufferings of the inhabitants there is an ice famine, the price of this necessity having risen to $1.20 a hundredweight.

Beriberi has been discovered on board a Norwegian vessel recently arrived at Cork harbor from the west coast of Africa. Six of the crew were suffering from the disease and one had died on the voyage.

The Right to Practise Medicine in France.—The Paris correspondent of *The Lancet* writes that the French government has been asked to annul the by-law of two years' standing, under which foreign students desiring to study medicine in France were sent to the provincial universities. Previously to this by-law the foreign student was in a better position than the French student, because he was not compelled to serve three years in the army or to pass a matriculation examination of equal severity. As a set-off to this great advantage, foreign students were therefore drafted to the provincial centres instead of being permitted to work at the Faculté de Paris. But more recently a rule has come into force whereby the degree of doctor of medicine shall give the right of practice in France or French possessions only to such students as shall have passed the usual French preliminary examinations and have served three years in the army. Native talent is considered by the municipal council to be sufficiently protected now, and the prefect of the Seine has promised to communicate this view to the government. The commencement of the next November session will therefore probably see foreign students again inscribing their names at the Faculté de Paris, but the degree which they expect will not give them the right to practise in France unless they conform to the new regulations.

Clinical Department.

STRANGULATED UMBILICAL HERNIA—OPERATION AND RECOVERY.

By WILLIAM B. COLEY, M.D.,

NEW YORK,

ASSISTANT SURGEON TO THE HOSPITAL FOR RUPTURED AND CRIPPLED; ATTENDING SURGEON TO THE NEW YORK CANCER AND POST-GRADUATE HOSPITALS.

Inasmuch as successful operations for strangulated umbilical hernia are comparatively rare, the following clinical case may be of interest:

Mrs. S——, aged fifty-two, married, had had an umbilical hernia for twenty-two years, since the birth of her last child. The hernia had remained reducible until two years ago; since then it had slowly increased in size and had at times given rise to symptoms of incarceration. These attacks were accompanied by severe pain, with constipation, nausea, and vomiting, which sometimes obliged her to remain in bed for two or three days. The present attack began on April 21, 1897. There had been some pain at the site of the hernia the preceding day. The symptoms, however, became greatly intensified on the morning of the 21st, while she was attending to her household duties; vomiting soon began, became severe and frequent, and during the latter part of the day was greenish in color. She had one movement of the bowels in the morning. The pain greatly increased in severity, and at about four o'clock in the afternoon she was seen by Dr. George Peace, of Dover Plains, N. Y., who made the diagnosis of strangulated hernia. The tumor was about the size of a closed fist; the skin over the sac was discolored and very thin. The tumor on light percussion was dull; on heavy percussion showed an indistinct tympanitic note, which suggested bowel masked by omentum or liquid.

I first saw the patient on the train at Pauling, N. Y. At that time her pulse was 84; temperature, 99.5° F. She rode on the train eighty miles, during which time there was no vomiting, but considerable pain and much nausea. The tumor was exceedingly tender on pressure.

She was admitted to the Post-Graduate Hospital at 9 P.M., and immediately prepared for operation.

Operation was performed at 9:40 P.M., about ten hours after the beginning of strangulation, with ether as the anæsthetic. An incision through the skin and thin sac showed only a mass of discolored omentum which was adherent to the sac throughout, though most of the adhesions, especially those in the fundus of the sac, were of recent origin. There was little fluid present. On separating the omentum there appeared a knuckle of small intestine, about eight inches in length, badly congested, but which had not lost its glossy appearance. The bowel was completely enveloped in this mass of omentum, which really formed a second sac and could not be seen until an opening had been made in the omentum; on account of the thick layer of fat in the abdominal wall the ring was deeply seated, and, moreover, very narrow, making a very tight constriction. After the constricting ring had been cut, the bowel soon regained its color, and it was thought safe to replace it in the abdominal cavity. The entire mass of adherent omentum was then ligated in small sections with catgut and removed; the sac and skin pouch were likewise excised, and the wound was closed with three layers without drainage; kangaroo tendon was employed for the fascia. The time of operation was forty minutes. The pulse at the close ofthe operation was 78 and of excellent quality.

The subsequent history of the patient contained nothing worthy of note; recovery was absolutely uninterrupted; the wound healed by perfect primary union.

The mortality in strangulated umbilical hernia is still very high, varying between fifty and eighty per cent. The reason for this mortality lies, I think, in the fact that the patients are usually very stout women and very poor subjects for any serious operation. In addition, the hernia is usually complicated with a large mass of irreducible adherent omentum, the removal of which materially delays an operation which for its success is largely dependent on rapidity of execution.

HYDATIDIFORM MOLE.

By C. C. CRONKHITE, M.D.,

MARION, IND.

On February 16, 1897, I was called to attend Mrs. D——, primipara, twenty-two years of age, in what she supposed was confinement. On arrival I found her having pain and apparently in the first stage of labor. There was a slight discharge tinged with blood from the parturient canal. On palpation I found a large and doughy abdomen, quite firm at the lower portion of the womb. An outline of the child could not be made. Digital examination showed the cervical canal dilated to the size of a silver twenty-five-cent piece. The pains were increasing in severity. At 11 P.M. I was hastily called. The patient informed me that something had just passed during a severe pain. I found a large mass (at least half a gallon) and small particles continued to pass for three days. On the third day the patient was quite tympanitic. I used vaginal douches of hot carbolized water and placed turpentine stupes over the abdomen. After this there was a gradual and uninterrupted recovery. The patient thought herself at full time and believed that she had felt movement for several months. In September, 1896, she had a slight flow resembling menstruation. In October, 1896, she had pain in the womb and a small mass resembling a blood clot was expelled.

June 14, 1897

A TYPICAL CASE OF SCURVY IN A COUNTRY-BRED INFANT.

By CHARLES B. WARNER, M.D.,

PORT HENRY, N. Y.

The following case is of interest, as scurvy is such an extremely infrequent affection in this country. It also demonstrates unmistakably the danger of eliminating fresh milk from the dietary of tender infants. According to Dr. Northrup, in Starr's "American Text-Book of Diseases of Children," there have been in American practice only fifteen recently published cases of scurvy in children.

The subject of this report was born in May, 1894. Parents healthy and well-to-do; history of rachitis in maternal grandmother and two great-aunts. The child was weaned at twenty-two months, having been fed nothing besides mother's milk, except a well-known proprietary food prepared with a small quantity of cow's milk. This food was also the exclusive diet for eight months after weaning. For the next two months animal broths constituted the principal part of her bill of fare, not a drop of milk being given.

I was called to see her and found her suffering with lameness in the left leg. This condition increased rapidly. In a few days she was quite unable to walk, and carrying her or moving the limb caused intense pain. At night the pain in both legs was so great that she was deprived of sleep.

The legs were kept flexed, any attempt to straighten them causing her to cry out. The left tibia became a good deal enlarged in the lower third. A few days later the gums became sore and continued to grow worse until they became very much swollen, dark,

spongy, and bleeding. They could be separated from the teeth down to the alveolar process. The patient was fairly well nourished, but very petulant; the bowels were in good condition; the temperature was slightly elevated at times.

The treatment was antirheumatic for a few days, the true condition not being recognized immediately, followed by syrup of lactophosphate of lime, syrup of iodide of iron, solution of arsenite of potassium, quinine sulphate, bitter tonics with iron, and cod-liver oil inunctions—but to no avail.

A change of regimen was advised early in the case, fruit and milk being prescribed, but as the child disliked both they were not given. The proprietary food prepared with a small quantity of milk and animal broths constituted its *menu*.

On May 3d, the infant having been sick about three months, the situation was very clearly explained to the little girl's mother, and a radical change of diet was insisted upon, potatoes, fresh cow's milk, and orange juice being again prescribed. The juice of one orange was given each day and more milk was added to the food. Potatoes were not given. The effect was little less than magical. In three days the gums were wonderfully improved, and in five days were well. The improvement in the legs was almost as rapid, she being practically well in two weeks after commencing the orange juice.

To those unfamiliar with scurvy, it will seem either incredible or almost miraculous that a child could be restored from a constitutional disturbance so grave that death often results to perfect health, by the juice of five oranges.

SYMPHYSEOTOMY WITH AN UNUSUAL COMPLICATION.

By EDWIN B. CRAGIN, M.D.

The interest in the following case lies not so much in the operation as in the complication which interrupted the convalescence.

On February 25, 1895, the writer was called by Dr. H. S. Houghton, of this city, to see Mrs. V—— who had been in labor eighteen hours. Forceps had been tried, but their application proving very difficult they were abandoned.

Examination showed a narrow conjugate, a large caput, and no advance under powerful uterine contractions. This was her second labor. Her first occurred in 1893, and lasted forty-eight hours. After repeated applications of the forceps this first child had been delivered, but the head had been injured and the child lived but three days. The present condition seemed to indicate symphyseotomy, and as soon as preparations could be made this was performed with the able assistance of Drs. Houghton and Lyle. A male child weighing seven and a quarter pounds was then easily delivered with forceps.

The case progressed favorably. I saw the woman on March 17th, and told her she could sit up on the following day. That evening the husband, who was acting the part of nurse, gave her an enema. This was accompanied and followed by severe pain and the next day I was summoned in haste. I found a temperature of 103.5° F., pulse of 120, and abdomen distended, with dulness over the left inguinal region. Examination disclosed the fact that the husband in giving the enema had perforated the rectal wall and deposited the soapsuds in the retroperitoneal tissue. The finger passed easily along the false passage through and outside the rectum. I expected suppuration, but instead of that the soapsuds infusion was absorbed and in a week, *i.e.*, four weeks from the time of operation, the woman was able to sit up.

On April 25th I found the patient on the street, walking without difficulty and carrying her child.

May 20th I found her doing her washing. She could hop on either foot without difficulty and said she felt well and strong. The symphysis showed firm fibrous union with little if any motion. The true internal conjugate measured three and a fourth inches.

62 West Fiftieth Street.

A CASE OF PTOMAIN POISONING.

By J. A. O'NEILL, M.D.,

NEW ——

I called recently at a large machine shop to attend a workman who was said to be dying. I found him semiconscious, his face pale, lips and fingernails blue, pupils contracted, and pulse hardly perceptible. His respirations were sighing and occurred at alarmingly long intervals, yellow froth coming from his mouth with each expiration; involuntary defecation had also taken place.

I suspected opium poisoning but thought the patient too greatly depressed to stand an emetic, so I gave him a hypodermic injection of strychnine with a generous amount of brandy. Partly aroused by this he was soon able to drink some strong hot coffee and to answer questions. He said he had had a diarrhœa the night before but had taken no medicine or drug of any kind. He had eaten no breakfast but had drunk some milk from a tin canteen.

Knowing that in the early stages of putrefaction of nitrogenous bodies poisonous ptomains are produced, I changed my diagnosis from opium to tyrotoxicon poisoning. Ptomain poisoning frequently resembles that of the vegetable alkaloids, such as morphine, codeine, veratrine, etc.

A mention of this case seems timely during the present hot weather, and may aid some fellow practitioner to a diagnosis when confronted by similar ambiguous symptoms.

115 West Eighty-[illegible] Street.

MENSTRUATION AND EPILEPSY.

By D. T. MARSHALL, M.D.,

[illegible]

The following table was compiled from the histories of ten epileptic girls, to see whether the epileptic attacks were in any way influenced by the occurrence of the menstrual flow. The figures in the table are the totals for the months during which the observations were made, and do not indicate whether the attacks were more numerous immediately before or after the periods. Examination of the histories, however, would show that the attacks were about evenly distributed throughout the months, the periods apparently having no influence. Of thirty girls under observation but four gave any history of an aura. Of these one says she feels faint for a second before the attack. Another says she feels as though she were going to fall into a pit of fire.

Case Number.	Age.	Time under Observation, Months.	Total Number of Attacks.	Attacks during Menstrual Period.
1	24	6	16	3
2	15	5	118	8
3	16	6	49	4
4	14	8	49	8
5	18	4	27	8
6	16	4	74	13
7	14	4	28	4
8	17	5	320	46
9	18	13	149	23
10	14	3	186	13

Society Reports.

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, June 3, 1897.

EDWARD G. JANEWAY, M.D., PRESIDENT, IN THE CHAIR.

Public Baths.—After a brief discussion the resolution offered at the last meeting to appoint a committee to urge on the city authorities the erection of public baths was adopted, and Drs. Simon Baruch, George Fowler, and Richard Van Santvoord were appointed on the committee.

Persistent Tachycardia with Digestive and Nervous Disorders.—DR. WILLIAM THOMSON read the paper upon this subject (see page 217).

DR. C. L. DANA said he had looked over his cases and found that he had a record of twenty-six with persistent tachycardia due to organic disease of the heart, eight to neurasthenia, four to melancholia, eight to Graves' disease, two to typhoid fever, two to paralysis agitans, and two to locomotor ataxia. Some of these cases gave a good many of the symptoms described in the paper, but he had found no case which he could not explain on some other ground than that presented by the writer. In some neurasthenic cases he thought the heart was small and weak, perhaps congenitally so, and the nerve force was small. Another class of cases was those of women nearing the menopause. The tachycardia in the melancholic cases was of psychical origin. Grippe sometimes left tachycardia that was very persistent, but he thought that was due to injury to the vagus nerve or to the ganglia of the heart. He could not understand how the alimentary tract, which is not a secreting gland, could be constantly throwing toxins into the system and thus causing persistent tachycardia.

DR. RICHARD VAN SANTVOORD said that the interpretation of the cases seemed to him in the main correct. It seemed that Graves' disease was somewhat analogous, probably due to a poison from the thyroid gland. He had been able to explain his cases on ground other than that of the writer. He had one case of tachycardia in which there were mild attacks of toxæmia for four years, but the tachycardia could be explained as neuralgic.

DR. JANEWAY said he thought the ground had been about covered. It was a question whether these cases should be considered as arising from toxæmia or from disturbance of nervous tone. He had had two cases which interested him especially, one in a lawyer, the other in a physician. Both had a very large output of urea and he thought the tachycardia might be due to that. He was not ready yet to express a positive opinion on the theory of toxæmia from the digestive tract.

DR. THOMSON said in conclusion that his subject disposed of the argument of Dr. Dana. He knew there were many cases of tachycardia due to the causes mentioned, but the paper dealt with tachycardia with pronounced gastric symptoms and not the ones referred to by Dr. Dana. It was possible by having patients eat bread and meat to prove that cases such as those mentioned could be due to auto-infection. The tachycardia could be induced by changing diet and reduced by returning to milk diet. He would also say that in many cases melancholia came from the alimentary tract.

No Smallpox in New York.—The last case of smallpox in this city was reported on July 14th, and the Board of Health announces that the epidemic is over.

MEDICAL SOCIETY OF NEW JERSEY.

One Hundred and Thirty-First Annual Meeting, Held at Atlantic City, June 22 and 23, 1897.

T. J. SMITH, M.D., OF BRIDGETON, PRESIDENT.

THE session was opened with prayer by REV. W. M. WHITE. The secretary, DR. WILLIAM PIERSON, called the roll. The mayor of the city, HON. F. P. STORY, then made a brief address, welcoming the society again to Atlantic City, where its meetings had been held several times, the last time five years ago. He was followed by DR. BOARDMAN REED, chairman of the committee of arrangements, who announced an excursion, reception, and entertainments. DR. H. R. BALDWIN read the report of the committee on business, by which it appeared that under the new bylaws several of the papers were to be in the nature of a *résumé* of therapeutics in different departments of medicine for the year, prepared by members of the standing committee. DR. READING announced that the photographer awaited the pleasure of the society, and DR. PIERSON hoped he would have to wait until he became as tired as the society had in the past. A number of gentlemen were invited to sit as corresponding members. DR. H. W. ELMER reported that the committee on ethics had not come to a decision in one case, but later reported for the committee, dismissing the charges. The report of the treasurer, DR. ALFRED MERCER, showed a deficiency of assessment to meet running expenses, and United States bonds had been deposited to secure a loan. Later a motion to sell one of the society's four $1,000 bonds to meet expenses in preference to borrowing was voted down, as a dangerous precedent in invading the permanent fund. The assessment for the coming year was made $2. DR. E. L. B. GODFREY read his report as corresponding secretary, which showed considerable correspondence in relation to appropriation for State laboratory, vivisection in the District of Columbia, with district societies, etc. THE PRESIDENT appointed on the auditing committee Drs. Baldwin, Hollister, and Blake, who found the treasurer's account correct. DR. H. G. TAYLOR reported that the committee on honorary membership had had no name submitted to it, whereupon DR. PIERSON nominated Dr. Pennington, of Newark, for honorary membership, his name to go to the committee for report next year.

Bovine Tuberculosis.—DR. J. W. STICKLER, of Orange, chairman of the committee on legislative action on bovine tuberculosis, stated in his report that the committee thought it could do something toward securing a more effective legislative measure for the eradication of bovine tuberculosis in the State if it were authorized to act with certain other bodies, including the State board of health and the dairy commission. On motion the committee was continued and authorized to act in conjunction with the bodies named.

State Laboratory at Princeton.—DR. D. M. SKINNER, chairman of a committee which had been appointed last year to go before the legislature to urge the passage of the bill appropriating money to the laboratory of bacteriology at Princeton, reported that the committee had been successful in its mission, and $3,000 had been appropriated.

Report of Standing Committee.—DR. H. W. ELMER read the report, which was supplemented later by reviews of the progress of medicine in its different branches by the other members of the committee. It appeared by Dr. Elmer's report that a local society existed in Atlantic City, called the Atlantic City Academy of Medicine. Most of the county societies held only two meetings during the year, one in the spring and one in the autumn. In some portions of the State

there had been a good deal of typhoid fever. The general death rate per thousand in Atlantic City had been only 6.5 per cent., which was extraordinarily low.

Expert Testimony.—Dr. William H. Iszard, in the last part of a paper reviewing the subject of expert testimony, pointed out the desirability of a change in the law, which seemed likely to take place in New York and some other States, making the medico-legal expert an officer of the court rather than an *ex-parte* witness for the side of the prosecution or defendant.

Surgery.—Dr. Charles Young, in a review of the surgery of the year, referred to Murphy's report of two cases of end-to-end suture after resection of large blood-vessels injured in continuity;[1] to a new mode of ligaturing which permitted removal of the ligature without cutting and which had been employed in the Woman's Hospital; to Stimson, on the use of saline injections in extreme shock; to Wyeth, on local anæsthesia by cocaine; to the report in *The Lancet* of a case of tetanus which recovered under mercuric biniodide; to the use of antistreptococcus serum; to articles on gunshot wounds of the head, wounds of the air passages, injuries of the liver in which exploratory laparotomy was recommended, blunt needle for ligation of liver vessels, use of catgut ligature. Articles on perforating gastric ulcer pointed out the necessity for operation. One operator had reported five cases, with four recoveries. One patient, operated upon fifty hours after perforation, had recovered. Surgery had been shown to be the only rational treatment of typhoid ulcer with perforation. The rules laid down by Shrady for operation in appendicitis were read. In the treatment of fractures Woolsey considered the ambulatory plan as ideal.

State Medicine and Hygiene. — Dr. Henry Mitchell, of Asbury Park, stated in his review of this department that many new facts were continuing to be brought out which had important bearing upon hygiene and State medicine. In laboratory work the department of bacteriology had been most rewarded. Mention was made of Koch's discovery in prevention of the rinderpest, of diphtheria antitoxin, of sero-diagnosis of typhoid fever, of the possibility of oysters conveying infectious germs, of the increasing use of formaldehyde in disinfection, of the aseptic-tank system of treating sewage, of the pasteurization or sterilization of milk, of the appointment of medical school inspectors, which he hoped would come to be done in New Jersey.

Diseases of Nose and Throat. — Dr. Fayette treated of this topic. He spoke of advantages of the forehead electric lamp over the head mirror, and of the fact that autoscopy seemed to be viewed with greater favor by some than was laryngoscopy. The *x*-ray gave promise of some utility in diagnosis of the upper air passages. Dr. French had been prosecuting laryngeal photography with success. The treatment of goitre with thyroid had shown good results in youth, but the likelihood of recovery from any mode of treatment was slight in adults. Relapses were the rule. The relation of ear disease to postnasal adenoids had received considerable attention. The indications for operation depended upon the mischief produced by the adenoids rather than upon their quantity. Mention was also made of the relation of the uric-acid diathesis to hay fever. A constantly increasing volume of testimony had been recorded in favor of the existence of this diathesis.

Eye and Ear.—Dr. Chambers, of Jersey City, presented a review of this department. He spoke of the use of formaldehyde as a disinfectant; of one author's observation of blennorrhœic ophthalmia in spite of the use of the Credé method; of the Roentgen rays in disclosing small pieces of metal in the lens; of the treatment of prolapse of the iris by excision if seen at once, tentatively if seen after a few days; of tinnitus aurium in ear affections; of surgery of the ear, of the sinuses, or of the brain in cases of abscess, etc.; of Tiffany's preference for chloroform anæsthesia in brain surgery. Buck he said had called attention to the connection of gout with diseases of the ear, and various other things.

President's Address.—Dr. T. J. Smith, of Bridgeton, chose for the subject of his address, "The Problem of Dependency." As a director in the New Jersey training-school for feeble-minded children, he had given a good deal of thought to this subject, and it had again been strongly forced upon his attention by the failure of the governor to approve the bill providing for an epileptic colony. The law of the survival of the fittest did not release us from our obligations to the dependent. Compassion, charity, and love were above natural law in the restricted sense. Compassion was not natural; it was supernatural. Besides, these people who required charity were the fruit of our civilization, which made it but just that those endowed with strength and wisdom should help the weak. Yet the problem of dependency, with the proper conception of its varied causes and results, had been a perplexing one since the inquiry, "Am I my brother's keeper?" was first propounded. The failing ranks of the human race were ever to be replaced with a certain proportion of the degenerate, the inefficient, and the vicious. Shall the stringent process of law or the gentler influence of benevolence prove to be more successful agency in dealing with such persons? Social reforms moved slowly. It was much easier to walk in the old ways than to search out new. True reform was accomplished by persistent effort wisely directed. We could not discharge our duty to those in want by simply flinging them a gift in passing. When the law of benevolence supplanted that of mere friendship, it had marked the transition from a pagan to a Christian civilization. The president then took up the subject of the care of epileptic dependents, and advocated the adoption of a method which had prevailed for years in France and Germany of caring for them in colonies, a method which had recently been put to a practical test in New York, at the Craig Epileptic Colony. It was shown that epileptics improved, that some of them were permanently cured at these colonies, that they became useful and contented in their several occupations and largely self-supporting. At present in New Jersey they crowded the asylums for the insane and the poorhouses, and created much alarm among other inmates when their paroxysms occurred. At the laboratory the pathology of the disease, about which we now knew little, could be studied. It was estimated that in New Jersey there were from two to three thousand epileptics, and in the United States one hundred and thirty-five thousand. The legislature had made a small appropriation for the starting of an epileptic colony, but the governor had vetoed the bill. It was necessary, therefore, that the society should continue its educational work.

Dr. Marsh moved that a committee of five be appointed to present the subject of establishing an epileptic colony before the legislature, if it thought best. The motion was adopted, but Dr. Marsh declined an appointment on the committee, because he had no positive views on the subject.

Some Important Points in the Treatment of Pneumonia.—Dr. L. F. Bishop read the paper (see page 228).

Foreign Bodies Found in the Stomach of an Insane Man.—Dr. B. D. Evans exhibited half a dozen spoons, over a dozen stones of various sizes, and as many other hard objects, which were found in the stomach of a man who had died recently of chronic

[1] Medical Record, January 16, 1897.

insanity in the asylum at Morris Plains. About four months before his death he had been detected swallowing the handle of a spoon, and then confessed having swallowed various objects with the intention of committing suicide, for he had been placed under guard for other attempts upon his life. There had been nothing to direct attention to his stomach until he was seen to swallow the spoon handle. Hard objects could be felt on palpation, but no operation was undertaken. It was only when closely questioned that he had admitted having a gnawing sensation in the stomach. A number of stones had passed by the anus. He died of dementia, and autopsy showed numerous stones, spoons, etc., in the stomach and intestine.

A Criticism of Modified Milk of Present Dairy Methods.—Dr. Richard C. Newton, of Montclair, read the paper. When we considered the fact that the science of lactology, if he might be allowed to coin a term, was only about a dozen years old, it gave promise of great things. It was likely that milk would come more and more into demand as a food product as time went on. The advance made in the subject of lactology the last few years had been remarkable, and, with discoveries likely soon to be made in bacteriological lines, promised to revolutionize many methods now in use in dairies. It must be admitted, however, that at present we could not base the feeding of infants upon our knowledge of the chemistry and bacteriology of milk. Often trial alone would determine whether the milk of a given animal would agree with an infant, or how it required to be modified. He had come to the conclusion some years ago, and experience had confirmed him in the opinion, that the sooner milk was fed to the infant after being taken from the udder the better, and the less it was shaken the better. Clinical illustrations were given. The author considered the various subjects of sterilization, pasteurization, alkalinity or acidity of milk, danger of infection, comparative value of milk from different animals for infants, etc.

In the Treatment of Appendicitis, is the Free Use of the Knife Necessary?—This was the subject for discussion decided upon at the last annual meeting. The discussion was opened by Dr. G. H. Balleray, of Paterson (see page 231).

Dr. H. R. Baldwin related clinical experience which led him to think that many cases of appendicitis recovered without operation. His treatment had been to move the bowels and to poultice outside and inside—flaxseed outside and Indian meal inside.

Dr. I. N. Quimby said that while he was fond of operating he really thought the physician should be first to take charge of cases of appendicitis. There was some disposition to substitute the knife for therapeutics, which he thought was a great mistake.

Dr. M. Lampson, of Jersey City, said the burning question to-day was when to operate, if at all. On the one hand there were surgeons, he believed, who recommended operation in every instance—if not at the moment yet at some time, perhaps between attacks. Then there were physicians who were too conservative and too slow to permit operation. It had been shown in the discussion that forty per cent. of all cases of appendicitis would recover even spontaneously, and some had claimed that as many as ninety per cent. would recover without operation. That suggested the question: Would the loss of life be greater if no operations were done? His own experience with operative interference had been rather unfortunate, he having lost three out of four cases last year.

Dr. P. A. Harris, of Paterson, recalled the teaching of Alonzo Clark with regard to peritonitis and its treatment by opium, and was inclined to think that many patients with appendicitis or conditions so diagnosticated would be better off with that treatment. If this treatment were not carried out the cases were more likely to require operation.

Dr. Newton defended two New York surgeons against the charge that they used the knife in all cases.

Dr. A. W. Sullivan was disposed to find the mush-and-poultice treatment applicable in most cases.

Dr. Barton, of Philadelphia, expressed his views at some length in favor of surgery, which he found indicated in many cases.

Dr. Ill believed that he operated in not more than one of half a dozen cases of appendicitis seen. He regretted very much that Dr. Harris had commended the opium treatment. It locked the bowel, masked the symptoms, and did nothing but mischief.

Dr. Reilly gave some personal experience.

Dr. Boardman Reed said they once called all cases typhlitis and perityphlitis, and later appendicitis. At one time he believed in operating in nearly all cases, but further experience had brought him to medium ground.

The discussion was continued by Dr. Rigg and closed by Dr. Balleray.

The following committee was appointed on the President's address on the founding of an epileptic colony: Drs. Barker, J. T. Smith, John W. Ward, B. D. Evans, and Shepherd.

Headaches, Auto-Intoxication a Factor.—Dr. Luther M. Halsey, of Williamstown, chose this as the subject of his address as third vice-president. The investigations of Bouchard, Ratchford, Haig, Sternberg, and others were reviewed, a few clinical cases were read, and the conclusion was arrived at that auto-infection had not a little to do with certain disturbances of the system, particularly nervous disturbances and headache. There could be no doubt that the authors named were working along lines where they were likely to discover important causes of disease.

A Successful Prize Essay.—The Fellows' Prize of $100 was awarded to Dr. George Bayles, of Orange, for an essay on antitoxin. An essay by Dr. Floyd Ewen received favorable mention.

Scarlet Fever Reproduced by Inoculation, and Some Important Facts Deduced Therefrom.—Dr. J. W. Stickler presented a brief statement of some experiments which he had been carrying out the past six years. He began with the view of developing an immunizing serum for scarlet fever. Instead of succeeding in this he had proven another fact of importance. The secretions were taken from the throat of a man ill with scarlet fever, the eruption having been present two days. As stated, the object was to discover an immunizing serum. The secretions were diluted with water, and also a part with carbolic acid, 1–600. Ten persons were inoculated, six of them infants, at one time, the needle being introduced only just under the cuticle, not into subcutaneous tissue. All developed typical scarlet fever. Fortunately all recovered. The average period of incubation was thirty-two hours; average time before vomiting, twelve hours; average temperature range, 99.22° F.; shortest time for desquamation, three days; longest, nine days. The experiments established these facts: 1. That the mucus of the throat and mouth contained with absolute certainty the contagium of scarlet fever. 2. That the early eruptive stage was exceedingly infective because of the discharges from the mouth and throat. The remaining conclusions referred to preventing the spread of the contagium, especially from the mouth and nose.

The Present Status of the Serum Treatment of Diphtheria.—Dr. Alexander McAllister, in presenting the present status of the serum, especially the antitoxin, treatment of diphtheria, pointed out that its

position was becoming constantly less assailable, and that antitoxin ought to be used in every case of diphtheria. In the pharyngeal type one should use one thousand units immediately on making the diagnosis; if the case was seen later or was of the croupous variety, he should give two thousand units. If the symptoms were not relieved, the dose should be repeated.

Four Types of Infantile Diarrhœa, and Indications for Treatment.—Dr. W. Edgar Darnell read the paper. In a concluding remark on treatment he said it was necessary to eliminate from the bowel the causes of the disturbance as far as possible, and adopt measures which would aid in restoring normal functions.

Rush Monument Committee.—The following committee was appointed on raising money for the Rush monument fund: Drs. William Elmer, E. L. B. Godfrey, W. J. Chandler, and Day.

Officers.—*President*, D. C. English; *First Vice-President*, C. R. P. Fisher; *Second Vice-President*, Luther M. Halsey; *Third Vice-President*, John J. H. Love, of Montclair; *Corresponding Secretary*, E. L. B. Godfrey; *Recording Secretary*, William Pierson; *Treasurer*, Alfred Mercer; *Standing Committee*, Stephen Pierson, Morris Iszard.

Place of next annual meeting, Asbury Park, June 28, 29, 30, 1898.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, December 9, 1896.

John Slade Ely, M.D., President.

The Formation of Giant Cells.—Dr. Anna W. Williams exhibited under the microscope a number of sections from the lung of a child. As these were obtained from a laboratory jar, labelled "miliary tuberculosis in a child," no history bearing on the condition was available. There were two pieces of lung—one from the neighborhood of the hilus, showing consolidation on gross examination; and the other, taken from the apex, showing a few scattered miliary tubercles. The sections exhibited were from the first portion. From the appearance of some of the giant cells, the speaker said she had been led to conclude that their mode of formation was more complicated than was generally supposed. The sections had been stained for tubercle bacilli, with positive results, and serial sections had been stained with hæmatoxylon and eosin. Under a low power a large number of giant cells are to be seen, many of them circular or oval, having an unusually regular outline, suggesting a wall, and the nuclei arranged more or less regularly about the periphery within this wall. Other cells are more irregular and less well defined. These cells are generally the centre of a smaller group of epithelioid cells. Under a high power the "wall" is found to be composed of elongated cells, with oval nuclei such as one sees in cross sections of small blood-vessels or lymph vessels. Within this wall are more oval nuclei and some spheroidal cells. The centre shows a granular and more or less homogeneous mass. The serial sections show that many of these giant cells are much elongated and branched. The branches are narrow and oblong, bounded by elongated nuclei, giving the appearance of a small vessel. The blood-vessels in these sections show little change except that the smaller ones in the vicinity of the tubercles have their walls infiltrated with small spheroidal cells. The bronchi show the changes of simple exudative inflammation. From these specimens it would seem reasonable to conclude that the principal infection occurs through the lymph channels, that, the lymphocyte taking up the tubercle bacilli and becoming agglutinated and degenerated, small particles of these degenerated masses pass to the smaller lymphatics, plugging them and causing a thrombus. The lymphocytes collect about the periphery of the vessel at this point, the endothelial cells increase, and necrosis extends from the centre. The observations made by Borrel on the formation of the giant cell in tuberculosis, as published in his article, "Tuberculose Pulmonaire Expérimentale,"[1] were interesting in this connection. He inoculated a pure culture of tubercle bacilli into the ear vein of rabbits, killing an animal immediately after the inoculation, and others every ten minutes, thirty minutes, three hours, fourteen hours, and then every twenty-four hours. Section of the hardened lungs were studied. He found that immediately after the inoculation there developed an intense polynuclear leucocytosis, most of the leucocytes containing bacilli. After a day this general polynuclear leucocytosis disappeared, and only a varying number of groups of these leucocytes containing bacilli remained in the blood-vessels. The evident decrease in the number of leucocytes was due to the fact that the blood stream carried some of them to other parts of the body, while others passed through the vessel wall into the alveoli of the lungs. On the third day the leucocytes containing bacilli in the blood-vessels showed degenerative changes, gradually breaking up and setting the bacilli free. As this last change was going on, a number of large mononuclear leucocytes formed about the periphery of the vessel at the place where the degenerated polynuclear leucocytes were grouped, inclosing the degenerated elements. Through the fusion of these mononuclear leucocytes with the central detritus, giant cells were formed. These Borrel called the intravascular giant cells. He did not say that he observed an increase in the connective-tissue cells of the blood-vessel wall, but that this takes place was very probable, especially when there are few bacilli, or when they are less virulent, or the individual predisposition to tuberculous infection was not great. In the present case only a few tubercle bacilli were found, and these were at the periphery of the more degenerated giant cells.

Dr. Henry Power said that he thought some of the appearances would lead to the conclusion stated by Dr. Williams regarding the formation of the giant cells. Such a conclusion could not be made positively, however, without more prolonged study of the specimens.

The President said that the specimens certainly indicated that some of the giant cells were formed in the manner claimed. In the cross sections many of the giant cells could be followed for a considerable distance, and with that regularity which would be observed if they had been formed in a channel. He saw no reason why giant cells should not be formed in this way.

Dr. Power asked what prevented the larger lymphatics from taking part in the same change.

The President replied that to get such a formation the lymphatic to be occluded must be rather small. If a small bit of cheesy matter should happen to gain lodgement, the arrangement would be eccentric. One would hardly expect that a large particle would be carried along in this way.

Constitutio Lymphatica.—Dr. James Ewing presented specimens hardened in alcohol from a case in which death occurred from chloroform narcosis. In connection with this case, he made some remarks on the subject of the "Constitutio Lymphatica."

Dr. Power recalled an autopsy in a case of Basedow's disease, in which the thymus gland was considerably enlarged. The subject was a woman, twenty-one years of age. The uterus and ovaries were undevel-

[1] Annales de l'Institut Pasteur, 1893.

oped, and the kidneys were lobulated. No other enlarged glands were found. He did not think that as yet we were justified in placing either the thyroid or the thymus glands among the lymphatic glands.

Dr. Ewing said he was not able to say just where the thymus and thyroid glands were to be classed. He thought a word ought to be said on the negative side of this subject. The lymphatic constitution did not seem to him as yet an established fact. Many victims of sudden death under chloroform had been previously subjected to severe tests of vitality, and had not succumbed. A fact in connection with reports from Germany which was of some importance, was the freedom with which chloroform is administered in that country. The diagnosis of constitutio lymphatica was accepted without comment in Vienna at the present day, and hence the condition should receive more attention here.

Fœtal Endocarditis.—Dr. Martha Wollstein presented a heart taken from a baby, six weeks old, who had been admitted to the Babies' Hospital. On admission there was a loud systolic cardiac murmur, heard with greatest intensity at a point just below the left nipple, but audible all over the chest. Cyanosis was present only just before death. The autopsy showed the heart to be enlarged, the left ventricle decidedly hypertrophied, the aortic orifice stenosed to about half its normal size, and the semilunar valves so agglutinated that there were only two flaps instead of three. All the other valves were normal.

The Diplococcus Intracellularis Meningitidis.—Dr. Wollstein also presented a brain from a boy who had been admitted to the hospital when five months old, after an illness of seven weeks. According to the history the child had been perfectly well up to the beginning of this last illness. The onset was sudden, and was marked by crying, vomiting, and the classical symptoms of meningitis. Three days before this the child had fallen out of bed on to the floor. On admission the child, although five months old, weighed only eight pounds eleven ounces. There was marked opisthotonos; the left patellar reflex was exaggerated; there was a spastic condition of all the muscles; the child was entirely blind; the pulse was 200 and irregular; there were no râles anywhere in the chest. The temperature just before death reached 105.4° F. There had not been any true convulsions, although there had been twitchings. The day before his death there was a hemorrhagic discharge from one ear. The autopsy revealed a thin, purulent exudate over the entire surface of the brain, most marked on the convexity. While removing the brain an abscess was opened into on the inferior surface of the cerebellum. It was about the size of a hazelnut. The pus was greenish and very viscid, and the convolutions were visibly flattened. Both lateral ventricles were filled with this same viscid pus. The third and fourth ventricles and their communication were also distended. Permission could not be obtained to remove the spinal cord, but the membranes, detached through the foramen magnum, were infiltrated. The lungs were not consolidated anywhere, but they were very hyperæmic and somewhat œdematous. A small infarction was found in the upper border of the left lower lobe. The liver was fatty. There were no other lesions. The petrous portions of both temporal bones were examined, and found to be normal. On making cover-glass smears from the pus and staining by Baumgarten's method, very few organisms were found, and these were all diplococci. They did not resemble the pneumococcus. They were not decolorized by Gram's stain. Cultures on glycerin agar from the ventricles and cerebellar abscess showed in twenty-four hours a grayish growth, which was much more abundant than would have been obtained from a pneumococcus culture at this time. On the second day there were larger colonies than would have been present from a pneumococcus culture. In neutral bouillon the growth was more luxuriant than a pneumococcus growth. A white mouse was given a subcutaneous injection of a pure bouillon culture. It remained well. After seven days it was killed, and the blood was found to be perfectly sterile. Dr. Wollstein concluded, therefore, that the organism in this case was the diplococcus intracellularis meningitidis described in 1887 by Weichselbaum. This organism was found by Jaeger to be longer lived than the diplococcus, and where chains were formed there were longitudinal lines of division. Weichselbaum described the diplococcus as decolorized by Gram's stain, but Jaeger had stated that the smears remained stained, although the sections were decolorized. It was very difficult to demonstrate the organism in sections. Anilin oil and gentian violet, followed by acetic acid and alcohol, constituted the best stain for the sections.

A Chondro-Epithelioma (?).—Dr. Henry Power presented a microscopical section of a tumor found in the subcutaneous tissue in front of the angle of the jaw in a girl of eighteen. The tumor had been there for some time, but had grown rapidly during the last two months. It was encapsulated and had a distinct hilum. It was easily removed. On section it was quite dense. There was a considerable quantity of cartilage in the tumor, both normal and degenerated, and scattered through this was a deposit resembling in some respects carcinoma. He presented the specimen for a diagnosis.

Dr. Ewing said that he had seen a tumor from the supraclavicular region which had presented an almost identical structure. The specimen presented suggested, of course, the possibility of its being an endothelioma.

The President also looked upon the specimen as probably an endothelioma.

Globular Thrombus in the Heart.—Dr. Harlow Brooks presented a tumor removed from the right auricle of the heart of a boy. When eight years old the child had had an attack of scarlatina. About two weeks ago there was found to be considerable œdema, and he was brought to the hospital. Examination of the urine showed evidence of acute nephritis. Physical examination of the chest showed mitral stenosis and a double aortic lesion. It was found necessary to tap the abdomen twice, and to drain the fluid from the lower extremities. Bacteriological examination of the urine and of the fluid taken from the abdomen was negative. At the autopsy the remarkable feature was the heart, which was very much dilated on the right side, while the left side was contracted and the aortic segments were much thickened. The mitral valves were very indistinct, and the papillary muscle had also become fused by an endocarditis. The right auricle contained the specimen presented—a mass which appeared to be a globular thrombus. It lay in the auricle perfectly free. In the fresh state its surface had presented a slightly papular appearance. A hasty reference to the literature seemed to indicate that this was a very rare condition. He found it difficult to understand how such a body could exist in the auricle during life without having been detected by physical examination. There were many areas of hemorrhagic infarctions in the lungs.

The President said that he had never seen just such a thrombus, although he recalled having seen a pedunculated thrombus presented to this society some years ago. The explanation of these cases, as offered by Dr. Osler, was that there was originally a thrombus with a slender pedicle, and that this had been broken off.

The society then went into executive session.

Stated Meeting, December 23, 1896.

JOHN SLADE ELY, M.D., PRESIDENT.

A Pancreatic Cyst.—DR. WARREN COLEMAN presented a pancreatic cyst removed from a woman, sixty years of age, who died of pulmonary tuberculosis in Bellevue Hospital, in the service of Dr. W. Gilman Thompson, through whose kindness he was permitted to report the case. Aside from the condition of the pancreas, the details of the autopsy were uninteresting in this connection. While removing the intestine a distinct prominence was noted in the pancreatic region between the stomach and transverse colon. It was found to be a cyst with fluid contents. The cyst, with the adjacent structures, including a portion of the duodenum, was removed. It was bilocular, consisting of a large and a smaller division, communicating by a large opening. A dense band of fibrous tissue extended across this opening. The cyst contained, but was not entirely filled by, a yellowish-brown, turbid liquid, in which were numerous small, shining, flat yellow crystals. The wall of the cyst consisted of dense fibrous tissue, with circumscribed thickenings on its inner surface. The total length of the cyst was 11.5 cm., the larger division measuring 8x10, and the smaller 3x6 cm. The thickness of the wall was 2.5 cm. On the inner side of the wall of the cyst toward the duodenum was a distinct papilla with a central opening, which admitted a filiform bougie. The bougie passed out into the duodenum, through the biliary papilla. The ductus communis choledochus joined the pancreatic duct in the wall of the duodenum. At first it appeared that all of the pancreatic tissue had disappeared, but on careful dissection it was found that several small masses were still present between the cyst and duodenum, and that there was a small, single mass at the extreme tip of the smaller division of the cyst. Sections taken from the wall of the larger and smaller divisions of the cyst show that there was no definite lining membrane. The wall was composed of dense fibrous tissue, which toward the cavity of the cyst, however, formed a more or less open meshwork, in which were chiefly small-round cells and a few larger, round, flattened cells. Young connective-tissue cells were also to be seen.

From these appearances it would seem that the cyst wall was adding to its thickness from within. The circumscribed thickenings on the inner surface of the larger division possessed essentially the same structure. They contained, however, numerous pigmented cells and a few giant cells, and were plentifully supplied with blood. The pigment, when tested with potassium ferrocyanide and dilute hydrochloric acid, failed to give the reaction for iron.

Albumin and mucus were present in abundance in the cyst contents. No sugar was found by Fehling's test, nor did Gmelin's test reveal the presence of any bile pigments. The crystals already mentioned were cholesterin. In addition, numerous small acicular crystals were present. A small number of round, flattened epithelioid cells were found. A moderate number of white and red blood cells were found, but they were supposed to have gained entrance on the knife and scissors used to open the cyst.

Experiments were undertaken to determine the physiological properties of the liquid. Three test tubes were filled with a dilute solution of boiled starch, and varying amounts of the cyst contents were added to them. They were put into an incubator for twenty-four hours, after which they were examined. The tube containing the greatest amount of cyst contents showed complete conversion of the starch into sugar, while the other two contained in addition to sugar some unaltered starch and erythrodextrin. The tests used were Fehling's solution and iodine. Unfortunately lack of time prevented examination for the presence of trypsin. The emulsifying ferment was not present. Fitz ("American Text-Book of Medicine") states, however, that in cysts of long standing one or more of the ferments may be absent, and, on the contrary, Boas and Jaksch believe that liquids possessing these physiological properties are not necessarily derived from the pancreas, since other pathological liquid accumulations might possess one or all of them.

Fitz also divides cysts of the pancreas into three classes, viz.: the retention cyst, the cystoma resembling cystomata of the ovary, and a form which appears to be on the border line between these two. Both of the former varieties might be multilocular. This author says that "in typical cases from dilatation the duct (of Wirsung) may be traced from the duodenum into the cavity of the cyst, and from the tail into the same cavity. At times the duodenal end of the duct is obliterated in the immediate vicinity of the cyst wall."

The speaker said that it was somewhat difficult to assign the cyst under consideration definitely to any one of the three classes. No evidence had been left of any cause of retention, and moreover in sections from the remaining portions of the pancreas there was no retention-dilatation of the ducts. Neither could the cyst be classed with the cystomata, because of the absence of a lining membrane. It was probable, therefore, that the cyst did not belong to any of the above varieties.

Referring to the etiology, he said that the cyst was evidently of long duration from the thickness and density of its wall. In the absence of definite evidence the question of the origin of the cyst must be a matter of conjecture. The most probable theory was that the cyst was of traumatic origin, though cysts arising in this region from traumatism were not, strictly speaking, pancreatic (Fitz), as a rule. The fact, however, that the remains of the pancreas were so widely separated, portions being at either end of the cyst, and the fact that the cyst cavity communicated with the duodenum through the usual channel would seem to show that originally the pancreas was of normal size and position. The retention theory was not tenable because of the absence of a calculus or a constriction in the duct between the cyst and duodenum.

The case was interesting also from another standpoint. The urine did not contain sugar, thus furnishing clinical confirmation of the fact established experimentally by von Mering, Minkowski, Hédon, and others, that if a small portion of the pancreas remain, whether in its normal relations or grafted under the skin, glycosuria did not occur. And this confirmation was all the more remarkable from the fact that sections from the remaining pancreatic tissue showed extensive degeneration. It was unfortunate that such symptoms of pancreatic disease as probably had been present could not have been noted. But the woman had been in the hospital only a day or two, and the pulmonary affection demanded the chief attention.

THE PRESIDENT said that a short time ago he had examined the contents of one of these cysts chemically, and had found neither the amylolytic or the proteolytic ferment present, and he had not detected any change in the starch after it had stood over night. He believed that the presence of the ferment was not at all constant in the contents of such cysts. It had just occurred to him that the cyst under consideration might possibly have been the result of a necrosis of the pancreas—as a secondary degeneration. He did not see why a cyst should not form in this way as well in the other ways already referred to. Such a change was occasionally seen in infarctions. Another possibility was an abscess formation.

Dr. Coleman replied that the objection to this theory was that there was an increase in the size of the cyst without any obstruction to the outflow of the contents. He had thought first that it might be of congenital origin, but had abandoned this idea because of the wide division between the parts, making it seem that the pancreas had originally been of normal size.

The society then adjourned.

Stated Meeting, February 10, 1897.

John Slade Ely, M.D., President.

A New Microtome.—Dr. Sidney Yankauer exhibited a new microtome, constructed on a novel plan, for which he claimed several advantages (see p. 250).

Dr. F. S. Mandelbaum said that he had used this microtome before it had been perfected, and had succeeded even then in making very good sections with it. With any new microtome one felt rather awkward at first. So far as he knew, the principles of its construction were entirely novel. The instrument was not quite so compact as some others. It had one drawback, *i.e.*, when one desires to use paraffin serial sections are usually wanted, and these could not be cut with this instrument.

The President said that as he had watched the action of the instrument it had seemed to him that it was not sufficiently rigid, and that it would be apt on this account to ride over the specimen at times. But even as at present constructed it apparently did very good work.

Dr. Yankauer said that this defect had been noticed in the original model, which had been made of wood. It was his intention in future instruments to have the bars made heavier.

A New Ganglion-Cell Stain.—Dr. E. S. Steese, present by invitation, exhibited several specimens under the microscope to illustrate a new combination ganglion-cell stain. The stain, he said, was essentially a modification of the Nissl stain, but consisted of two fluids instead of one. The method of its application was like that of the Nissl stain. The tissues should be cut into small pieces, and should be fixed, hardened, embedded, and cut in the usual manner. Corrosive sublimate and formalin, two per cent., and absolute alcohol seemed to be the best of the fixing solutions. If formalin were used, the specimen should be left in contact with it for at least forty-eight hours. The staining solution consists of two parts of a one-per-cent. aqueous solution of methyl blue and six parts of a saturated aqueous solution of fuchsin. After combining these two solutions, the mode of procedure is the same as with the Nissl stain. Only a few sections should be placed in a watchglass, two-thirds full of the fluid. This should be heated until vapor is noticed to come from the surface. It should then be set aside for not more than one minute to cool. The sections should next be immediately transferred to ninety-five-per-cent. alcohol. The differentiation and dehydration take place very rapidly. The specimens would become very white, generally in one or two minutes. When that is the case, they should be immediately transferred to some clearing solution, preferably oil of bergamot or oil of origanum. The latter he preferred. The mounting solution he had used was balsam, but damar also answered very well. The only advantage over the Nissl stain was that it seemed to give more character to the Nissl bodies, making them stain a deep purple instead of a greenish-blue. The neuraxons take a very pale violet, but they can be readily traced for a considerable distance, and within them the Nissl's bodies can be easily seen. The nuclei stain a pale violet. The nucleoli stain usually a rather brilliant red; the pigment granules also stain red. The surrounding sustentacular tissue remains absolutely colorless. The round cells, for the most part, stain red, although occasionally blue. The stain is also a very good one for cellular work, contrasting very well with eosin. Certain accidental observations had led him to think that it was possible that by proper dehydration the neuraxons could be stained a decided red.

Dr. Larkin asked if this were a combination of the two methods described by Nissl—the fuchsin and the methyl-blue method.

Dr. Steese replied that it might be called so, but Nissl used these two stains separately.

Dr. Larkin remarked that in clearing up the Nissl stain the oil of origanum did not work very well.

Thrombosis of the Pulmonary Artery; Advantages of Formalin as a Preservative of Gross Anatomical Specimens.—Dr. Larkin said that in preserving specimens in the gross for cabinet purposes, it was very desirable to keep the natural color, as far as possible. Alcohol, the time-honored preservative fluid, bleached the tissues, so that, for instance, a thrombus would turn white, and after a considerable time would be for the most part destroyed. If fresh specimens were dried in the air for an hour or two, and were then immersed in a two to five per cent. solution of formalin, and left in that for any convenient time less than a week, it would be found that they could be permanently preserved in ninety-five-per-cent. alcohol, and that the normal color of the structure of the organs and of the blood would be preserved. For microscopical use it was better to use a mixture of Müller's fluid and formalin. To illustrate the advantages of this method, Dr. Larkin exhibited a specimen showing thrombosis of the pulmonary artery. The color of the thrombus had been preserved quite well, and the endothelial lining of the pulmonary artery and the color of the lung had also been preserved.

Dr. Larkin then exhibited the dura mater from a case of

Chronic Hemorrhagic Pachymeningitis.—The patient was a German, who, for three weeks prior to admission to the hospital, had suffered continuously from headache and insomnia. For the last two days he had been semicomatose. On the afternoon of the day of admission he became comatose. He had previously complained of the sensation of a heavy weight on the head. After ten days of this coma he died. On opening the cranium the dura mater appeared very dark, and on removing it, it was found that there was a chronic pachymeningitis. The blood-vessels underneath the dura were very full of blood.

Dr. Larkin next presented specimens from a case of

Chronic Pachymeningitis, removed from a man, forty years old, who had been sick for five months previous to admission. One week before coming to the hospital he had had five fits. After entering the hospital he became semicomatose, and remained in that condition for about a week. He then had ten convulsions within twenty-four hours, after which he passed into coma and died at the end of six hours. At the autopsy the greater portion of the brain was found to be covered with a large effusion of blood. At the right temporo-sphenoidal lobe was a large depression, and just above this and near the occipital lobe a second depression. The corresponding dura mater on that side presented a large clot, which fitted accurately into the depression on the brain surface. The speaker remarked that a more careful clinical record of this case, made by a competent neurologist, would have probably added to our scanty knowledge of the functions of the temporo-sphenoidal lobe. The man was a syphilitic, and had well-marked endarteritis at the base of the brain and in the coronary arteries.

Dr. Larkin then presented specimens from a case of

Rupture of the Liver.—The patient, a young man of twenty-two, had been injured by being struck by a heavy box and thrown into an area. A depressed fracture of the skull caused his death a few hours later. In addition to the injuries to the skull, the autopsy revealed several quarts of fluid blood in the abdominal cavity, with some clots, and further examination showed a large rupture of the liver. There was no fracture of the ribs or of the vertebræ.

Discussion.—Dr. Mandelbaum said that after trying various methods for preserving anatomical specimens for museum purposes, he had recently adopted and could now recommend the following method: Fresh specimens should be subjected to formalin vapor for twenty-four hours; then, without coming in contact with water, they should be placed in ninety-five-per-cent. alcohol for twenty-four or forty-eight hours. They could then be transferred to a strong solution of acetate of potassium in equal parts of glycerin and water, and kept indefinitely in that solution. For exposing the specimens to the formalin vapor, it was convenient to use a large museum jar, in which was placed some absorbent cotton moistened with a forty-per-cent. solution of formalin. The alcohol could be used several times. The formalin at first bleaches the specimen slightly, but the alcohol restores the color and brings out the blood perfectly. After this the specimen does not undergo any further change. He had succeeded in preserving some specimens, which were in all respects as good as when perfectly fresh. Another plan was to place the specimen first in a solution of formalin, instead of exposing it to the vapor, but, according to his experience, this method was much inferior to the one first described.

Dr. J. S. Ely said that about a year ago a few specimens of intestine had been treated by this method—although he did not recall whether formalin solution or vapor had been used—and while the results obtained with it at the laboratory of the College of Physicians and Surgeons had been at first very satisfactory, the specimens had been noticed to deteriorate in the glycerin. Glycerin was always an objectionable fluid, for the reason that it made the specimens so transparent. He was also sceptical regarding the method just advocated by Dr. Larkin. Although the specimen presented looked well now, he felt pretty sure that in the course of six months a great deal of the color would have left the clot, and in a year or two the color would have almost entirely gone. He had preserved quite a number of specimens by placing them first in formalin, and then in strong alcohol. He had been delighted with the results at first, but the color had faded within two years. He had tried the plan of drying the surface before immersing the specimen in alcohol, and for a year or more the color had been well preserved, but it was now fading from the specimens so treated.

Dr. Larkin said that he had noticed that the potassium acetate also seemed to make the specimens very brittle, so that they could be handled with difficulty. The color of the specimen just exhibited by him had not faded perceptibly in two months.

The society then went into executive session.

Dyspepsia and Constipation in Children.—

℞ Sod. bicarb.,
Magnes. calcin .....āā 0.25 cgm.
Pulv. nuc. vom. 0.01

S. To take in a spoonful of sugar and water morning and night for ten days of each month.

The dose of nux vomica should not surpass half a centigram per day for each year of the child's age.—Comby.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE PRINCE OF WALES A DOCTOR—PARLIAMENT—BERIBERI—ARMY MEDICAL STAFF—DEATH FROM INFLAMMABLE HAIR WASH—BRITISH MEDICAL ASSOCIATION—HARROGATE NEW BATHS—THE LATE DR. CHANCE, SIR J. C. BUCKNILL, AND DR. H. THOMPSON.

London, July 30, 1897.

The Prince of Wales has accepted the honorary fellowship of the Royal College of Physicians, and so may be added to the short list of royal doctors. There are very few precedents for the honorary fellowship. As His Royal Highness will only be an ornamental fellow, the newspapers generally congratulate the venerable college on enrolling him.

There has been a further outbreak of beriberi at the Richmond Asylum, Dublin. In June there were ten patients still suffering from symptoms and the number rapidly increased to one hundred and twenty-four, though the type is said to be mild. A temporary hospital is to be erected. A new fully equipped asylum for twelve hundred patients is in course of erection, and it is expected a portion will be opened in about a year. It was stated in Parliament that the temporary buildings are being constructed to the satisfaction of the inspectors and with every care as to sanitation. No doubt the disease is fostered by the overcrowding which has for some time prevailed in the asylum.

The under secretary for war has given a rather evasive answer to a question as to whether it had been proposed to utilize students for ambulance work in the Soudan. He has also said that there are twenty-seven candidates for the army medical examination which is held to-day. How many will pass for the thirty vacancies? It is rumored that the twenty-seven will not turn up. Even if they do, the service will still be shamefully incomplete and the existing staff overworked.

A sad death from an inflammable hair wash gave rise to another question, to which the home secretary replied that the law as to petroleum was unsatisfactory, but he made no promise to attempt amendment.

This is the British Medical week, and the business part has been transacted in London as well as an extraordinary meeting to discuss resolutions as to defence, etc. The first was to require the council to obey the mandates of general meetings. An amendment was carried by sixty-two to forty-one, that as a report of a committee on the constitution is about to be issued it is premature and inexpedient to discuss the matter. Put as a substantive motion, the carried amendment was affirmed by seventy-one to fifty-five.

Another resolution to force the council to take up medical defence was proposed by Dr. Woods, who said the council had followed the example of the "heathen Chinee," referring the matter to the branches in the expectation they would negative the proposal. An amendment by Dr. Welsford, instructing the council to carry out the decision of the meeting of 1896, was carried by sixty-five to sixty-four. A division was demanded and resulted in a vote of eighty-nine for and eighty-eight against this. Later a resolution proposed by Dr. Myrtle requesting the council to take a plebiscite by reply cards was adopted by forty-eight to twenty-five.

On the balance sheet Mr. Lawson Tait made some good play about the costs in Kingsbury v. Hart, which were concealed among association expenses. Further, Mr. Tait exposed the practices of the editor and journal committee, and said the reference committee appointed by the council was improper and illegal.

Gold medals were presented to Sir W. Foster and Mr. Wheelhouse for their services to the association. The Stewart prize went to Dr. Sims Woodhead and the Middlemore prize to Dr. Hill Griffith.

Two members were expelled for their action in taking office at the Adelaide Hospital under circumstances of which you are aware.

The report of the constitution committee mentioned above was referred back to the council, with a request that it consult the branches and reappoint the committee. So the matter is staved off once more. Next year we meet at Edinburgh and Sir T. Grainger Stewart was appointed president-elect. Various votes of thanks and other formal business being over, we adjourned for the scientific work to Montreal.

On Saturday the Duke of Cambridge went to Harrogate and opened the new royal baths. These have been erected at a cost of some £120,000, and bring Harrogate to the front as a balneological centre, for she now offers the most sumptuous establishment of the kind in the country. A number of medical men from London went to the ceremony and still larger numbers from the surrounding district. Dr. Myrtle, whose name is closely associated with the spa, where he has lived long (I remember him between thirty and forty years) gave a magnificent reception in the winter garden to some eight hundred guests, to say nothing of his house party, where his hospitality was profuse. Nor were the other doctors behind in welcoming friends and visitors, though the *doyen* of the place naturally filled the most arduous part; but he is well qualified for the task. There can be little doubt that the new buildings will add to the fame of our great sulphur spa. An excellent feature of these splendid baths is that a patient can be wheeled into the dressing-rooms in a bath chair.

Frank Chance, M.B. Cantab., R.F.C.P., who died lately at Nice, aged seventy-one years, was a scholar as well as a doctor. He gained the Tyrwhitt Hebrew scholarship at Cambridge. His edition of Bernard's commentary on Job and new translation appeared in 1864, and was reissued with an appendix in 1884. His translation of Virchow's "Cellular Pathology" was published four years earlier. He was a member of the Old Testament revision committee, on which his scholarship was highly valued. He had retired from practice for several years.

Sir J. C. Bucknill, who died on the 20th, aged seventy-nine years, was a man of literary as well as scientific reputation. As early as 1857 his Sugden-prize essay appeared. The subject was "Unsoundness of Mind in Relation to Criminal Acts." From that time he was recognized as an authority. In conjunction with Dr. H. Tuke he wrote the well-known "Manual of Psychological Medicine." You will, no doubt, remember his "Notes on American Asylums," and his essays on the medical knowledge of Shakespeare and the mad persons depicted by the bard are of general interest. The *Asylum Journal*, which became the *Journal of Mental Science*, was founded and for a long time edited by Dr. Bucknill, and he contributed much to its pages. He was appointed lord chancellor's visitor in lunacy in 1862. He was called the father of the volunteers, for in 1852 he obtained permission of the government and enrolled the first regiment of rifle volunteers, and it was in recognition of this service as well as of his medical position that his knighthood was given him; but this token of approval was not offered until 1894, about twenty years after he had retired from official work and practice. Our governments are never in a hurry to recognize scientific men's work, even when they have contributed to the welfare of the country in other departments.

The death of another retired physician occurred last week, viz., H. Thompson, M.D. Cantab., 1853, consulting physician to the Middlesex Hospital, to which of course he had filled the staff appointment and where his chief life work was done. He was senior fellow of St. John's College, Cambridge, where he took his M.A. in 1841. He published some "Clinical Lectures and Cases with Commentaries" in 1880.

DECINORMAL SALT SOLUTION.

[illegible]

SIR: The term "normal" salt solution is almost universally employed in medical literature to designate a solution of sodium chloride of six parts to the thousand. I desire to call attention to the fact that this use of the term, strictly speaking, is erroneous, and that the designation "decinormal" is the proper one for a solution of salt of this strength.

In volumetric chemistry the term normal, as applied to solutions of reagents, has a very accurate and mathematically precise signification. A normal solution is "one containing in one thousand cubic centimetres an amount of the active constituent just sufficient to combine with or replace one gram of hydrogen" (Billings). For monobasic acids and their salts (such as sodium chloride) a normal solution is one in which the number of grams in the litre is equal to the molecular weight of the reagent. The molecular weight of sodium chloride is 58.37; a normal solution of sodium chloride is one containing 58.37 grams to the litre of water. A solution of one-tenth this strength, containing 5.837 grams to the litre, is a decinormal solution (see United States Pharmacopœia, 1890, and Sutton's "Volumetric Analysis").

The highest usefulness of the term "normal," as used in chemistry, can be secured only by its employment in its strict mathematical sense. To apply it to a solution of one-tenth normal strength is misleading, incorrect, and a violation of scientific precision.

WASHINGTON, D. C. J. B. NICHOLS, M.D.

HYDRAULIC DILATATION OF THE URETHRA.

[illegible]

SIR: I desire to add my testimony of approval of the hydraulic method of dilating the urethra, which was given in the issue of July 31st, by Dr. Rumer, of Davison, Mich.

The method is a good one, and has been practised by me for some time, being first suggested by a patient of mine. It is very efficient in many of the dilatable constrictions, and is, when it will answer, much to be preferred to the common method of using rubber or metallic sounds.

If properly practised it is surprising how much force can thus be exerted and to what capacity the urethra can thus be distended.

It is of great utility in washing out the bladder and urethra in gonorrhœa and other affections. In the treatment of gonorrhœa it has been my custom to have my patient thus distend the urethra and refill through a soft catheter, if convenient, attached to the faucet of a water pipe, when considerable external force or counterpressure can be exerted, care being taken to cut off the current when the bladder is full. Repeat the process of distending the urethra by forcing out the water as before, thereby thoroughly cleansing the bladder and urethra. Lastly, refill the bladder and follow with injections of whatever medicines it is intended to use. Let the water remain as long as desired, and force out as before. This leaves the bladder and urethra in a perfectly clean and aseptic condition.

In treating strictures, hydraulic counterpressure is obtained by attaching to the ordinary bath-tub faucet

a large-sized catheter, with central fenestra, introduced within the meatus and held firmly, and using long-continued pressure in the intractable cases.

By these two methods I have had most gratifying results.

J. B. TAULBEE, M.D.

MT. STERLING, KY.

New Instruments.

A NEW MICROTOME.

BY SIDNEY YANKAUER, M.D.,

NEW YORK

I DESIRE to exhibit to the society my new microtome,[1] which is not a modification of any old instrument, but is constructed on principles which, so far as I know, are novel in microtomes. In the Thoma instrument the knife moves in a slide, and the edge of the knife, considered as a line, describes in successive cuts the same plane. The specimen is moved up through this plane a distance represented by the thickness of the section to be cut. In my instrument the specimen remains stationary, but the plane in which the knife moves is continually lowered. The instrument consists of two parts—a stand and a sliding piece. The stand consists of a triangular piece of metal, across the base of which a plate of glass is fixed. Near this is a perforation containing a vertical rod. On top of the latter is the ordinary clamp for holding the specimen. At the apex of the triangle is a small elevation, *a*, and at the top of this elevation a hole, one-eighth of an inch in diameter and one-eighth of an inch deep. This hole is made hemispherical at the bottom, and is so placed that the bottom of the hole is in the same plane as the surface of the glass, so that if the surface of the glass were prolonged into a plane this would just touch the bottom of the hole. The sliding piece is made of a piece of metal, *e*, *f*, *g*, bent at a right angle, and having at its angle and at either end a perforation through which passes a screw. These three screws have the same sized screw threads, are pointed at the ends, and capped by small spheres, one-eighth of an inch in diameter. The screw at the end of the long arm of the sliding piece carries a plate on its upper end, which is divided into one hundred parts. This screw corresponds to the micrometer screw of the ordinary microtome. On this long arm of the sliding piece is the screw, *l*, by means of which the knife (*h*, Fig. 1) is fastened in such a position that it is parallel to the short arm of the sliding piece. As the screws are of the same length, the edge of the knife must be parallel to a line joining the points of the two screws on the short arm. The small sphere at the end of the micrometer screw fits into a little hole on the top of the elevation, and the two other spheres rest on the glass plate. By sliding the piece along the glass plate, the knife moves across the specimen. After being moved back again, the micrometer screw is rotated to the left. This lowers the end of the long arm of the sliding piece, and in so doing lowers the knife a certain distance. Then another cut is made, and the knife, being now in a lower position, must cut through the specimen at a lower point.

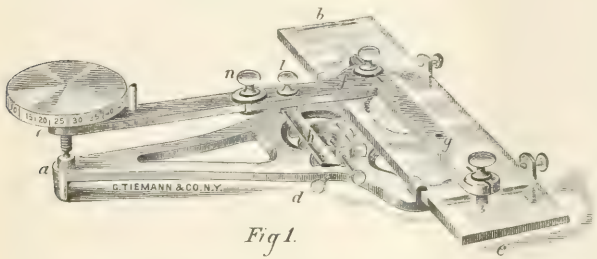

Fig 1.

An important practical question in connection with this instrument is whether the sections have parallel surfaces or are wedge shaped. The demonstration of the parallelism of the sections is as follows: Imagine a plane passing through the three points of the instrument, and call that plane the plane of the screw points. The edge of the knife is so situated that it is parallel to a line joining the upper two screw points (*f*, *g*, Fig. 1). Being a line parallel to a line in a plane, it is parallel to the plane itself, and therefore the edge of the knife is parallel to the plane of the screw points. It is immaterial in what position the micrometer screw is, for whether lowered or raised the edge of the knife is always parallel to the line joining the points of the screws on the short arm. If the sliding piece be placed upon the stand, the three points rest in the plane of the glass, because the bottom of the hole is in the plane of the glass; hence the plane of the screw points and the plane of the glass must coincide, and whatever is true of the plane of the screw points is true of the plane of the glass. Inasmuch as the edge of the knife is parallel to the plane of the screw points, it is parallel to the plane of the glass. In making the sliding motion along the glass plate, the edge of the knife remains at a constant distance from the plane of the glass; for its distance from the plane of the screw points is fixed by the micrometer screw. The edge of the knife, considered as a line moving over a plane to which it is parallel, and from which it remains a constant distance, must describe a plane parallel to the plane of the glass. Now, when the micrometer screw is turned so as to lower the long end of the sliding piece, and in that way lower the knife, the parallelism of the edge of the knife to the plane of the screw points is not altered, but the edge is nearer the plane of the screw points, and therefore nearer the plane of the glass than before. Having fixed the knife in this new position, the same conditions must be true as previously—that is, the edge of the knife must describe a second plane, parallel to the plane of the glass. As two planes parallel to a third plane are parallel to each other, the section which is included between these two planes must be bounded by parallel surfaces. True, the surface of the knife does not remain at the same angle to the plane of the glass; but as it is not the surface of the

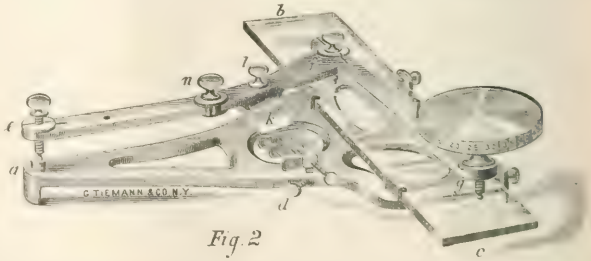

Fig. 2

[1] Read before the New York Pathological Society, February 10, 1897.

knife but the edge of the knife that determines the cutting, the difference in the angle between any two positions of the knife for a section of ten microns in thickness, which amounts to one-one-hundredth of a degree, should not make any difference in the cutting of a section. For specimens larger than one-half inch the position of the knife can be altered by a joint in the long bar, *n*.

For cutting paraffin the knife must be placed at right angles to the line of motion. For this purpose a smaller knife (*k*, Fig. 2), fitting into the same place as the larger one, is used, but with its edge standing in the other direction. As the two screws which are parallel to the edge of the knife must remain fixed, the micrometer screw and one of the other screws (*g*) must be made to change places. Owing to the principle upon which the instrument is constructed—*i.e.*, that the measurement is made at the end of the long bar, the knife being situated at the upper end—any possible error in the construction of the instrument will be divided by five at the knife. Mechanically it is just as easy—indeed, more easy—to construct a screw having ten threads to the inch as one having fifty threads to the inch.

The measurements are made as follows: The long arm of the sliding piece measures twelve and one-half inches; the knife is situated at a distance from the short bar equal to one-fifth of the entire length of the long bar; the screws have ten turns to the inch, so that a complete revolution of the micrometer screw lowers the long end of the sliding piece one-tenth of an inch. Inasmuch as the knife is situated at one-fifth of the distance from the point of rotation, the knife must be lowered one-fifth as much as the end of the long arm—in other words, for every complete rotation of the micrometer screw the knife must be lowered one-fiftieth of an inch. But there are one hundred divisions on the head of the micrometer screw; hence for every one of these divisions the knife is lowered one-five-thousandth of an inch, or five microns.

The theoretical advantages of the instrument are: (1) That inasmuch as the specimen remains absolutely fixed, the entire motion being limited to three points and one screw, the possible errors are diminished; and (2) that the errors in the knife are only one-fifth as great as any possible errors in the micrometer screw. It is important in this instrument, however, that the plane of the glass should coincide exactly with the bottom of the hole, and that the edge of the knife should be parallel to the plane of the screw points. The accuracy of the former can be easily determined by placing a ruler on the glass plate, and noticing where the ruler strikes the small projection at the apex of the stand. To determine whether or not the edge of the knife is parallel to the plane of the screw points, the ruler should be placed across the two screw points. On holding the ruler against the light, one obtains a reflex across the knife, and when the light is almost entirely cut off any lack of parallelism will be shown by an irregularity in the thickness of the band of light. If not parallel, the parts can be very easily readjusted.

The instrument is made by Tiemann & Co., of New York.

An Ephemeral Society.—A number of unmarried women in New York are reported to have formed a society for the prevention of hereditary diseases. They have registered a solemn vow not to marry any man whose family is tainted with consumption, insanity, alcoholism, or other heritable disease.

THE PERINEAL HORN—A NEW INSTRUMENT.

BY EDWIN DE BAUN, M.D.,

PASSAIC, N. J.

THIS instrument, which I have called the perineal horn, is intended to support the perineum during childbirth, and is to be used instead of the hand for bringing pressure to bear on the infant's head or presenting part and prevent the child from descending too suddenly, and also to assist in gradual dilatation of the perineal body.

Disadvantages of the Present Method.—(1) Pressure of the hand on the descending head or presenting part is rather difficult, as the surface is small, smooth, slippery, and therefore uncertain.

(2) Pressure on the perineum for any length of time produces more or less contusion with consequent

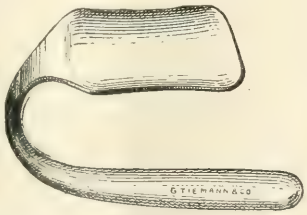

FIG. 1.

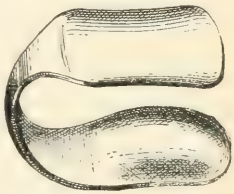

FIG. 2.

œdema, which renders the perineum very friable and therefore easily ruptured.

Advantages of and Directions for Using the Perineal Horn.—When the head impinges upon the perineum, place the concave surface of the horn against the infant's head or the presenting part, and between it and the perineum; then by grasping the handle or placing the ball of the thumb in the concavity of the handle (there are two instruments, the only difference being in the shape of the handles) you have by alternate relaxation and pressure full control of the case.

The presenting part should be allowed to descend during each pain as far as advisable, gradually distending the perineum, and finally, when the perineum is sufficiently dilated to meet the demands of the individual case, the presenting part may be pressed well up in the space beneath the arch of the symphysis pubis, thus applying the force or pressure not to the perineum but to the presenting part.

With the perineal horn the perineum may be supported by one hand, while with the other hand the forceps may, if necessary, be used with greater advantage than under the old method.

Should the perineum become partially ruptured, the extent of the lesion can be lessened by the use of this instrument.

I have used the perineal horn for about two years with very good results. The instrument is small, weighs only a few ounces, and can be conveniently carried in the pocket or obstetric case.

Messrs. George Tiemann & Co., of New York City, have very carefully carried out my ideas in making the instrument.

Serum Experiments. — Dr. Weisbecker (*Gazette Médicale de Liège*, June 24, 1897) has investigated the question as to whether the serum of convalescents has any action in an affection similar to that from which it was derived. To obtain his information he injected in two cases of typhus, five of pneumonia, and five of scarlatina serum from convalescents from the same diseases. He observed no modification, or local inflammation, or rise of temperature. Moreover, in all these cases the general state and the subjective state were ameliorated for some minutes after the injection.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 7, 1897:

	Cases.	Deaths.
Tuberculosis	202	112
Typhoid fever	30	11
Scarlet fever	7	5
Cerebro-spinal meningitis	1	1
Measles	57	0
Diphtheria	150	22
Laryngeal diphtheria (croup)	4	0
Chicken-pox	4	0

Orrhodiagnosis.—The committee appointed by the chairman of the section on practice of medicine of the American Medical Association at the Philadelphia meeting made the following report: 1. In selecting the material used in making the test the choice between (*a*) serum, (*b*) dried blood, (*c*) fluid blood, and (*d*) blister fluid, will depend largely upon whether the object be scientific research, clinical diagnosis in hospital or private practice, or public laboratory diagnosis when the samples have to be sent some distance. 2. In spite of considerable variation in technique, there has been a remarkable uniformity in the results obtained by those taking part in the discussion, and their average of about ninety-five per cent. of successes agrees with the general average of the cases, nearly four thousand, thus far recorded in medical literature. 3. Each of several methods of technique advocated may thus give good results in the hands of those thoroughly familiar with the details found necessary in each case and the sources of error to be avoided, success depending rather on being perfectly familiar with one method than on the particular one selected. 4. For routine diagnostic work even the very simplest methods may give good practical results, but for recording scientific observations those methods which are accurately quantitative should be selected. This is especially necessary in reporting exceptional cases at variance with the general results recorded or when the observations are made the basis of generalizations. 5. A complete reaction should comprise both characteristic clumping and total arrest of motion occurring within a definite time limit. For practical diagnostic work a dilution of 1 to 10, with a fifteen-minute time limit, is convenient. In any doubtful case the dilution should be carried as far as 1 to 50, or perhaps 1 to 60, and a reaction not obtainable at that point should not be regarded as perfectly conclusive. For these higher dilutions the time limit should be extended to two hours. 6. Intensity of reaction in a given serum should be estimated by determining the degree to which it may be diluted without losing its power of giving a decided reaction, as both to agglutination and loss of motion. 7. The intensity of reaction shown by the same serum is influenced by the age, condition, and virulence of the test culture, and by the composition and reaction of the culture medium. For purposes of comparison the sensitiveness of the test culture should be taken into consideration. 8. The evidence so far recorded establishes that the reaction may be delayed or occasionally may not be obtained in cases of genuine typhoid infection; and also that it may be exceptionally present in non-typhoid cases, though not in an intense degree. 9. In investigating exceptional and contradictory results the following circumstances have to be considered: (*a*) The uncertainty of clinical diagnosis; (*b*) the absence of bacteriological or other confirmatory methods of diagnosis during life, giving decisive negative results; (*c*) the possibility of overlooking typhoid infection even post mortem, in the absence of characteristic intestinal lesions when a very thorough bacteriological examination has not been carried out. 10. The modifying influences mentioned above suffice to explain the divergencies existing in the reports of different observers. Without being absolutely infallible the typhoid reaction appears to afford as accurate diagnostic results as can be obtained by any of the bacteriological methods at our disposal for the diagnosis of other diseases. It must certainly be regarded as the most constant and reliable sign of typhoid fever, if not an absolute test. The committee stated, however, that this summary, while expressing the general consensus of opinion brought out during the discussion on serum diagnosis before the section on practice of medicine of the American Medical Association, did not claim to represent exactly the individual views of any one of those who took part.

Blood Stains.—The statement has been lately published that a warm solution of tartaric acid is most efficient in removing blood stains from towels, aprons, etc. Acetic acid has long been in use for this purpose, and either acid will probably answer equally well.

The Stabbing of a Fœtus.—The *Nursing Record* published recently a case of a woman who, when six months pregnant, was stabbed twice in the abdomen. Both wounds penetrated the abdominal cavity, and, as there were signs of internal hemorrhage, the abdomen was immediately opened. The uterus was found to have been perforated in two places by the knife. The hemorrhage was checked by stitching the wounds of the uterine wall. The patient progressed very well until the third day, when pains came on, and on the next day an abortion took place. The fœtus was dead, and examination showed that the knife had penetrated the left side of the chest, and had also wounded the small intestine in two places, purulent peritonitis having resulted. The case was regarded as especially noteworthy because of the peritonitis set up by an intestinal wound in a fœtus of that age, but it might have been caused equally by the introduction of septic matter from without on the point of the knife.

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the United States Marine Hospital service during the week ended August 7, 1897:

Small-Pox—Foreign.	Cases.	Deaths.
Glasgow, Scotland	[illegible]	8
Madras, India	[illegible]	5
Rio de Janeiro	[illegible]	6
Calcutta, India	[illegible]	[illegible]
Bombay, India	[illegible]	4
Montevideo, Canada	[illegible]	5
Singapore, India	May 20th to 27th	4
Pernambuco, Brazil	May [illegible]	12
Watsa's, Russia	[illegible]	5
Sagua la Grande, Cuba	[illegible]	112
Grand Anses, Cuba	[illegible]	13
Odessa, Russia	[illegible]	1
St. Petersburg, Russia	[illegible]	7
Patras, Greece	[illegible]	4
Athens, Greece	[illegible]	14
Gibraltar	[illegible]	1
Cholera.		
Madras, India	[illegible] 12th to July 24	4
Calcutta, India	[illegible]	27
Bombay, India	[illegible] 31st to July 6th	16
Yellow Fever.		
Rio de Janeiro, Brazil	June 10th to July 3d	2
Santiago de Cuba	[illegible]	20
Panama, U. S. C.	[illegible]	3
Sagua la Grande, Cuba	July 10th to 24th	74
Mazzanillo, Cuba	[illegible]	4
Para, Brazil	[illegible]	2
Plague.		
Bombay, India	June 21st to July 6th	2

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Original Articles.

CASE EXAMINATION IN EPILEPSY.

BY L. PIERCE CLARK, M.D.,

FIRST ASSISTANT PHYSICIAN AT THE [illegible] SONYEA, N. Y.

THE desirability and necessity of having some systematic method of examining cases of epilepsy is but little recognized until one is called upon to examine many cases, either in private practice or in an institution especially devoted to the treatment of this disease. There are evidently many things which are necessary for the physician to know in regard to each particular case, aside from those included under the headings which are upon the symptom chart here submitted. For instance, it is desirable to inquire into the details of the alleged causes of the patient's epilepsy and all the possible or probable effects which any particular cause may have had upon the special case under examination. At the same time, when we have a chart upon which the principal general questions have been stated, we can very easily diverge at any point from the beaten path of routine examination.

The chart which is presented with this article was especially designed for purposes of examination of epileptics admitted to the Craig Colony. The manner in which this information is to be secured makes it easy to obtain it from the patient himself, or from the relative or friend who may accompany him. When considerable mental impairment has taken place in the patient's condition, it is almost impossible to obtain such information from the patient himself, even if he may be disposed to give it. In such cases admitted to the Craig Colony, this scheme for examination is supplemented by a blank form covering all unanswered questions, which is sent to relatives to be filled out. Obviously even all these efforts prove fruitless when the relatives and friends of the patient give vague answers to wrongly interpreted questions. The examination of epilepsy seems even more difficult to conduct than that of many other nervous diseases in which the mentality of the patient is materially at fault.

The writer desires to call attention to the necessity of making careful inquiry upon each particular heading in this chart, and he would also urge that a systematic and orderly manner of case taking is very essential in order to secure data of scientific value from a number of recorded cases.

Case Examination in Epilepsy.—Number. Name. Age. Religion. Social status. Address of nearest relative.

Family history (phthisis, rheumatism, inebriety, consanguinity, feeble-mindedness, rachitis, insanity, epilepsy, or other convulsive diseases). Number of brothers and sisters. Number of deaths in family and their cause. Habits of parents and relatives.

Personal history (prenatal causes if any, injury at birth, convulsions at birth, convulsions at dentition, diseases of childhood, scarlet fever, measles, typhoid fever).

Cause of epilepsy (syphilis, masturbation, sexual excesses, headaches, epistaxis, trauma).

Disorders of sleep in family or patient (night terrors). Paralysis in infancy.

Kind and quality of work while at school. Degree of education. Occupation and regularity of work.

First seizure. Character of disorder in consciousness. Aura. Subsequent stupor. Subsequent mental state. Subsequent paresis or aphasia. Character and duration of subsequent seizures. Time of day when attacks occur most frequently.

Manifestations of hysteria. Automatism. Hallucinations. Pallor. Flushing.

Primary movements. Order of invasion and side most affected. Sphincters. Conditions which cause or arrest attacks. Mental state in interim. Memory. Disposition. Frequency of attacks at present. Date of last attack.

Habits of patient (diet, appetite, digestion, sleep, alcohol, tobacco, narcotics).

Heart. Pulse. Circulation. Lungs. Respiration. Bodily condition. Hearing. Sight. Pupils. Speech. Skin. Bowels. Tongue. Superficial reflexes. Deep reflexes. Motion and co-ordination. Dynamometer: right, left. Stigmata of degeneration.

For women, menstruation (first occurrence, character, length of time present, regularity, relationship of seizures to menstruation or pregnancy, anomalies of menstruation at present if any).

In the beginning, as regards family history, although phthisis has been excluded by Gowers' as having no etiological significance in epilepsy, yet as epilepsy must primarily be regarded as a nervous disease of degeneration, we must take into account all hereditary characteristics which point to a degenerative condition of the family. Many German and French authors lay considerable stress upon phthisis as an hereditary factor in producing epilepsy.

Although the presence of neoplasms in family history has no direct etiological significance upon epilepsy, yet they, too, portray a certain element of family degeneracy in the organized tissues, which renders them an object of consideration in the study of the causes of any disease, especially in diseases which have such elusive and intangible dependencies as has epilepsy. The great influence of rheumatism and the gouty diathesis in the etiology of epilepsy has come to be recognized by most authorities. Although Gowers considers it of slight importance, rheumatism and gouty diathesis are diseases closely dependent upon disordered blood states, and especially upon abnormal metabolism, which, in turn, is closely associated with insufficient elimination of urea and its allied products. This latter principle has been carefully worked out by Haig, Bouchard, and others.

Inebriety: It has been estimated by competent authorities that nearly one-third of all epileptics have had intemperate progenitors, who were intemperate either before the birth of the patient or just at the time of conception.

Consanguinity has long since been recognized as an essential factor in considering family degeneracy. This condition is probably of more frequent occur-

[1] "Text-Book of Nervous Diseases," [illegible], p. 751.

rence in Europe than in America. In but one case has this factor been found to play an important part in examination of over two hundred cases admitted to the Craig Colony.

Gowers has stated that rachitis is a most potent factor in the production of epilepsy in infancy.

Epilepsy connected with dentition he would ascribe to rachitis primarily, the latter condition being based upon defective feeding. However true this may be in England, based upon this author's most extensive experience, the writer has not been able to elicit evidence to substantiate the fact that rachitis and defective feeding were the primary difficulty in epilepsy following convulsions at dentition.

Insanity again brings us to a point about which there are many mooted questions at present. It is questionable whether insanity predisposes any one to epilepsy, or gives even a basis for suggesting a hereditary characteristic which is transmissible in the form of epilepsy. When insanity is present in the family it certainly does predispose the individual epileptic to rapid and marked mental deterioration.

The significance of epilepsy in the family history should not be given so much importance as it has received in the past from the profession at large. The disease itself is not so certain of transmission, and, even if so, is not certain of direct transmission. Gowers states that the presence of epilepsy in an individual does not necessarily preclude his marriage, or if he does marry he is not certain to inflict the disease upon his immediate offspring. The author makes such careless statements in regard to this factor in producing epilepsy that the writer thinks it would bear much more consideration than he gives it.[1]

The presence or absence of other convulsive diseases, such as chorea, tic convulsif, habit spasm, occupation neurosis, etc., is desirable to ascertain, although too much emphasis should not be laid upon such information if they are found to exist.

The writer desires to call special attention to the scheme under personal history. It is extremely difficult to obtain valuable and accurate information bearing upon prenatal causes of the disease or any abnormalities existing at the labor period; for this reason alone, such information has relatively but little value. Convulsions at birth and at dentition should always be inquired into, as many persons are of the opinion that "spasms" at birth or at dentition are perfectly physiological and that they have no special significance in the child's growth or the after-development of the nervous system.

In about eighty per cent. of all cases of epilepsy admitted to the Craig Colony in which the convulsions began in early infancy they were found to be closely associated with dentition. Any abnormality of development in this epoch probably has more etiological significance than the mere process of dentition itself

In considering the infectious diseases of childhood, we would say that scarlet fever, measles, and typhoid fever represent, in the order named, the manner in which they have been the causation of epilepsy. Occasionally pertussis has been given as a cause, but in such cases it seems purely incidental. Measles is rarely found to cause epilepsy, while scarlet fever has been found in the examination of cases at the Craig Colony to be a more frequent and certain factor than have all the other infectious diseases combined. This statement is quite in accord with former statistics upon the subject.

Under the heading of causation of epilepsy, we would say that it is very difficult for one to elicit the proper information which has much or any bearing upon the real etiology of the disease. Whenever syphilis is present it is usually very easy to detect it, and seizures following syphilis of the brain are very easy of diagnosis by a careful observer. They should never be classed with true epilepsy, as they belong properly in that class known as epileptiform. Occasionally cases are seen following syphilis, in which the ravages of syphilis have been eradicated and yet convulsions continue; such resemble true idiopathic epilepsy, and have then probably become such to all intents and purposes.

Masturbation and sexual excesses have both been very much overestimated in the past, and are properly receiving at present but little attention as regards the causation of the disease, although when present such habits undoubtedly prolong and aggravate the malady.

The association which periodic attacks of headache and epistaxis have with disorders of the nervous system, as seen in epileptics, is very difficult of exact explanation, but that they do have some relationship to the disease is clearly proven in the case of six patients who were admitted to the Craig Colony, and in whom there was a record of periodic attacks of headache and epistaxis covering a period of four or five years prior to the occurrence of any seizure. Headache of this character must be differentiated from that following a slight petit-mal attack, which is frequently observed. Probably the conditions underlying both are analogous. Epistaxis frequently disappears as soon as the seizures become at all frequent. The exact explanation of the presence of both of these symptoms when they precede the development of true epilepsy it would be of great interest to ascertain by future study.

The disorders of sleep, night terrors, and nightmare, as found in the family and patient's history, are of considerable interest and give us some clew as to the sensibility of the cerebral cortex; or, in other words, they give us an idea of the manner in which the higher cerebral centres influence the motor areas, which points to the instability of the motor area of the brain in epilepsy. It is not an infrequent observation to see those epileptics who have had some disorder of sleep, either in their family history and in their own personal history, show themselves particularly liable to automatism following petit-mal attacks. It is hardly necessary for the writer to say that any paralysis from which the patient may have suffered in early infancy, if slight in character and transitory in duration, will manifest itself but little in later life. Infantile cerebral palsies are particularly difficult to detect. About eighty per cent. of all such cases become epileptics in later life. Only by close examination of the reflexes, dynamographic examination, and comparison of the extremities as to size, muscular rigidity, and tonus. can one detect the presence of a slight lesion of infantile paralysis.

The kind of education and the manner of obtaining the same are very necessary to a proper conception of the degree of mental force which the patient possessed in early life. The occupation and regularity of work which the patient has performed in the past also give one some idea of the capacity of the individual and the effects the epilepsy may have had upon the organism in causing it to depart from the normal social status of conduct.

Careful inquiry into the details of the first seizure shall be made before we can form a definite idea as to how severe the etiological factor may have been in the production of the patient's epilepsy. Quite frequently the alleged cause for the first attack is

[1] The writer deems this subject of so much importance that further comment seems necessary. In some twelve cases of epileptics admitted to the Craig Colony eight were married after their epilepsy had begun. Three were married after consultation with a physician, and in all cases a decided change for the worse was noticeable after marriage. Fortunately but few had offspring, and in most of these cases the children died in early infancy. In but one case have amicable relations been maintained between husband and wife.

only an excitant acting upon an inherited or acquired unstable organism. The kind, degree, and form of disorder in consciousness which occurred at the first seizure should be carefully studied. Just what change occurs in the material substratum underlying a disordered consciousness is still unknown; it is questionable whether this ever will be known, but in the mean time we should study all disordered states of consciousness, and ascertain as far as possible the influence which they have over the mental processes of the individual epileptic.

The great significance of the epileptic aura makes it a very important factor in the consideration of the epilepsy, as the aura generally indicates the part of the brain beginning the nervous discharge. It often is well marked at first, but dies out as the discharge gradually becomes more general or diffuse. The mental state subsequent to the paroxysm and presence or absence of aphasia or paresis following the seizure are all of great value in the study of the case. The manner in which all of the above-mentioned symptoms, connected with the first seizure, may undergo modifications in subsequent attacks should also be investigated, to aid in forming an opinion of the progress of the disease and what factors indicate a favorable or unfavorable prognosis.

There is a frequent association of hysteria in its many forms with epilepsy, especially in women and occasionally in men—which latter association, by the way, is much more frequent than is stated by text-books upon epilepsy. This heading in the scheme is a most important one for careful study, both at the primary examination and many times for months after. Many text-books state that the differential diagnosis between hysteria and epilepsy is very easy to make to one who is at all familiar with both diseases. The anomalous forms in which both diseases may be associated in the same case renders it practically impossible for the clinician to state that one disease is more pronounced than the other, which gives us the name of hystero-epilepsy.

The automatic state that usually follows petit-mal and psychic attacks, and occasionally after grand mal, is a desirable subject to investigate from the mental side of epilepsy. Frequently sane epileptics have hallucinations either of sight or hearing, without having any particular mental disturbances accompanying them. This fact has not always received as much attention as it merits. There seems to be no doubt that in many cases of epilepsy in which vivid hallucinations of sight and hearing were prominent, and also in which later in life epileptic seizures were common and frequent, these early hallucinations had some connection with the disturbed mental condition which finally culminated in the epilepsy. This statement well illustrates the place which epilepsy takes midway between a mental and true nervous disease.

The association which vasomotor disturbances have in connection with epilepsy has been a subject of considerable study, although but little definite information has been obtained concerning their interdependence. That pallor and flushing have some connection with the epileptic paroxysm is generally an acknowledged fact, although Gowers states that even though the face may be flushed it is no evidence that the brain is in a corresponding condition. Any one who has had personal experience with flushing and pallor of the normal state must be conscious of the close relationship between the vasomotor apparatus of the surface of the face and certain cerebral states, as illustrated by close study, intense application, or any kind of mental excitement.

Considerable attention should be devoted to the onset of the seizure, as to what muscles are first involved, and thus we will be able to reason *a posteriori* as to what portions of the motor cortex were first affected in the convulsive discharge. It is desirable that we should also know the muscles successively affected and the muscles which are most affected. For many reasons it is desirable that we should make careful inquiry as regards the action of the sphincters during the attack. Gowers states that these symptoms are produced in some other manner aside from the mental enfeeblement or loss of consciousness which is present in epilepsy, as some subjects always lose control of the sphincters in their attacks and others never lose control, although they may have epilepsy for years. Future study should enable us to clear up this matter, but at present it would be purely conjectural for us to formulate explanations for the presence of this disagreeable symptom. Some of the reasons put forward are that excessive muscular contraction forces the contents by a naturally unwilling sphincter; another is that the control of the higher cerebral centre is lost over the spinal-reflex centre; still another is given that the sphincters receive the initial shock of the cerebral discharge and are relaxed thereby.

Special attention should be given the examination bearing upon any particular excitant which causes an attack. Equal attention should be given to anything which arrests an attack, not only from a therapeutic standpoint, but because it enables us to know whether the patient has any hysterical symptoms attending the epilepsy. As the disorders of consciousness of epileptic seizures are almost invariably followed by a certain degree of mental impairment, we should know as much as possible about the mental state in the interim. Then, too, the memory in epilepsy is almost always impaired. This seems to be due, in a great measure, to the often reported disorders of consciousness.

We should know about the frequency of the early attacks and their frequency at present, in order that we may form a definite idea as to the prognosis and the kind and manner of medical treatment which should be given. The diet should be carefully inquired into from all points. Quite frequently after patient examination of a case, both through friends and the patient himself, one may elicit no information upon this point—when, almost by accident, the examiner will stumble upon some very important unhygienic condition which the patient and his friends thought was perfectly harmless. It is really the minutiæ of the daily life of the epileptic which give us a true insight into the malady and its treatment.

Appetite, digestion, sleep, use of alcoholics, tobacco, and other narcotics, are all obviously of great importance. The writer would warn any examiner from being led astray in obtaining information regarding disorders of digestion, as the epileptic is notoriously a hypochondriac.

In the physical examination it is unnecessary for me to emphasize the great importance of a careful study of the case from this point, as this not infrequently gives us a decided clew as to the true etiology of the disease. However the fact may be interpreted, it does seem that in the majority of epileptics heart diseases are much more frequent than many other organic lesions. The valvular lesion most frequently found is mitral regurgitation. One of the principal reasons for this condition is alleged by many writers to be due to an abnormal blood pressure, caused by the muscular contracture in the seizure.

Some writers have stated that the pupils of epileptics are unusually large and responsive to stimulation. Although the writer thinks that this statement will not be borne out by persistent and thorough examination in a great number of cases, yet some amount of attention should be paid to the pupillary reflexes in epilepsy, and these undergo various modifications before, at

the time of, and after seizures. It is doubtful whether there is much if any dependence to be placed upon the examination of the so-called deep reflexes, especially when they indicate a slight diminution. Not infrequently the condition of the reflexes of one side, as compared with the other, will show marked exaggeration. This should always be a sufficient indication for us to look for temporary exhaustion paralysis following the seizures; occasionally it is the one symptom present indicative of such a post-paroxysmal disorder. In almost all cases in which epilepsy has been existent for many years, a certain degree of disordered motion and co-ordination will be observed. Hughlings-Jackson has formulated a theory for this condition, in which he states that it is due to a gradual loss of memory impressions of motor acts in the brain, and that in each seizure there are lost successively less complex muscular movements which are never entirely regained. Notwithstanding that such a statement is very difficult of proof, it gains more credence the more carefully it is investigated.

Often an examination by dynamometer gives one the first clew to the presence of the effects of infantile paralysis, which, as mentioned before, is always very difficult to discover if the paralysis has occurred in very early life and the patient has been thereafter in strong and robust physical health. Again, it may give one a clew to a marked incapacity of one side of the body as compared with the other, without there being any cerebral or spinal disease underlying it. It may be a congenital defect, a real physical stigma of degeneration, closely allied to the well-known stigmata of asymmetries of the body.

In making a record of the stigmata of degeneration in epilepsy, we are forcibly reminded that this disease presents probably more stigmata of degeneration than all other nervous diseases combined. Sufficient explanation for this condition is still wanting. Slight errors of development which might be known as stigmata should not be given too serious attention, especially as regards the prognosis of the epilepsy. In the order of their most frequent occurrence, and probably in the order of their greatest significance, they are as follows: Palate, ear, asymmetry of cranium and face, general physical development. Although the presence of marked stigmata gives us some clew as to the probable deficient development of the cerebral centres, yet it should not influence us too much in declaring a particular case as without hope of recovery. Frequently in those cases in which stigmata of degeneration are most prominent, the least difficulty of ameliorating the severity of their epileptic seizures is noticed.

A word of warning should be given here against the possibility of mistaking stigmata of degeneration for the results of falls or injuries received by the epileptic, either before his seizures begin or after they are grand mal in character. Such injuries frequently resemble closely the various stigmata of degeneration found in the face and ears. In a measure this indicates why the deformity of the palate is most to be relied upon in making a just estimate of the influence the stigmata of degeneration have upon the patient.

Any abnormality found in the first menstruation (whether it be delayed or premature) is an essential factor in the examinations of female epileptics. It is essential to ascertain if any irregularity of menstruation is associated with the occurrence of a great number of epileptic seizures. The relationship which true epilepsy has to seizures which occasionally occur during the labor period is of considerable interest. Oftentimes a history of such association will be given to the physician by patient and friends when close observation will prove none to exist.

Although Gowers states that convulsions following the puerperal eclampsia rarely if ever lead to true epileptic seizures, at times it is very difficult to differentiate the convulsions of puerperal eclampsia from those of epileptic seizures which follow.

A CASE OF EUSTRONGYLUS GIGAS.

BY JOHN TRUMBULL, M.D.,

Concerning this large nematoid worm, which inhabits the pelvis of the kidney in certain carnivora and other mammals, Fagge says that it is "excessively rare in man." He, too, is authority for the statement that of the fourteen cases cited by Küchenmeister only four seem to be authentic, viz., those of Grotius in 1595, of Ruysch, of Blasius, and a more recent one of Moublet. The rarity of the disease is therefore sufficient warrant for immediate publication.

Being accosted on the street by a friend, who complained of a tightness across the chest, with pain which radiated down the right arm, and which, though coming on suddenly the night before with a sense of impending dissolution, had persisted till then, I insisted on having a specimen of his water, and promised to call round to examine his heart early the next morning. As the pain continued, he came to my office with a bottle of urine, and an appointment was made to see him in bed that evening.

The urine was clear and acid: specific gravity, 1.018; it gave a slight cloudiness in the upper half of the test tube when boiled after the addition of acetic acid.

My patient, Mr. E——, a former sea captain, seventy-three years of age, who has resided in Valparaiso for over twenty-two years in daily active employment, gave the following history: The night previous he had retired feeling perfectly well, but about midnight was awakened by severe pain across the lower portion of the chest, shooting down into the right arm. No shortness of breath, no pain on breathing, no palpitation or irregularity of heart action. The anguish disappeared, but the pain persisted. Questioning elicited the fact that for three or four years he has had to rise some four or five times during the night; and he has noticed that often, almost immediately after emptying the bladder, he feels impelled to rise again. The quantity of urine he admits to have been above the normal—"would half fill the vessel during the night." Now and then, after an attack of diarrhœa or cold, he remembers that the urine has been scanty and dark. He has never passed blood; never has had œdema of the feet, or puffiness of the lids, or morning headache; no pain in lumbar region; never conscious, he says, of having kidneys, lungs, liver, or heart. Three months ago, though regular in habit, he had a sudden desire one day to empty his bowel, and to his surprise passed about a quart of pure blood. Bleeding, though in much diminished quantity, recurred off and on for a month or six weeks. He had never suffered from piles.

Physical examination was purely negative, aside from a slight enlargement of the heart unaccompanied by increased arterial tension, and signs of arteriosclerosis.

While convinced that his attack had been one of angina pectoris, due probably to disease of the coronary arteries, I expected that the microscopic examination of the urine would confirm the existence of an interstitial nephritis. In going over a slide, twenty-four hours after the voiding of the urine, I had found three or four hyaline casts, when my attention was aroused by the appearance within the field of vision of a worm which was in active motion. It stretched clear across the field, and with slow motion curved anterior and

posterior extremities in opposite directions, until it assumed the outline of a figure-of-eight; when it slowly unfolded, to bend back again, or move the buccal end from side to side. It had the appearance of a diminutive angle-worm, tapering to a point at the posterior end; while at the head there was a much slighter narrowing, which ended in a circular opening. From this opening a fine thread-like process was seen to protrude now and then. Both ends were light in color, and of a faint bluish tint, though a dark line could be traced running from the mouth into the body. At the junction of the more transparent anterior portion with the more opaque portion of the body, which took place a little more than one-fifth of the distance toward the distal extremity, there were two dark spots which, in a couple of specimens found later on, had a very faint, distinctly pinkish tint. The rest of the body was of a dark, granular aspect, sharply defined, running the whole length of the worm to near the posterior end, and had on either side of the dark line which limited the granular portion a lighter transparent band between it and the cleanly cut outline of the worm.

I called my friend, Dr. Talavera, to see the worm: and from Rafael Blanchard's article on "Animal Parasites," in Salagar and Newman's "Examen Quimico y Bacteriológico de las Aquas Potables," was able to identify the worm as belonging to the nematoid group, and as being the strongylus gigas.

Valparaiso draws its main water supply from a river which flows bottom side up, so to speak, for the water is pumped from wells sunk in the Salto Valley, where there is an underground river except during the rainy season. The hill on which my patient resides has, however, for years been supplied with water from the Quebrada Verde—surface water. The possibility of a stray strongylus gigas having got in, from the water used to rinse out an empty medicine bottle, was present in my mind; but a second slide examined that evening dispelled such a supposition, for in it I found five worms, two of which were living, and nine or ten eggs. The eggs were ellipsoidal in shape, and sharpened at the poles; with small, scattered, bright points, surrounded by a dark border, which, while not so perfect as the illustrations of the ovum in Blanchard's article, yet hinted at the small openings in the fragile enveloping coat which allow of the nutrition of the developing worm by interchanges with the fluid in which it lies. The third slide gave me three worms and several ova; while in the fourth I counted thirteen worms of different sizes, and since then every slide has contained four or five.

As the patient passed the urine directly into the bottle, the large number of ova and growing worms found could scarcely have come from a few drops of water used for rinsing. On the other hand, the fact that these worms in macroscopic structure, so to speak, correspond perfectly with the strongylus gigas, which has its habitat in the pelvis of the kidney, makes it impossible for them to have come other than from the urine.

In the short article to which I have referred, the passage of ova only is mentioned, and not that of living worms. Here, however, we have a man advanced in years, with enlarged prostate, no doubt, who never succeeds in thoroughly emptying his bladder. In its albuminous fluid (is Bright's disease an essential factor in the development of this worm?) the ova receive ample nutrition, are kept at a uniform temperature, and hatch out. Thus it is that living specimens are voided, together with eggs more recently cast off by the inhabitant in the pelvis of the kidney. The hair-like process from the mouth, seen in the first living specimen, is doubtless the perforating tooth by which it makes its way through the intestinal wall to the blood-vessels, and thence is swept to the kidneys, where nutriment is to be found, indirectly, by going first through the veins to the heart. But for the fact that in the bladder there is an abundant supply of albuminous fluid ready at hand, there is no reason why the young worms might not pierce its mucous surface and thus themselves reach the kidney.

Since the above was written I have had two other samples of urine. With the first, which was only an ounce, eighteen or twenty slides failed to give me a single worm, though the sediment gave ample evidence as to the existence of a prolific breeder, it being lodged somewhere in the urinary tract. In the second specimen, just examined, I found several dead worms and pieces of worms (Fig. 1). In all of these the granules of the central portion were replaced by larger refracting masses, due to the products of decomposition, and with the slightest pressure of the cover glass these were expelled, so that the worm remained more translucent and homogeneous looking. Among the slides examined with this sediment I found the bodies shown in the accompanying illustration (Fig. 2). *A* was un-

Fig. 1.—Young Worms.

Fig. 2.—Ova and Débris of Shells.

doubtedly the vitellin membrane of an empty egg, whose pole had been ruptured for the escape of the embryo. It looked like a thin eggshell with the top cut off; and the upper lighter circle was clearly on a lower level, and formed, with the more sharply defined anterior edge, the rim of a cup-shaped hollow. The difference in thickness between the single integument in the circle and that of the rest of the mass, where the light came through two membranes, was clear and distinct. *B* was another ring of a perforated pole, with only a piece of the rest of the membrane attached. *C* and *D* are one and the same mass looked at in different positions as it tumbled about responsive to the impulse of expired air in breathing. These, and others figured in the lower right-hand corner, I take to be *débris* of broken-up eggshells.

The following gentlemen have seen my specimens, as I have been finding them, and have authorized me to cite them as to the genuineness of the case, and as to the accuracy of my representation of what was seen under a lens magnifying five hundred diameters: Dr. Olof Page, of the University of Pennsylvania; Dr. Luis Asta-Buruaga, of the College of Physicians and Surgeons, New York, and ex-interne of Roosevelt Hospital; Dr. Roberto Montt, of the University of Chile, who studied under Günther of Berlin and Levy of Strasbourg; Mr. Thomas Griffiths, associate of the Pharmaceutical Society of London. Dr. Luis Mourgues, of Paris, and Señor Cárlos E. Pórter, of the Municipal Laboratory, have already photographed one of the specimens under a high-power lens, but are waiting for a more favorable opportunity to secure better plates. They have been able to distinguish three small papillæ or nodules on the edge of the flattened mouth, and infer that the characteristic six will be found in a more perfect specimen. My representations of ova correspond with those shown in works belonging to the enthusiastic naturalist, Señor Cárlos E. Pórter.

The case merits study and a more detailed report, which will be forthcoming as soon as possible.

THE NERVOUS SYSTEM IN DISEASE.

BY JOSEPH F. EDWARDS, A.M., M.D.,

ATLANTIC CITY, N. J.,

FELLOW OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA; EX-MEMBER, STATE BOARD OF HEALTH OF PENNSYLVANIA; FOREIGN ASSOCIATE MEMBER, FRENCH SOCIETY OF HYGIENE, ETC.

SOME five years ago a girl of fourteen (a member of my own family), who had all through her life presented every appearance of robust health, after a period of close application to study commenced to present evidences of some little loss of her previously vigorous health; and one day said to me, laughingly: "I am getting paralyzed; I have no feeling in my fingers. You could cut them off and I would not feel it." For two weeks at intervals she would repeat this remark, then run off to her books or play, and no attention was given to these supposedly insignificant and meaningless complaints. It should be particularly noted that the outward, obvious evidences of departure from vigorous health were so insignificant as not to attract attention, and only to be remembered and recalled in the light of subsequent events. This young girl retired one night in her usual health. In the morning she was the sickest-looking child I have ever seen; she presented symptoms of perihepatitis, pleurisy, and subsequently double pneumonia, with death from heart failure at the end of two weeks.

In the very beginning of the illness I inquired into the condition of the different organs, to ascertain whether they would be likely to carry her through the contest. In the course of this examination, made at the onset of the disease, I was struck at finding in the urine an enormous deposit of the earthy and alkaline phosphates. Owing to personal reasons this case made a deep and lasting impression upon me, and this enormous phosphatic deposit was constantly in my mind, until, so to speak, unconsciously the question evolved itself, whether a broken-down nervous system had not preceded and made possible the development of the disease; whether we are not putting "the cart before the horse" when we teach that prostrated nervous systems are the results of disease; whether prostrated nervous systems are not always a necessary prerequisite of disease; whether that which we call the result is not, in truth, the cause.

Then I commenced to examine the urine of every patient that came before me, with the invariable result of finding a very great deposit of phosphates in all conditions of weakness or prostration, and an extremely slight deposit in disorders not attended by prostration. Then I began adding to my routine treatment for the particular disease under consideration nerve tonics or nerve sedatives, as I would find an excess or deficiency of phosphatic deposit. My results were good; so very good that I found myself securing the reputation of a "specialist in nervous diseases" among my patients.

Then I commenced to look for a theory that would fit into my observation and experience, and I elaborated the following doctrine, a brief outline of which I now submit to my professional brethren.

I have come to regard the various organs and parts of the body merely as agencies for the manifestation of a force that is generated in the nervous system. The functions of digestion, assimilation, excretion, circulation, calorification, respiration, and so on throughout the whole list of vital functions, I have come to regard as manifestations of a force generated in the nervous system. Just as one central dynamo may furnish heat, light, motion, or sound, in accordance with the construction of the agency through which the force generated in and by the dynamo is made manifest—so the stomach will digest, the kidneys will excrete, etc., not because of any power resident within or generated within themselves, but because of a latent resident power incited to activity by the force generated in the nervous system. In other words, my idea is that, while capable of function, no organ can originate within itself the force necessary for its function. The carbon points are necessary for the manifestation of the electric light; the car is necessary for the manifestation of the electric force generated for motor purposes; but neither the carbon points nor the car are capable of generating this force within themselves. The stomach, liver, spleen, kidneys, lungs, heart, etc., are all necessary for the manifestation of vital force familiar to us as life, but not one of these organs can originate within itself this force.

According to this doctrine, we would be compelled logically to regard the nervous system as the vivifying, regulating, controlling portion of the body, and so I took it to be; I did not, and do not, think that I am advancing any new physiological doctrines, but simply that I am suggesting a wider and more universal application of those already taught. So I thought, until I was staggered by the replies received by me from the professor of physiology in one of our leading medical colleges, to some queries bearing upon this question.

1. Is not the nervous system the only portion of the body capable of originating force? To this query our professor replies, No.

2. Can any organ perform its function because of a force or power originated within itself, independently of the nervous system? To this query he replies, Yes.

3. Would functional activity be possible without the force originating in and transmitted from the nervous system? To this he replies, Yes.

Now, while these replies may be in accord with physiological teaching, are they correct?

The affirmative reply to query No. 2 would seem to imply that each individual organ of the body constitutes in itself an entity capable of independent existence. Is this correct?

Does not an affirmative reply to query No. 3 imply that the voluntary muscles possess in themselves the power of contraction and relaxation independently of the nervous system, and, if this be true, why does paralysis of certain muscles follow a remote injury that interferes with the transmission of force from the ner-

vous system to these muscles? If the bladder can perform its function independently of the nervous system, why does paralysis thereof result from injury to the cord? If the heart is a complete entity, capable of independent function, why will destruction of the cerebellum arrest its action?

These queries have arisen in connection with my doctrine that a disordered nervous system is a prerequisite to the existence of disease.

It seems to me that we can make two grand divisions of all diseased or disordered conditions:

1. Functional derangements, in which there is no alteration of structure; simply a defect in quality or quantity of vital force.

2. Nutritional or organic, for in all organic diseases not mechanical the fundamental lesion is an alteration in the structure of the diseased part; hence it is a nutritional change.

If, then, the nervous system originates the force or power necessary for function; if nutrition is a function; if a normal nervous system will originate normal, and an abnormal nervous system abnormal force —does it not logically follow that an abnormal nervous system must precede an abnormal functional or nutritional derangement of any organ or part, that is not mechanical or produced by a mechanically acting cause? Let it be understood that when I speak of the "nervous system," I am not confining my reference to the brain and spinal cord, but that I include, of course, nerve tissue wherever it may be found. With this understanding, is it not true that the nervous system is the only portion of the body capable of originating force; that a normal nervous system is absolutely inimical to an abnormal condition of any remote organ; and that, in seeking to locate the seat of original departure from health, must we not look for it in some abnormal condition of the nervous system? If my contentions are correct, will it not logically follow that, with organic disease in which some organ is so damaged structurally as to be incapable of perfect function, the measure of function to be derived therefrom will depend upon the quantity and quality of vital or nervous force with which it is supplied, and that the quantity and quality of this force will depend upon the degree of integrity of the nervous system that originates it? Hence are we not compelled to fall back upon the nervous system as the ultimate element in etiology, and to start with it as the primal element in therapeutics?

A PLEA FOR THE MORE GENERAL USE OF THE ENDOSCOPE IN CHRONIC URETHRITIS.

BY ALBERT A. BERG, M.D.

NEW YORK.

THERE is probably no one affection of the many that present themselves daily to the general practitioner that deserves more careful consideration or demands more serious thought on his part than does the treatment of chronic urethritis, yet, in spite of the great frequency of this condition and its obstinacy in yielding to the usual methods of treatment, the general practitioner still clings to the long obsolete measures of internal medication or injections of one of the too numerous astringent solutions. The success of this plan of treatment we know only too well, for the numerous cases of gleet and stricture that are constantly presenting themselves to the specialist are only too forcible reminders of its inefficacy.

A short *résumé* of the local conditions found in most cases of chronic gonorrhœal urethritis will at once make clear the reason for the failure of these therapeutic methods.

Lesions of Chronic Urethritis.—An acute gonorrhœal urethritis follows one of two types: (*a*) Either it is a mild inflammation with simply a swelling of the mucous membrane and desquamation of the superficial epithelial cells; or (*b*) A more severe inflammatory process with erosion and ulceration of the mucous membrane in addition.

It is quite evident that the first class of cases, which fortunately is the more frequent, will tend to heal spontaneously. The inflammation subsides in about ten days, there is a complete regeneration of the epithelium, and the urethral canal returns to its normal state.

It is hardly necessary to do anything for this class of patients beyond relieving the burning on urination, restricting their diet and drink, and keeping their urine slightly acid. Injections, if used at all, serve only to remove the products of exudation and inflammation from the urethral canal; hence they should be as mild as it is possible to have them.

In the more severe cases the lesions produced by the inflammatory process render a complete regeneration of epithelium an impossibility, because the epithelial layer of the canal at the site of these ulcerations has been destroyed. When the ulceration heals, it does so by the process of granulation, and so the epithelium is replaced by connective-tissue cells and stroma. This can easily be demonstrated by viewing a urethral mucous membrane which is the seat of such an inflammatory process, several days after its onset, by means of the electro-endoscope. We find the mucous membrane swollen and congested, and in isolated spots ulcerated and eroded. Viewed at a little later stage, the site of these ulcerations is seen to be covered by granulations which appear as small, rounded, reddened masses. Microscopical examination of such a granulating area shows it to be made up of round cells and numerous blood-vessels; the surrounding tissue is thickened and infiltrated with similar cells, and the surrounding epithelium has changed to the pavement variety. This pathological condition of the mucous membrane of the urethra has been termed granular urethritis.

Now let us see what the results of such granulating areas in the urethra are. (*a*) When the granulations become exuberant they more or less completely block up the urethral canal, lead to stagnation of urine behind the obstruction, and so produce secondary changes in the otherwise healthy mucous membrane. (*b*) The longer these granulations persist, the larger they will become, and the more marked will the infiltration of the surrounding tissues be, for the constant passage of urine over these raw surfaces tends to irritate them and so stimulate the growth of granulations. (*c*) The result of this infiltration is a thickening of the mucous membrane and consequent narrowing of the canal.

These three factors lay the foundation of all the cases of chronic gleet and stricture, results that could possibly have been avoided if the existing conditions had been met in the right way from the very onset of the trouble.

Bumstead in his "Venereal Diseases,"[1] says: "Besides the discharge which comes from the presence of granulation tissue the narrowing of the canal, due to the thickening of the mucous membrane, has been demonstrated as capable of causing an indefinite continuance of a urethral discharge."

Therapeutics.—It becomes then a matter of considerable importance to be able to recognize and treat these granulating areas at as early a stage as is possible. Then when are we to commence the treatment;

[1] Page 341.

and how are we to treat these granulations in the proper and rational method?

It is well known that during the first or acute stage of an inflammation the less the active treatment the better for the inflammation, because the process which has been inaugurated cannot be aborted, and because any irritation of the inflamed part increases the severity of the process. Hence during the first ten days of any acute urethral inflammation we follow merely the symptomatic method of treatment. If the process is a mild one it tends to heal spontaneously and needs no interference on our part. If the process is a more severe one we wait until the acute stage has subsided, which is about the tenth day, and then proceed to aid in the healing of the ulcerations, which are the cause of the chronicity of the discharge and the subsequent malconditions in the urethra.

In considering the therapeutic measures to be applied to the conditions as outlined above, we will be most successful if we follow those lines of procedure which have proven most beneficial in similar conditions on the external surface of the body. When we deal with granulating areas here, we direct our efforts (1) to protecting the granulations from irritation: and (2) to preventing these granulations from becoming exuberant, for this interferes with their healing.

Both of these conditions are met by the use of nitrate of silver, for this produces when applied to a granulating area a protective film of the albuminate of silver, beneath which healing may occur, and, secondly, prevents the granulations from becoming exuberant. Moreover, and very important in the consideration of lesions in the urethral canal, the silver nitrate tends to soften the infiltrated area, and so favor its removal by absorption. This then would appear to be the ideal method of treatment of a granulating area, and the question now arises: How should we apply the silver? Two methods are available: (1) Flushing the urethra with solutions of silver nitrate; (2) Direct local application of silver nitrate to the granulating spots.

Let us consider the advantages and disadvantages of these two methods. In favor of the former we can only say that it requires very little knowledge to carry it out, and is easily and quickly done. But it has many disadvantages:

(*a*) It is hardly to be expected that we can reach deep-seated lesions by an anterior injection, and if deep injections are made there is the danger of forcing the fluid down through the seminal ducts into the epididymides and testes.

(*b*) The healthy urethra is, moreover, subjected to the same treatment as the diseased areas, and it is to be expected that from the constant irritation of these caustic solutions it soon takes on a reactive inflammation.

In favor of direct local application we can say that we deal directly and solely with the diseased areas. There is no danger of epididymitis or orchitis, and with a few trials the application becomes just as easy as irrigation.

Direct local treatment of the urethra is made possible by the use of the endoscope. With the aid of the Otis electric-light attachment, a complete view of the urethral canal is afforded. A positive diagnosis of urethral affections can thus easily be made, and treatment easily carried out.

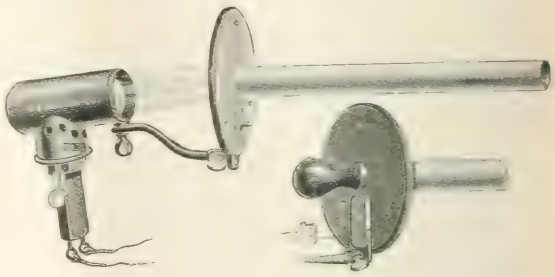
The requisites for such examination and treatment are: (1) A set of short and long endoscopic tubes: (2) a constant battery; (3) an Otis electric attachment.

1. The endoscopic tubes are made in two lengths, depending on whether they are to be used in the anterior or deeper urethra. They vary in calibre, a set of three being sufficient—10 F., 20 F., and 25 F.

They are usually made of coin silver, but may be made of hard rubber. If made of silver, it is best to have their interiors blackened so that the shining surface of the silver may not interfere by its reflection of the light.

2. The battery should be a constant one. One or two Daniell cells are sufficient. It should be strong enough to supply the lamp in the electric attachment, without consuming the film too rapidly.

3. The light: The best form of illumination is the electric light, which can be attached to the endoscopic tube, as shown in the sketch. The Otis light is a very good form. After a little practice the sun's light reflected into the tube by means of a head mirror will serve the purpose very well. The technique of the procedure is as follows:



The patient is placed upon his back. The urethra is first thoroughly cleansed by irrigating it with hot saline solution or a mild antiseptic solution, *e.g.*, corrosive sublimate 1–10,000. The endoscopic tube with its obturator, the latter serving only to facilitate the introduction of the tube, is introduced to its full length, and the obturator withdrawn. As large a tube as the urethra can comfortably accommodate is selected. The light is now thrown into the tube and a systematic examination of the mucous membrane is made, the endoscope being slowly withdrawn so as to bring the entire mucous membrane successively into view. Each ulceration is noted and located. Having thus made an accurate diagnosis of the condition of the urethra, we are ready to proceed to its treatment. The endoscope is again introduced, the obturator withdrawn, and the deepest granulation (for it is best to commence with the deepest lesions) is brought into view. An ordinary applicator, carrying a piece of absorbent cotton firmly wrapped around its end, is dipped into a twenty-per-cent. solution of silver nitrate, and introduced through the tube, touching the granulating area. Two or three such spots are treated at any one sitting. The patient is to lie quiet for fifteen or twenty minutes after such treatment, for the smarting is at times considerable. He is also to be told that the discharge will increase on the day following, but will then subside. Such applications are to be made twice a week, and in the interim the patient washes out the urethra with a mild solution, so as to keep the canal clear of pus and detritus. Each granulating spot is treated in this manner, and generally in about three weeks a complete healing has taken place.

It is to be borne in mind, however, that if a stricture has formed in the urethra the presence of this alone is sufficient to keep up a gleety discharge: hence the subsequent treatment of the stricture by dilatation

is important if a gleety discharge persists after the mucous membrane has entirely healed.

What is especially to be remarked about the direct local treatment of ulcerations in the urethra is that the healing when brought about is of a permanent character, not to be compared to the healing which has occurred in so many patients discharged as cured, but who after a slight excess *in venere et Baccho* have a return of their old trouble.

I have selected this one pathological state of the urethra for treatment by use of the endoscope merely because it is the most common, but the use of the endoscope in the urethra is by no means limited to this field. A wider and more systematic use of the endoscope in all urethral affections, from the simplest to the most complicated lesions, will lead us on the one hand to a more accurate diagnosis, and on the other to a more rational method of treatment.

A few cases will serve to illustrate the advantage of direct local treatment in urethral affections.

Case I.—E. A——, aged nineteen years, had several attacks of gonorrhœal urethritis. The attack from which he was still suffering commenced about eight months ago. He went through the regular course of internal medication and injections, but the discharge continued. About this time his physician injected into his urethra a twenty-per-cent. solution of nitrate of silver, with the effect of increasing the discharge and causing the patient considerable pain. When he came under my treatment he had in the scroto-penile urethra four granulating areas. He was at once subjected to direct local treatment with silver, and advised to flush the urethra three times a day with one per cent. of sulphocarbolate of zinc. In three weeks the granulations had entirely healed, but the presence of a stricture kept up a slight discharge, which disappeared as the stricture was dilated.

Case II.—M. T——, aged nineteen years, had one previous attack of gonorrhœa. The present attack was of two weeks' standing. The discharge was gleety, and there were some pains and tenderness in the anterior urethra. Examination with the endoscope revealed the presence of several granulation areas in the anterior urethra, and at one point considerable perifolliculitis. The granulations and folliculitis were subjected to the direct local use of silver, and rapid healing with complete cure resulted.

Case III.—A. S——, aged twenty-four years, had several previous attacks of gonorrhœa, this last attack of several weeks' duration. He had used injections faithfully, but his discharge continued. Endoscopic examination showed the presence of several granulating areas in the penile urethra. These healed rapidly under local applications of silver, with a complete cessation of the discharge.

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Pes Cavus.—The treatment consists in division of the plantar fascia, after which extension should not be made for three or four weeks, as cicatricial thickening and pain are thereby avoided. The best apparatus for after-use is a tin shoe with a divided sole plate, so arranged that the front part of the foot may be uplifted and brought into the same horizontal plane as the heel. The raising of the front part should be done gradually, as some pain incidental to the rapid method is thereby avoided. If there remain much rigidity of the tissues afterward, a second operation is advisable; or considerable relaxation of the fascia may be obtained by soaking the foot in hot water containing bicarbonate of sodium, afterward manipulating it freely and stretching the sole. The relief afforded by this simple operation of section of the plantar fascia is very considerable indeed.—Dr. Tubby, *The Clinical Journal*, April 28th.

MEDICAL SELECTION FOR LIFE INSURANCE.[1]

By Brandreth Symonds, A.M., M.D.,

[redacted]

It has often been stated that no selection is necessary for life insurance, and the argument is something like this: All men have to die. Why not therefore calculate upon the mortality of the whole population and admit them all to life insurance? Some expense, that of medical investigation and some others, are thereby saved and at the same time the opportunity is given to everybody to partake of the blessings of insurance. Something of this kind is now under trial in Germany. It is a stupendous scheme of insurance against invalidity and old age but does not contemplate life insurance. Nearly all wage earners over sixteen, whose average annual earnings do not exceed about $500, are compelled to participate. A most elaborate system of registration and espionage has been devised, so that no person of the twelve millions or more entitled to its benefits may escape the blessings thus thrust upon him. This plan has not yet been tried long enough to determine its stability; but we could draw no inference even from its success. It is a scheme forced by an almost autocratic government upon a submissive people, at least more submissive than we are. How would it succeed if applied to our life-insurance methods? A life-insurance association or company of today is, with us, a voluntary aggregation of individuals. If there were no way by which those who are below the present standard of prospective longevity could be excluded from its advantages, it would be composed exclusively of such inferior specimens. Consequently the mortality rate would be vastly higher than that of the average population. No sound person would join who could obtain insurance in a company that adopted a higher standard. Man is indeed becoming more altruistic, and the growth of life insurance itself would indicate this. But his altruism is yet far below the level which would cause him to make personal sacrifice of strength, time, and money for the benefit of some unknown stranger, perhaps thousands of miles away. He is eager to make such an offering upon the altar of his home, when he can thereby save his wife and children from want, perhaps shame and dishonor. But he would make no such effort for the unknown weaklings who as a class will surely die before their time. He wants to associate himself with those who are as strong as he is, and whose expectation of life is as great. Therefore the interests of the policy holders who are already in a company demand that none be admitted unless they be up to the standard already adopted. On this account the best medical skill is employed to watch that the maimed and halt are kept out.

Selection of risks for life insurance is not necessarily medical. For example, in some associations only total abstainers are admitted, and this precedent must be regarded as a form of selection. Again it is found that those risks who take the higher-priced policies compare more favorably with the average than those who take the cheaper ones. This form of natural selection is of decided consequence to the company, but is in no sense medical.

The points which enter into the medical judgment of a risk may be grouped under four heads: (*a*) Present physical condition: (*b*) Previous personal history as regards disease, habits, etc.: (*c*) Family record as regards disease and longevity: (*d*) Material environment, including occupation, climate, etc.

(*a*) Comparatively few of us are in a perfect phys-

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ical condition, and in many cases much judgment is exercised in determining what variation from the norm is sufficient to disqualify an applicant. Any abnormality which causes a shortened class longevity among those who are afflicted with it must be regarded as a sufficient disqualification. In some cases temporary ailments should cause a postponement until the restoration to health. It is hardly proper to pass any acute disease as trivial. An attack of apparently acute bronchitis may be the forerunner of some serious mischief in the lungs; a simple diarrhœa may be the premonition of typhoid fever. On the other hand some chronic abnormalities, though pathological, do not warrant us in excluding a case. Such a condition as a few bilateral pleuritic adhesions at the base of the lungs, if it can be determined that they are old, ought not singly to be a cause for rejection. But chronic pulmonary or pleuritic conditions are rarely presented to a life-insurance examiner, simply because most people know that such diseases are almost invariably bars to insurance.

Not infrequently a person has no idea that he has any trouble with his heart until he is rejected by some insurance examiner. It may seem hard at times to refuse some of these cases, the damage is so slight and the compensation is so perfect; but all organic lesions of the heart ought to be rigidly excluded. It is fortunately true that some of them live for many years and finally die of intercurrent disease, but unfortunately we can rarely pick these cases out of the mass. The same rule applies to some of the so-called functional diseases of the heart, such as angina pectoris, and that symptom complex known as exophthalmic goitre, in which the frequent heart action is a marked feature, although the disease is not often regarded as essentially one of the thyroid gland. On the other hand a mild acceleration of the pulse is usually found in those who are being examined. I have frequently found a pulse rate of eighty or more in my examinations. Now that is above the average even in these days of hurly-burly and must be regarded as the evidence of slight nervousness of which the applicant is unconscious, or at least says he is. Recognizing this, we do not hesitate to accept pulse rates up to ninety. When it remains persistently above this point, it becomes a factor of more consequence, as it may be the only evidence we have of beginning renal, pulmonary, or nervous disease. Or it may indicate a diminished vitality, impaired by overwork, dissipation, etc., not in itself alarming, but a serious complication of any acute disease which might happen along. But there are a few cases in which the acceleration of the pulse has lasted over many years of continuous good health, and these may be regarded as cases of personal idiosyncrasy and not necessarily unfit for insurance. The evidence, however, must be very convincing. Similar considerations influence the disposal of cases of other alterations of the pulse rhythm, such as too infrequent a pulse and intermittent or irregular pulses. As long as these conditions are present they are bars to insurance usually, and the exceptions to this rule must be very rare.

Comparatively few suspect any pathological condition of the urine until examination reveals it. They feel in good health, are vigorous and active, and they resent, as a personal insult in some cases, the statement that the condition of the urine revealed by the examination is unsatisfactory, and that they cannot obtain insurance on account of it. I know of nothing more trying to the tact, temper, and patience of the medical examiner than the endeavor to smooth some of these ruffled dignities. I have had men who knew better tell me that they ought to be accepted for insurance because, forsooth, they felt themselves to be perfectly well, and knew that they did not have any disease, although they had been told that the urine contained albumin or sugar. If such were the standard for life insurance, our duties would be very much simplified.

Let us consider this topic more in detail. I am convinced that the presence of genuine albumin in the urine is always pathological.[1] It may be due to pus or blood, the sources of which may be various, but in the great majority of cases the albumin is of renal origin. In these cases it may be temporary or permanent. If permanent, it is due to some organic change in the kidneys, which may or may not be progressive. If temporary, it is due to some inflammatory or degenerative or vascular disturbance of the kidney, which sooner or later passes away entirely, leaving no trace behind. In many of these cases the individuals are below par generally while the albuminuria lasts. In some, dietetic errors, muscular exercise, and other causes play a part. Some are convalescing from a febrile disturbance, such as a cold or a diarrhœa. During the epidemics of influenza albuminuria is very often found among those who have this disease even mildly. A favorite time for its occurrence is between the ages of fifteen and twenty-five. In a fair proportion of cases no cause whatever can be assigned. But, whatever the cause, the presence of genuine serum albumin in the urine must be a bar to insurance until it has completely and permanently passed away. I say genuine serum albumin, for undoubtedly many mistakes have arisen from confounding other substances, notably nucleo-albumin, with this. Investigators in this line have endeavored to seek out delicate tests at the cost of accuracy. Many of these tests respond to the presence of even very small amounts of serum albumin, but unfortunately they react well with some other substances, notably nucleo-albumin. This statement applies certainly to all tests in which organic acids, particularly acetic acid, are used. I feel therefore, that injustice has been done heretofore to a large class of applicants whose urine on more particular examination would now be regarded as healthy.

Similar considerations confront us when we detect the presence of sugar in the urine. Nearly all the tests for sugar are simply reduction tests, upon which other reducing substances besides sugar may act. Some reducing substances, such as creatinin, are always present in the urine, but normally in too small quantities to give a reaction. Many drugs, such as rhubarb and chloral, when excreted, act as reducing agents. At times some abnormal ingredients, such as glycosuric acid, cause the same difficulty. Now merely because the urine happens to be concentrated and the creatinin, etc., are in sufficient quantities to have a reducing power, or because the man ate a big dinner and took a rhubarb pill after it, or because he had headache and took a does of chloral the night before examination, and as the result of any or all of these our ordinary sugar tests show a reaction, it is certainly not right to refuse that man insurance on account of glycosuria. The usual tests are prompt, convenient, and sufficiently delicate, and are therefore all that we need for negative results. But if we obtain a positive reaction, we should in all cases seek to confirm it by a further accurate test, such as the phenylhydrazin test or the fermentation test.

Of course permanent glycosuria acts as a bar to insurance, but what importance shall we attach to transient glycosuria? This term should be applied to cases in which the absence of sugar is not brought about by changes in the diet, for we all know that in some cases of diabetes the sugar can be made to disappear entirely for some time from the urine simply by the thorough elimination of starches and sugars

from the dietary. No one, however, regards such an aglycosuria as healthy, and when sugar is found every time that a man relaxes from a rigid diet the case must be deemed from a life-insurance point of view as hopeless as if the glycosuria were permanent. But real cases of transient glycosuria do occur, though they are much rarer than those of transient albuminuria. These persons are more often quite stout, sometimes very fat, and their obesity is apt to run to large and pendulous abdomens. It is possible that the dragging on the liver by the falling abdominal wall, with the consequent disturbance of the hepatic circulation, may act to produce glycosuria, for in some cases this is entirely removed by the use of a snug supporting abdominal belt. Most of these cases are non-insurable on other grounds than the presence of glycosuria, but occasionally that is the only bar. In such cases, when the sugar has disappeared from the urine, it must be determined by repeated examinations that it stays away and that this absence is not due to any change in the diet. We should also seek for some cause for the temporary glycosuria, such as the ingestion of sweet wine, of candy, or of fruit in excess. Nearly all these cases should be postponed for some months, but ultimately after careful investigation a few may be accepted.

(*b*) When an applicant states that he has had any sickness, the questions that arise are: Has it left any permanent disability? Has it a tendency to recur? Is it the symptom of a serious disease?

A permanent disability would usually be found on examination, but not infrequently our methods of physical exploration will fail to reveal the latent sequel of a disease, especially if it involves the abdominal or pelvic organs. There may also be some doubt in regard to the technical skill of our examination. For these reasons a risk is usually postponed after a severe illness until such time as would make the latent sequels manifest if there were any such.

Some diseases have a tendency to recurrence, and this must be guarded against by postponing consideration of the risk until reasonable danger from this cause has passed. Each of such diseases must be considered separately, for the same rule will not apply equally to gout and appendicitis, to rheumatism and gall stones. In cases in which the disease has recurred repeatedly, insurance should be withheld either permanently or until many years after the last attack.

Certain conditions, inconsequential in themselves, are of importance as being the manifest symptoms of deeper and more serious trouble. The loss of two or three drachms of blood is a matter of no consequence, *per se*, but if it comes from the lungs it is of the greatest significance and must be regarded as very serious. In Dr. Marsh's report on the mortuary statistics of the Mutual Life Insurance Company of New York, he says: "The general ratio of the consumption mortality was 19.74 per cent., while in these cases [those in which a history of hæmoptysis was given] it is 34.92 per cent., or nearly double. . . . In less than half the cases the supposed source or cause of the hemorrhage is given, and in the majority of these it was reported as slight, as coming from the throat and nose, or as the result of an injury or excessive exertion. These explanations are mostly given in the consumptive cases, and our experience shows that statements indicating the cause of the hemorrhage are usually untrustworthy, as patients always, and physicians sometimes, are apt to delude themselves with the most hopeful views."

(*c*) When we come to look at the family history of an applicant, we are confronted with a great difficulty, the lack of accurate knowledge on many points that are essential. For instance, very few can give the full names of all their four grandparents. Ignorance on a point considered by most people so essential as this indicates even greater lack of knowledge about the duration of their lives and the cause of their deaths. We have to pierce through this haze of misinformation and imperfect knowledge as best we can. Fortunately, as a rule, the applicant for life insurance gives the most favorable presentation that he knows or does not know. He not infrequently states that his parents died of "natural causes," or still better, of "nothing serious." Of course he means to imply that the cause of death was not one of those diseases which are usually regarded as hereditary. It follows naturally that we put the worst possible interpretation on all equivocal answers in the family history. This feeling of distrust is justified by certain facts. Thus Manley investigated certain cases in which there was a family history of consumption.[1] To offset this family history policies were issued only when such applicants were physically above the standard. In spite of this superior physique, the mortality proved to be above the average. Where only the father was consumptive, the actual mortality was twenty-four per cent. in excess of the expected; where only the mother was consumptive, the actual mortality was twenty-five per cent. in excess. But now note this: where the father did not die of consumption and the mother's death was ascribed to childbirth, the actual mortality was twenty-eight per cent. in excess of the expected. In other words the death of the mother from childbirth had as unfavorable an influence upon the longevity of her offspring as her death from consumption. The most plausible and the most probable explanation of this is that these applicants made a mistake when they stated the cause of the mother's death. The idea of consumption is so dreaded, by the laity especially, that a case of it in the family is forgotten as soon as possible, or some fable about it is gradually invented, amplified, and polished, until finally it passes as the truth.

On the other hand, we tend to give less and less credit to hereditary influences in the development of certain diseases. Tuberculosis is now recognized to be a germ disease and distinctly contagious. If the dose of the tuberculous poison is sufficiently large, any man will die from it, no matter how great his strength and vitality. If the husband develops consumption, and the wife, in her tender, loving care, becomes infected by him and both die of it, surely it is not right to credit the children of these with a double inheritance of this disease. The inability to resist such a destructive process is almost the only part that is inherited, and this can largely be determined by itself from the physical examination and the previous personal history of the individual. Necessarily much precaution must be taken in selecting such cases, and only those which are distinctly above the average in both these respects should be admitted to life insurance on terms of equality with others. The possibility of any present family contagion should be carefully guarded against. A person who is living with a tuberculous relative is in much greater danger than one who has lost several relations eight or ten years previously.

A strong, although as yet unsuccessful, effort is making to prove that cancer is also caused by a parasite. At any rate the trend of professional opinion questions the capacity of hereditary transmission which was once ascribed to it. Here the pathological ignorance of the laity works to their detriment, for any fatal tumor is apt to be called by them a cancer.

(*d*) We stand on much firmer ground when we come to the occupation of an applicant, as this can seldom be disguised or concealed. Some occupations are so hazardous that no company will insure the participants

[1] "An Attempt to Measure the Extra Risk Arising from a Consumptive Family History." Journal of the Institute of Actuaries, vol. xxx.

in it at the regular rates. Good companies rigidly exclude such persons as brakemen, aeronauts, bartenders, etc., simply because the risk in them is too great. The mortality in these classes is so great that it would be unfair to the other members of the company. Among occupations which stand highest in point of longevity are those of farmers and ministers. Physicians, I regret to state, have not a longevity above the average. Modesty forbids me to mention the altruistic qualities which cause this sacrifice. Another factor in the material environment is the place where the applicant lives. Some countries are so lawless that life insurance and they are incompatible. One can hardly imagine for instance any life-insurance company doing business in Crete or Armenia or Upper Egypt. Again, some countries are so unhealthy that the mortality far exceeds what we regard as proper. In such countries insurance at the regular rates would be preposterous and is not attempted. In some of them an actuary can determine the premiums suitable to this increased mortality. Insurance can then be effected without detriment to the other members of the company.

THE CORNEA AND THE CAUTERY—THE USE OF THE GALVANO-CAUTERY IN ULCER OF THE CORNEA.

BY C. S. KOLMAN, M.D.,

IN August, 1895, *The Hospital*, a well-known English medical journal, after quoting from the address of Sir William Broadbent before the annual congress of the British Medical Association, to the effect that new remedies are added every day for the benefit chiefly of those who do not know how to employ the old ones, observed that the story of King David's sling and stone has a priceless application in medicine.

Whenever in any important respect the treatment of a disease may be believed to have been brought to perfection, the evolution of the method and its technique are worthy of record; until universally adopted the lack of novelty does not render the matter too trite for our consideration. To such perfection do I believe the management of corneal ulceration has been brought. Of necessity, a subject so selected—namely, one disease, one remedy—is restricted; it is another application of "King David's sling."

Twenty-five years ago, October 28, 1872, at the meeting of the San Francisco Medical Society, Dr. Martinache exhibited two patients, a child and a woman, whom he had cured of corneal ulcers by the application of the actual cautery, an iron probe at white heat. The *Pacific Medical Journal*, which reported the society's proceedings, questioned not the success of the treatment, but Martinache's claim to priority, stating that the cautery had hitherto been extensively used and certainly so in the treatment of pannus. Dr. J. H. Claiborne, before the New York Academy of Medicine, April 20, 1891, in an address upon the use of the actual cautery in infected ulcers of the cornea, gives the bibliography of the cautery in diseases of the eye from the time of Hipocrates, who is credited with using it to destroy growths on the inner surface of the lid. Dr. Martinache, however, appears to be entitled to the credit of first directing attention to the value of the cautery in affections of the cornea. Perhaps the application in other conditions, in trachoma, in fistula of the tear sac, etc., a revival of ancient methods of no particular utility, served to divert the attention of the profession from the specific value of the cautery in ulceration of the cornea. Claiborne stated that Martinache's discovery was adopted in Europe more generally than in America, and that the advocates of his method (in 1891) were comparatively rare in this country. The statement hardly holds good to-day. Claiborne advocated Martinache's method in infected ulcers, which he defined as the "serpent ulcer," the deep-seated, perforating ulcer which may discharge pus into the anterior chamber, and the rodent or superficial wandering ulcer which destroys the epithelium of the cornea.[1] We find advocated at this time the crude device of Martinache, platinum being substituted for iron, but the probe was heated in the spirit lamp and quickly, no doubt deftly, carried at a glowing heat to the ulcer. It was a question whether the probe should be held there until cold—a question determined in the negative by Claiborne, who deprecated the galvano-cautery on account of the increased radiation of heat and the distance of the glowing point from the surgeon's hands, thereby making accurate application more difficult. All this is referred to as to the great credit of Dr. Claiborne, who fully realized the utility of Martinache's method and practised it in those cases of corneal ulceration which were least manageable, albeit with appliances very crude and terrifying to the patient as compared with the means to-day at the command of the surgeon.

With an ophthalmic practice by no means large enough to provide many cases annually of diseases less common, with glaucoma, iritis, or even strabismus matters of anything but daily recurrence, it is my fortune to see a large number of corneal ulcers. The limitation of the hour would render impossible a recital of all seen during the past year, and I will briefly refer to only two or three recently treated at the Waterbury Hospital, as illustrating the efficacy of the cautery. For the purpose of such illustration, they are the better because long neglected, attended by destruction of almost the entire pupillary area, and by extension to the deeper tissues of the eye.

April 12, 1897, G. M——, three years of age, was referred to me by Dr. Axtelle, under whose observation, not treatment, the boy came. The history was of severe inflammation, photophobia, and neglect for a year. The condition on examination was ulceration involving the entire pupillary region, extending about half through the cornea; iris implicated, contracted, and glued to the lens. The boy was chloroformed on that same day, and the ulcerated tissue burned away with a delicate platinum point and without perforation of the cornea. His recovery has been immediate, rapid, and continuous. Slight opacity and a slight facet remain. Notwithstanding the iritic adhesions which formed during the long period of untreated inflammation, the eye will be a useful one, although it is as yet too soon to determine what degree of visual power will be preserved. This, however, does in no way militate against the fact of a rapid recovery, which began as soon as the ulcer was converted into a corneal burn.

April 14, 1897, Mrs. L. L——, fifty-three years of age, of Southbury, was sent to me by Dr. Shepard. She had suffered for many months with violent pain, relieved only by narcotics. The treatment of the eye had been wholly neglected. The pupillary area was occupied by a deep-seated ulcer, involving almost the entire thickness of the cornea, obscuring the border of the discolored, contracted iris, and pus was collecting in the anterior chamber. Any result that should relieve from further suffering and enable her to resume her occupation as a nurse was felt to be a good one, and this without hope of vision in the eye, so long and so extensively ravaged. Under cocaine the ulcer was thoroughly burned down with the galvano-cautery; at the edges first, on account of its depth; then in the

[1] New York Medical Journal, May 2, 1891.

centre, until a spurt of aqueous humor indicated that the cornea was perforated. The operation was painless until the tension was reduced by escape of fluid from the anterior chamber. A pressure bandage was applied, and she was put to bed for a few hours. Pain soon ceased, and the subsequent progress and improvement were as rapid as though it had been a healthy eye instead of one ulcerated for months that had been cauterized. In ten days the patient was sent home, eye nearly free from irritation, pus absorbed from the anterior chamber, with moderate opacity and a slight facet. The iris is moderately dilated under atropine, irregular in form, permanent adhesions having formed during the neglected progress of the disease. However slight may be the visual power regained in this case, the incalculable advantage derived by the substitution of a corneal burn for the chronic spreading dissecting ulcer could not be denied.

A third case may sufficiently illustrate the utility of cauterization of the cornea. December 27, 1896, an infant of twenty-two months was referred to me with a letter from Dr. St. John, of Hartford, from which I quote: "R. F——, whom you saw a year ago, has been brought to me, and I find: right eye, corneal abscess central; left eye, keratitis involving whole cornea and rather superficial. No atropine has been used up to now, though I learn that you gave atropine ointment a year ago, but it was used only three or four times. I have given a very bad prognosis for right eye, and a fair one for left eye, provided the child is cared for." It appeared upon inquiry that I had seen the child once about a year before, while it was suffering from phlyctenular conjunctivitis; immediate recovery not ensuing, the treatment advised was omitted after a day or two, and the case practically neglected for a year, during which time irreparable damage to the right cornea occurred. After cauterization improvement was immediate, and the case was discharged in two weeks from the hospital, where it was sent from distrust of home treatment. The resultant opacity has been far less than was anticipated. On May 7, 1897, four months later, the child came to me again, with a very threatening ulcer of the cornea of the left eye. The mother very gladly saw me destroy this with the cautery, and expressed herself as willing to take the child again to the hospital, which indicates the educating effect of experience. To-day the eye appears to be doing well, under the care which the mother has learned to give it.

Less severe instances of corneal ulceration, in which recovery has occurred entirely without opacity, can be cited in any number, but it appears that the three reported, all long neglected, and in which useless unsightly eyes were to be looked for by reason of the unfavorable conditions, make most apparent the specific value of the cautery. I am sorry not to have these three cases here for you to examine. The hour and the place are somewhat unsuitable for very young subjects, but the woman from Southbury has consented to come here, and perhaps one will answer as well as all. That the opacity of the cornea is greatest in this case is not to be wondered at, when we reflect upon the rapid absorption often observed in very young subjects.

To illustrate the tolerance of the cornea, I will ask you to examine that of a dog, whose right eye I punctured a week ago, carrying the redhot platinum point into the anterior chamber. Dr. Bland, to whom I am indebted for our subject, which he anæsthetized for this purpose, states that the animal appeared to suffer no subsequent inconvenience. You will see that the restoration is complete. A faint opacity only remains, which will evidently wholly disappear.

The perfected apparatus for cauterization of the cornea is before you. The platinum point or electrode is about one-half inch in length from its attachment to the handle. It is of wire, No. 12 or No. 14 gauge, *i.e.*, is somewhat over one-one-hundredth inch in diameter. It is retained at any desired heat by regulation of the current at the rheostat; radiation of heat is reduced to a minimum, and is far less than from a probe sufficiently large to retain the requisite heat during transferrence from the flame to the cornea. The hard-rubber handle is two and one-half inches long, and weighs one-fourth of an ounce: it is more lightly held in the fingers than a penholder; it is made without a spring or current interrupter, because the requisite pressure deflects the aim of the operator and makes more difficult the application of the platinum point at the exact spot desired. The connection is therefore made by pressing a spring, on which the foot rests. The cautery handle was made to my order about five years ago. The rheostat is a Gish rheostat; by it the degree of incandescence desired is previously fixed. The platinum point can be placed while cold against the ulcer, and instantly heated to the previously determined degree upon completing the circuit. The electric current is the Edison current of one hundred and ten volts.

My conclusions may be summarized:

To cure quickly and surely, cauterize.

Unless inevitable from previous destructions of tissue, opacities do not result.

Heat radiation is minimized by the galvano-cautery and the rheostat.

Cocaine anæsthesia is perfect and applicable except for young children.

With the electrode in contact with the cocainized cornea before the electric current is completed, cauterization can be effected without the knowledge of the patient.

THE BIPARIETAL DIAMETER AS A SYMPTOM AND DIAGNOSTIC CRITERION OF TUBERCULOSIS.[1]

BY MARK I. KNAPP, M.D.,

NEW YORK.

THEORY led me to the very interesting and highly important observation of the peculiar formation of the head in tuberculosis, which is either flat from side to side, or of a somewhat triangular form with the base corresponding to the occipital bones. However, it must not be understood that tuberculosis modifies the contour of the head which has previously been of a different shape. Speaking thus of what appears to be a pathological condition, the question arises: Which is the normal head? The word normal has a relative value, and what is normal in one case may be abnormal in the other. While the aquiline nose is normal to the Roman, the Greek one is typified as straight. My technical subdivision of the shape of the head is into three classes: The globular, the convexo-parietal (wide biparietal), and the plano-parietal (narrow biparietal).

These three conditions may be recognized either by the touch or by vision, and, best of all, by the ordinary hatter's conformator. The first class I shall omit in this paper. In running our palms along the parietal bones of any person from before backward, we perceive in the convexo-parietal (wide biparietal) (Fig. 4) abrupt eminences, corresponding to the parietal eminences, which perception is absent in the plano-parietal (narrow biparietal) head. These abrupt eminences may be present only on one side or on both sides, in which latter case they may be developed either equally on both sides or unequally. In the plano-parietal (narrow biparietal) head the examining

[1] Read before the New York County Medical Association, June 21, 1897.

palm perceives either no irregularities at all—the contour of the head (Fig. 1) running smoothly, uninterruptedly, almost in a straight line from before backward—or it may perceive apparent eminences (Figs. 2 and 3). These eminences, however, are only apparent, and on further examination they will resolve themselves into well-developed sutures of the contiguous bones; they are not abrupt, as are the eminences in the convexo-parietal head. These latter cases give the triangular-shaped head (Fig. 2). The conformator shows this best.

The statements just cited are substantiated by a few hundred cases, of which four hundred and seventy-seven were collected at the following hospitals of this city: St. Joseph's Hospital, Montefiore Home, Metropolitan Hospital, and City Hospital, in which hospitals I have taken only those cases where a diagnosis had been positively made. I have taken them as they came, from bed to bed, without selection. In all those cases I have found only seven exceptions. Neither are there included in this number about fifty or sixty consumptive women also seen at the hospitals, all of whom had the characteristic plano-parietal head, but whose shape I did not care to take, owing to the interfering hair.

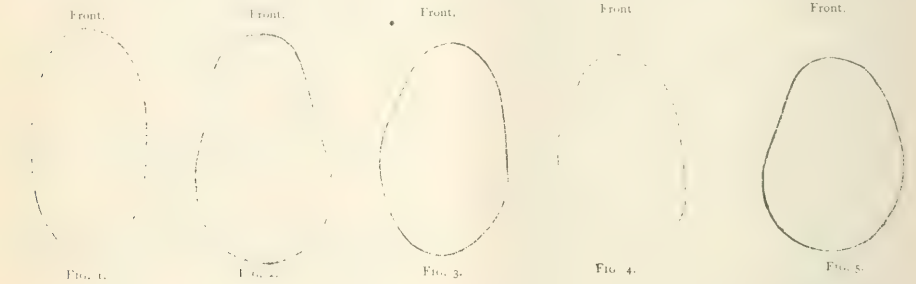

Fig. 1. Fig. 2. Fig. 3. Fig. 4. Fig. 5.

Now, taking for granted that in all cases of tuberculosis the biparietal diameter is narrow (plano-parietal head), what does it signify?

We are confronted with two facts, which certainly allow of a deduction that involuntarily forces itself upon us. On one hand we have the constant or almost constant association of pulmonary tuberculosis with a plano-parietal head, and on the other the plano-parietal head which is the product of physiological chemistry. Borrowing from algebra, we find that if *a* equals *b* and *b* equals *c*, the deduction therefrom is that *a* must equal *c*. May we not draw like conclusions in medicine? If tuberculosis is associated with a plano-parietal head (narrow biparietal diameter), and if the respective size of the biparietal diameter be caused by physiological chemistry, could we not, as in mathematics, conclude that tuberculosis and the plano-parietal head are dependent upon, caused by the same chemical agents? Such conclusion seems reasonable. And again, if tuberculosis be caused only by chemical products and if it be found only in a certain class of persons—viz., the plano-parietals—could we not furthermore conclude that tuberculosis could hardly be communicable or infectious? Why should the tubercle bacillus have selected just the plano-parietals? This is contrary to all scientific reasoning. Differing only in the dose, morphine kills all; neither do arseniuretted hydrogen and hydrocyanic acid know of exceptions as regards the biparietal diameters—both are fatal; a little more for one, a little less for the other—there is no immunity in any of these cases. Why should not its analogue hold good with regard to the tiny tubercle bacillus? As an answer, we are given the inefficiency of either the quantity or the soil. But pertinent reasoning refutes this by the very observations and statements of the same authorities. The floors, the ceilings, the walls, the mats, the draperies, the very air, our investigators say, swarm with that deadly bacillus, and yet we find people undisturbedly occupying the same apartments for weeks, months, nay, for years, during which time tons of bacilli must have been inhaled. As to that highly ductile expression of "favorable soil," are there not abundant examples of cured diseases in the midst of tuberculous surroundings? Of course, the deductions above are alluded to only as possibilities; they need further proofs. The further inference to be drawn from the plano-parietal head is that the foundation for tuberculosis is prepared for the individual either *in utero* or in early life.

The several hundred almost exceptionless cases have satisfactorily proven to me that not only is the association of a plano-parietal head in a disease important for diagnostic purposes, but that such an association is a most trustworthy symptom of tuberculosis, not only of the lungs but in general, no matter of what organ. Pathological symptoms, refer they to the respiratory organs or to the urinary apparatus, refer they to some derangement in the brain or to some hidden lesion of the tibia, if the individual have a plano-parietal head and there be no excess of urates in the urine, the lesion is a tuberculous one, whether the tubercle bacillus be present or not. Syphilis, which I have not yet studied in this relation, may possibly claim exception. Thus, not only must bronchitis associated with a plano-parietal head be looked upon as such, but as the possible precursor of phthisis.

Four cases, three at the City Hospital and one in my own practice, strikingly illustrate this assertion.

Case I.—John G——, forty years of age, came to the hospital, and the diagnosis then was chronic bronchitis; now phthisis is found.

Case II.—Coyle, thirty-eight years of age, came primarily with nephritis, but when the shape of head was taken there were positive symptoms of phthisis.

Case III.—Dennis S——, forty years of age. His left foot was amputated some years ago. At the time of my measurements he was at the hospital for pulmonary phthisis.

In all these three instances the heads were of the plano-parietal type. (I have not yet gone into the previous histories of consumptives; these histories were volunteered by the patients.)

The fourth case was in my own practice. Mr. Max K——, twenty-four years of age, came to me to be examined for admission into a society. His plano-parietal head caused me to subject him to a rigorous physical examination of his chest, which substantiated my suspicion. I rejected him and told him the reason. This caused that young man to consult other physicians, who seemingly corroborated my diagnosis, as they also told the patient, after very careful examina-

tion, that his lung was affected, not yet, however, admitting tuberculosis without bacteriological proof, much to the surprise of the patient, who claimed never to have had anything which should call his attention to the lungs. After having heard the opinion of these physicians, he came back to me for treatment, when, questioning him about his habits, he told me that for the last three years he had been having daily two or three watery, odorless movements of the bowels. Now in the absence of symptoms of nervous troubles and in the positive absence of syphilis, which the subsequent treatment also proved, and with the presence of consolidated spots in the lungs, was not that chronic diarrhœa tuberculous in character or at least strongly suspicious of tuberculosis?

As a symptom, the respective development of the parietal eminences has proven of very high value in my researches and observations; it is the ever-ready and unconcealable betrayer of men's constitution. In my own practice it not only affords evidence of tuberculosis, but gives the key to the entire nature of the patient, the key to his likes and dislikes, to his predilections, and chiefly to his diet.

Now, does the fact that a man has a plano-parietal head mean that such a man either already has or that he of necessity is doomed to tuberculosis? No, decidedly not. The plano-parietal head, the narrow biparietal diameter, as a diagnostic criterion of tuberculosis, is of importance only when a pathological condition makes itself evident—no matter of what organ—and this is not associated with excess of urates in the urine. In fact, the centenarians and the athletes recruit themselves, so far as I have studied them, from the plano-parietals.

To sum up, my researches lead me to the following conclusions: The plano-parietal head is a very valuable symptom of tuberculosis without regard to the presence of the tubercle bacillus, if excess of urates does not accompany the disease; secondly it is found only in a certain class of persons, not in all, and that consequently tuberculosis can be neither infectious nor communicable; and thirdly, and most important of all, it proves that the foundation for tuberculosis is laid in very early life, and that therefore we must direct all our efforts to watching and guiding the infant life if we want to save the adult from tuberculosis.

In conclusion, I wish to thank all the gentlemen connected with the several hospitals, and especially Dr. C. M. Cauldwell and Dr. George T. Stewart.

280 Broome Street.

Is it Ever Impossible to Pass a Catheter through the Urethra into the Bladder?—Dr. Buckston Browne discussed this question before the Harveian Society at a meeting held April 1st. He thought that it was never impossible to pass an instrument, even in the worst cases of stricture of the urethra, unless the urethra had in some part of its course actually ceased to exist. If an instrument was once passed, the case could be brought to a successful issue without any perineal incision, and, that being so, the patient was saved all the risks of hemorrhage, and of that terrible misfortune a perineal fistula. In the most severe cases of prostatic enlargement the urethra was simply tortuous. The difficulties were fully described, and instruments were shown by which they could all be overcome. In no prostatic case was it allowed that the urethra was impassable by instruments, and therefore there was rarely any real need for any form of prostatectomy or for castration. All the other forms of urethral obstruction were discussed, and the question which formed the title of the paper was answered emphatically in the negative.

SUNSTROKE, OR THERMAL FEVER, AND HEAT EXHAUSTION; THEIR TREATMENT THROUGH THE NERVE CENTRES AND THE LUNGS.

BY BEVERLEY OLIVER KINNEAR, M.D.,

NEW YORK.

If any measure acting as a preventive of heat exhaustion and sunstroke, which is also rapidly ameliorative and curative at the time of the attacks, can be discovered, the medical profession and the public will have a double control of these diseased conditions, by the ability to ward them off as well as to restore the patient to health speedily, and thus put a check to those trying and weakening effects so often visible for months and years after an attack of sunstroke or thermal fever in particular. It is with the full belief that I possess the secret of such a treatment that I now lay the subject before the profession.

Heat Exhaustion.—Nearly every one who has been compelled to remain in large cities during hot summers is perfectly familiar with "heat exhaustion." The sense of prostration, both mental and physical, the cool or cold surface of the body bathed in cold perspiration, the nausea or actual vomiting, the restlessness accompanying the symptoms, the pale face, the feeble pulse, and the tendency to faint, are probably known to all those who have endured great heat while in active professional or business labor.

It has been the writer's own experience many times during the past sixteen years, after a hard day's work in the heat, to arrive home suffering in just this way; but during the period mentioned, by the application of the measures about to be considered, he has invariably, when so seized, been enabled within an hour to feel as comfortable and refreshed as if he had not succumbed to the heat in consequence of his active mental and bodily labor in it.

And not only this, but by the use of the same means he has been enabled to obtain refreshing sleep during the hottest summer nights, and thus be ready for the work of the next day. Again, very many patients have expressed to him the relief obtained by its use, and particularly the sense of refreshment and rest when it has been applied during heated terms. This treatment is the application of cold over the spine; and by it we can dry up the cold perspiration, warm the whole surface of the body, quiet the muscular restlessness, stop the nausea, strengthen the pulse, reacquire mental and muscular vigor, and thus recover from the prostration and faintness.

By the local action of the cold on the nerve centres the excess of blood is expelled from them, and the symptoms which are due to this excessive circulation in the nerve centres disappear; while the action of the cold locally upon those nerve centres, causing contraction of the arteries, expels the blood from them, and the arteries throughout the body dilate, causing the pulse to recover its strength and the system its vigor, in consequence of the restored normal distribution of the blood.

The effect is delightful to the person treated, who in a short time experiences a renewed sense of vitality. I have induced these effects in cases of heat exhaustion hundreds of times, by this application, and am convinced that if business and professional men would supply themselves with a bag of the right kind and use it once or twice a day in hot weather, they would find themselves, if not impervious to the effects of heat, yet enabled to do their work with more vigor and with greatly lessened danger from either heat exhaustion or sunstroke.

For the average person the bag should not be more than twenty-two inches long, and four and one-quarter

inches wide, because a wider bag will chill the body, and a longer one will pass below the portion of the spinal cord in which central nerve cells are placed. These bags are made of rubber, and are fastened with a clamp at the top. They are divided into three compartments, for two reasons: in order that the ice placed within them may not all float to the top, when the bag is applied over the spine, and thus make a greater degree of cold over one section than another; and also that one, two, or three of the compartments may be used, as may be necessary in the treatment of the case at hand.

I am of the opinion that excessive heat of the atmosphere, especially moist heat, which prevents the natural evaporation from the skin, draws the blood in excess into the nerve centres; and in heat exhaustion, those centres in particular which preside over the vasomotor functions. In consequence of the hyperæmia of these centres, the blood leaves the surface of the body and goes to the internal organs, including the nerve centres in the spinal cord, giving rise to the muscular restlessness, the cold perspiration, the nausea, and the faintness. If this be so, it can be easily understood how cold applied locally over the spinal cord and the knots of nerve tissue upon each side of the spine, known as the sympathetic ganglia, will act to overcome the condition by expelling the blood from the nerve centres, preventing them thereby from exercising their function abnormally. That the treatment does so there is a great mass of evidence from its use in a large variety of diseased conditions. The temperature of the body falls very low in severe cases of heat exhaustion, and the usual treatment now adopted by the regular profession is the use of external heat by hot-water baths, the hypodermic injection of atropine, strychnine, and digitalis, in order to stimulate the heart and start the general circulation; but these remedies are often insufficient either to ameliorate or to cure in serious attacks; while the cold over the spine will always act, and act promptly, and it can be aided in its action by applying hot-water bottles to the surface of the body until the circulation has recovered its full strength and the patient his normal tone. Besides this, it is much more easy of application than hot baths in cases of prostration, and it is not at all distressing, but at once refreshing to the sufferer.

In filling the ice bag with finely chopped ice, the lower compartment should be first filled to the bottom of the second, then the second one to the bottom of the first, and lastly the top one to the line of the thick piece of rubber across which the clamp is placed. The clamp should then be screwed tightly on and the bag held in the warm hands for a few moments, to expel the latent air that is held in the ice, and directly the air bulges out the bag the clamp should be unscrewed sufficiently to enable it to escape entirely, and when this is done the appliance is ready for use, and may be placed directly along the centre of the spine, from the line of the shirt collar to the full extent it will fall down the spine. It may be kept on—being refilled every two hours—until the circulation is fully re-established and the sufferer has recovered a good modicum of strength; it may then be removed, and used one hour in every four, until the patient feels as well as usual. During the rest of the hot season, and to prevent further attacks, it would be well to use a bag once a day for an hour until the cool weather sets in; taking care that during the use of the treatment the bowels are kept freely moving and well cleared from all fecal matter by the biweekly use of large enemas of soap and hot water.

Meat, except upon cool summer days, is hurtful to everybody, and an unirritating and farinaceous diet should be enjoined.

Sunstroke, or thermal fever, is a condition induced by heat which is just the opposite of heat exhaustion, as it is accompanied by very high temperature, apparent expansion of the arteries throughout the system, flushed face, eyes injected with blood, and congestion of the brain, with either total unconsciousness, delirium, or mental confusion. There may be convulsions, there is often vomiting, and frequently there are diarrhœa and intense muscular restlessness.

The direct action of the sun is not necessary to induce these symptoms, but simple exposure to long-continued and great heat. The worst attacks frequently take place at night, and we believe that one of the causes of this is that the patient goes to bed with an already congested brain, and, the prone position enabling the excited heart to send more blood to the brain with less effort than in the erect posture, the arteries in the brain expand still more widely than they have expanded in the daytime, and the so-called sunstroke may be then more likely to result.

The breathing is apt to be irregular and labored, and at times stertorous, denoting to our observation excitement of nerve centres, and some hyperæmia of the lungs.

The sequelæ of this disease denote that there is left behind a condition of cerebral hyperæmia, which may become chronic and interfere for the rest of the patient's life with his work and his enjoyment. These after-effects consist of pain in the head, feebleness of memory, heat of the head when exposed to any unusual heat in winter as well as in summer, stiffness of the muscles of the back of the neck; and in recovery in very bad cases there may be symptoms of chronic cerebral inflammation, also a tendency to convulsions.

The object of treatment is of course to lower the temperature as quickly as possible, and the chief measures now adopted are the cold bath, rubbing with ice, perhaps blistering, shaving the head, and the internal use of antipyrin.

There is no doubt that in thermal fever the brain is intensely congested and the circulation at the same time is very active; thus the ice to the head, which is also always used, is an excellent measure. But all of these together cannot compare, in my estimation and in my experience, with heat applied over the last four cervical and first four dorsal sympathetic ganglia, to overcome the congestion in the head and brain by contracting the dilated arteries in these regions.

The effect of heat so placed in a double-columned hot-water bag is at once to begin to lower the temperature, cause profuse perspiration, slow the rapid action of the pulse, and restore the patient to consciousness, if in a state of stupor; or to his senses, if delirious.

One case in New York, under my own care, I treated by this application with immediate success. The patient was suffering from pronounced sunstroke; his temperature was 105° F.; the pulse was full and bounding at the wrist and in the temporal arteries; the head was very hot, the face was flushed, the eyes were injected, and the man was in a condition of semistupor. Heat was applied over the lower cervical and upper dorsal vertebræ, with the effect that in three hours the temperature had fallen almost to normal, the pulse was quiet, the man was quite rational, and had enjoyed some sleep. The application was used for half an hour every third hour through the night, and at my morning visit I found the attack quite conquered.

In a second case, treated by correspondence, in Elizabeth, N. J., the patient, a physician, after treatment for several days, found that he was going down hill, with the fever unsubdued and the head symptoms growing worse. His wife, a very intelligent woman, treated him with the double-columned hot-water bag,

and in half an hour the temperature began to fall and he broke out into a profuse perspiration. Twenty-four hours' use of the bag, at stated intervals, sufficed to relieve him completely.

A third patient was the managing editor of one of the large New York religious papers, and his case is an exceedingly interesting one, because, although it was chronic, it yielded readily to treatment by the double-columned hot-water bag. Having been overcome by the heat several years ago, and laid up for some time in consequence, he apparently fully recovered, but during the following summer, directly the very hot weather set in, he was obliged to rest several days by reason of congestion of the brain, and toward the end of the season another attack followed. These attacks took place each season, until, in 1892, during one of them he put himself under my care. He was in a semiconscious state when first visited, with a very red face and injected conjunctivæ, and could be aroused to talk only for a few minutes at a time, when he would relapse into a state of partial stupor; there was no rise of temperature, but the condition was evidently dangerous.

The double-columned hot-water bag was at once applied over the proper segment of the spine, and before half an hour had elapsed, the face had lost its flush, the mind became more active, and the redness of the eyes disappeared.

In twenty-four hours the patient resumed work, and he has had only one return of the trouble since, when the prompt application of the hot-water bag speedily relieved him.

It is the writer's opinion that if every hospital surgeon in the large cities would supply himself with a number of double-columned rubber hot-water bags, eight inches long and four and a quarter inches wide, for prompt use in cases of thermal fever, he would have much less trouble in treatment, and much more speedy recovery from such seizures; and the unpleasant sequelæ of the attacks would be to a large extent prevented.

It is my conviction that the cause of the high temperature in thermal fever is intense hyperæmia of the brain and the spinal nerve centres, but particularly of the brain, overcoming in this organ almost completely the normal contracting power of the sympathetic ganglia; therefore the most energetic and efficient treatment is to stimulate the cervico-dorsal sympathetic centres, by means of heat, to such powerful action as to overcome the abnormal action of the cerebro-spinal vasodilator centres, thus contracting the arteries in the congested areas, distributing the blood in normal quantity throughout the body, and so not only quickly subduing the dangerous symptoms, but also restoring the natural vigor of the patient.

As the sequelæ invariably denote hyperæmia of the brain and upper body, I advise the use of the spinal ice bag, filled in the two upper compartments and applied from the line of the shoulder blades down the spine to the line of the waist. This treatment will dilate the arteries in the lower body and induce healthy metabolic action in the digestive and secreting organs, give vigor to the muscular system, and at the same time withdraw the excess of blood from the brain and upper body, and allow the unduly expanded arteries in these regions to contract to normal. The hot-water bag may also be used once or twice a week over the cervico-dorsal region so as to assist in the contraction of the arteries required to accomplish complete recovery.

By these measures the after-results of sunstroke, such as the inability to bear heat without cerebral discomfort or pain, the headache, the failure in general strength, the stiffness of the muscles of the neck which sometimes results, the vertigo, loss of memory, inability to concentrate thought, and the nervous irritability, may be readily and speedily overcome; and the patient will be able to resume work, and enjoy life as formerly.

There is another remedy which we find most efficient in preventing and, if they are present, rapidly checking the disagreeable symptoms induced by heat, and that is the inhalation of oxygen. It will almost instantly remove the fulness of the head or the headache induced by heat; it will dry up at once the moist perspiration, warm the body, and invigorate the muscles; and the sense of glow from its use, with the increased feeling of vitality, is most agreeable and refreshing; it deepens the natural respiration for some hours after its use, and it makes the pulse full and incompressible. I speak here from personal experience.

I would also strongly advise its use to overcome the after-effects of thermal fever; to relieve the headache, strengthen the digestion, stimulate the heart, and increase nutritive processes in general; and, if it were used daily by those who have a tendency to "blood to the head" in hot weather, I have no doubt that rapid and continual relief will be obtained.

Oxygen to be efficient must be pure, and it must be combined with a gas of lighter specific gravity also, in order to obtain successful results from its use, as pure oxygen alone is too dense in its specific gravity for absorption by the pulmonary capillaries, and gives rise to too great local oxidation, if the mucous membrane of the bronchial tubes is at all irritable. The gas which has been found most efficient for the dilution of the oxygen is nitrous monoxide; and the formula used by the London Oxygen Hospital is considered by all authorities upon oxygen as the best. It consists of two parts of pure oxygen, one of nitrous monoxide, and one per cent. of electrified oxygen, or ozone, to keep it fresh.

In hot weather it is best for all men to live on a light and unstimulating diet; to avoid in every way either great mental or bodily fatigue, as well as unusual excitement from any cause, and all excesses in any form whatever.

Following such rules in summer time is in itself a great preventive of attacks of either heat exhaustion or sunstroke; therefore the person who is temperate in all things during the hot season has the best chance of escape.

In conclusion I would recapitulate as to the chief causes of thermal fever and heat exhaustion. The causes of the latter I believe to be hyperæmia of nervous centres, but especially of the sympathetic ganglia; as only by excessive function of these special knots of nerve tissue can the arteries become contracted throughout the body and the temperature fall below the normal.

In sunstroke we have excessive circulation in and increased function of nerve centres, but so great is the stimulation of the vasodilator centres that the function of the vaso-constrictors or sympathetic ganglia is almost completely overcome, especially those controlling the circulation in the upper body, head, and brain; so that there are both an active circulation in these parts, in most cases, and excessively dilated arteries, inducing excitement of the brain and confusion of thought, but if of more serious form causing stupor or coma.

The best treatment for sunstroke is to overcome the cerebro-spinal excitement by contracting the arteries, through the agency of the sympathetic; and for heat exhaustion, to expel the excess of blood from the spine and sympathetic ganglia, by means of the spinal ice bag, thus restoring the general circulation and relieving the excited centres of their congestion.

The temperature of the water used in the spinal hot-water bag should not exceed 120° F.

202 West One Hundred and Sixth Street.

SOME PRELIMINARY OBSERVATIONS ON THE APPLICATION OF THE KASHIDA-OGATA MEDIUM TO THE EXAMINATION OF DRINKING-WATER.

By ARTHUR J. WOLFF, M.D.,

AND

JOHN B. McCOOK, M.D.,

HARTFORD, CONN.

The recently published observations of Dr. K. Kashida,[1] under the direction of Professor Ogata, at the Royal University of Tokio, Japan, on a new and original medium for the differentiation of the bacillus coli from the typhoid bacillus, attracted our attention to its probable usefulness for the detection of these organisms in drinking-water. The very distinct reactions which can be produced by the medium, and the rapidity with which the necessary operations can be carried on, render it a promising field for investigation.

Preparation of the Medium. — Production of the litmus solution: Twenty grams of common litmus are completely exhausted with water; this liquid is carefully filtered; the resulting filtrate is now evaporated on the water bath to an extract, the latter being neutralized with acetic acid. The evaporation is now carried on until all the acid is driven off, and the resulting extract is then exhausted with a large quantity of ninety-five-per-cent. alcohol. The alcohol removes all the acetate of potassium formed and at the same time the red coloring matter of the litmus. When the alcohol comes through the filter devoid of red color, the blue residue left on the filter is allowed to dry, and then distilled water is poured upon the filter in such amounts as to produce a saturated solution of blue-litmus extract. This is preserved in flasks properly plugged with cotton and carefully sterilized. A one-and-one-half-per-cent. solution of agar in neutral bouillon is now prepared, and to this are added two per cent. of milk sugar, one per cent. of chemically pure urea, and when these are completely dissolved, thirty per cent. of the above litmus solution; the mixture is now carefully filtered and sterilized. This completes the Kashida medium. Before the addition of the litmus the reaction of the material is to be carefully tested and properly corrected, as upon this depends to some extent the accuracy of the results. With the medium as above prepared, one can very readily confirm the conclusions of Kashida in the article mentioned.

Experiments with our Hartford water supply have been productive of surprising and satisfactory results, which point to this medium as a possibly valuable addition to our methods of examination.

Cultures were first made with the tap water upon Petri plates, and these incubated at the body temperature, no change being observed in the color of the medium, except that a colony was discovered which produced a deeper blue than that of the surrounding medium. An examination of this colony showed it to be a pure culture of a bacillus which at the present time is being completely investigated.

Definite quantities of the tap water were contaminated with coli and typhoid bacilli, both alone and in mixture. The following are some few of the results obtained: One-half cubic centimetre of tap water was contaminated with a loop from an agar culture of typhoid bacilli and a loop from a similar culture of bacillus coli communis; this mixture was plated with about ten cubic centimetres of the Kashida medium and incubated. Examined after the lapse of twenty-four hours, the medium exhibited a distinct acid reaction and a profuse gas formation, as shown by a diffuse mottling of the medium with bubbles. After seventy-two hours the medium commenced to change to a blue color, due to the formation of ammonia during the decomposition of the contained urea. This change did not occur until after seventy-two hours, and at the same time the bubbles commenced to diminish in number and size.

A mixture was made containing one loop each of coli and typhoid from agar, these being placed in one cubic centimetre of tap water and plated with ten cubic centimetres of the medium. In twenty-four hours this showed a marked acid reaction and the production of gas. After the lapse of fifty-four hours no change in color was observed, but decided diminution in the number of gas bubbles. In seventy-two hours a beginning alteration of color to blue was marked, and during the next twenty-four hours the change to deep blue was complete.

Ten cubic centimetres of the Kashida medium were inoculated with one-half cubic centimetre of the following mixture: Tap water, fifty cubic centimetres; one loop from agar culture of typhoid; one loop from agar culture of coli bacilli. One loop of this mixture was placed into ten cubic centimetres of tap water and plated. In fifty-four hours this plate showed a marked acid reaction, with profuse gas production. In this there were colonies, some appearing white, while others showed a distinct blue color. (Bouillon cultures of both were made.) After seventy-two hours the blue color had replaced the red, the former being much deeper than in the original medium.

Two specimens were prepared in the following manner: One-half cubic centimetre of tap water was mixed with ten cubic centimetres of the medium and plated. At the end of fifteen hours these plates showed very slight mottling of red here and there, but when examined on a white surface this red coloring was very indistinct. There was a very profuse growth of bacteria on the plates, but no formation of gas bubbles whatever in any of them. After thirty-nine hours they had not perceptibly changed; no gas was to be discovered in either. At the end of seventy-two hours one of these plates showed a loss of the red tint and the production of a yellowish-white appearance in certain zones of the plate. Another specimen showed a still deeper shade of red, but which by transmitted light mostly appeared of a blue color with some few yellowish-white areas.

Other specimens of tap-water were examined in tubes filled with the medium, the results being in no material manner different from those already described. Specimens of water which were known to have been contaminated with sewage were next employed, and in each case the results would seem to correspond with the degree of contamination of the water.

Comparing our results with those obtained with other media, we are led to feel encouraged in the belief that Kashida's medium may have an important future in water examinations. Certain questions, however, have already forced themselves upon us: May there not be other bacteria than the coli bacillus, existing in water, which produce the same changes of color and similar gas formation? Our observations, however, thus far show that in any case in which an atypical reaction occurs, the microscope clears up the doubt in a few minutes without any tedious technical process of isolation.

Bacteriological Laboratory of the Board of Health, Hartford, Conn., August 5, 1897.

[1] "Differenzierung der Typhusbacillen vom Bacterium coli commune durch die Ammoniareaction. Aus dem hygienischen Institute der Kaiserlichen Universität zu Tokio," etc., von Dr. K. Kashida. Centralblatt für Bakteriologie, etc., Bd. xxi., No. 20-21, June 24, 1897.

The Sightless Ones.—It is stated that there are 1,000,000 blind people in the world, or one to every 1,500 inhabitants.

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE ELIMINATION OF LEPROSY-BACILLI FROM THE BODIES OF LEPROUS SUBJECTS.

WHILE formerly the view was almost universally held that leprosy is transmitted by inheritance, it had long been suspected that the disease is contagious. It was not, however, until the discovery of the leprosy-bacillus by Hansen, in 1880, that this suspicion became susceptible of scientific confirmation. The rapidity of extension of the disease in those localities in which it was introduced was sufficient to exclude hereditary transmission as the sole agency in its spread. On the other hand, the results of inoculation-experiments have been variable and in most instances of negative character, but the single positive result in the case of the Hawaiian convict condemned to death is sufficient to establish the infectiousness of leprosy. Some authorities have taken an intermediate position, maintaining that leprosy is, like syphilis, transmissible by both contagion and inheritance.

In order to prove the contagiousness of leprosy it would be necessary to demonstrate the presence of the specific bacterium in all cases, its mode of elimination from the body of infected subjects, and its transfer to another and the development of leprosy in the latter. The organism is, however, difficult of cultivation, and definite knowledge has been wanting as to its usual mode of elimination. To clear up some of the doubtful points surrounding the channels through which conveyance of leprosy takes place, Weber (*Deutsches Archiv für klinische Medicin*, B. lviii., H. 4, 5) undertook a careful study of a case that chanced to come under observation. The patient was a cigar-maker, forty-three years old, in whose family history there was no suggestion of leprosy, and who had spent some ten years in the Dutch East India Islands, in the course of which he had come in contact for two weeks with a native officer suffering from leprosy. After an interval of nineteen months following this exposure, lesions of leprosy made their appearance, the patient meanwhile suffering from loss of appetite, which was attributed to the quality of the food; from weakness and sweating, which were ascribed to the great heat; and from occasional bleeding from the nose, which had been present from boyhood. The skin was in various situations thickened and infiltrated, in places the seat of hyperæmia, macules, and pigmentation; there was some glandular enlargement, and in places there were analgesia and thermanæsthesia. In order to determine the presence and the mode of elimination of the bacilli, a systematic bacteriological study was made of all the secretions and excretions, the blood and the fluids of the tissues, the skin, the scales, the hair. The Ziehl-Neelsen method of staining with carbol-fuchsin proved to be the best, and positive results were obtained with blood from a diseased area—that is, bacteria were found in the contents of a blister induced by the thermo-cautery in the skin and in the scales thrown off, in the hair, in the sweat, in the seminal fluid; while bacilli were not found in blood obtained from a healthy area, in the saliva, or in the urine.

From these observations it is obvious that there are numerous channels through which the bacilli may be eliminated, and that the transmission may take place by mediate or more or less immediate contact. That infection is not thus more commonly conveyed than it actually is may be due to the fact that the bacteria thrown off through the channels indicated may be deficient in virulence or that certain peculiarities must first be complied with on the part of the exposed individual. Under any circumstances it may be safely maintained that leprosy is a specific, infectious disease, capable of transmission by more or less direct association of sick and well. It is not known that any form of medicinal treatment is capable of exercising a directly curative effect, but the spread of the disease can be prevented by the adoption of the broad principles of prophylaxis applicable to all of the infectious diseases, namely, isolation of the sick and disinfection of the materials in and with which the causative micro-organisms are eliminated from the body.

TRAUMATIC HYSTERIA.

IN this age of railway travel, when so many persons spend an appreciable portion of each day on a train, the fact that a new group of symptoms has been developed in connection with railway injuries is only in the common order of things. The close relationship of distant parts of the body through the agency of the nervous system makes it unavoidable that prolonged physical pain should cause mental anxiety and derangement of general health, but a trifling injury to the periphery may tend in time to considerable mental disturbance, while psychical shock acting on the cerebral cortex may bring about grave impairment of health. To this class of complaints the name of traumatic neuroses is most commonly applied. In the July number of *Medicine*, Dr. Augustus A. Eshner writes instructively on this subject. He says: "The symptoms of this disorder do not differ essentially from those of hysteria of any other origin, but I have used the term in order to express disapproval of it." And again: "Concerning the intimate nature of hysteria, we can as yet but theorize. To designate the disorder a neurosis adds nothing to our knowledge, and to burden this designation with such qualifica-

tions as functional or reflex or idiopathic or traumatic, in no wise tends to clarify our notions upon the subject of its pathology. In hysteria we have to deal essentially with a defect in the nervous co-ordination, an adequate cause for which can be conceived to reside in the metabolic alteration in the ultimate nervous elements resulting from modifications in cellular nutrition. Such a conception is not in conflict with the alluring theory of the motility of the neuron so ably advocated by Dercum and others, as it is probable that the metabolic processes taking place in all of the tissues are attended with cellular movement." Charcot pointed out that in the vast majority of cases of traumatic hysteria the patient at first thinks he has escaped without injury, because he has felt no immediate ill effects. There would seem, therefore, to be a period of incubation, and in many cases the patient may not develop symptoms for some weeks. The fact is now universally recognized that it is a mistake to regard these symptoms always as imaginary or feigned, and if such a course be followed the treatment is at times likely to be unsuccessful.

THE ABUSE OF HOSPITAL CHARITY.

The abuse of hospital charity appears to be an almost universal evil. From all the large cities of the civilized world comes the wail of the general practitioner that the hospitals and dispensaries are taking from him the means of gaining a livelihood. He cannot compete with them on equal terms. According to the *Journal de Médecine* it has been computed that there are in Paris twenty-five hundred medical men battling with starvation from precisely the same causes as in the United States and Great Britain. It is in London, however, that the abuse of hospital charity has risen to its highest pitch. Statistics show that yearly more than one-fourth of its population are recipients of medical relief. Dr. D. Campbell Black, of Glasgow, in an address on hospital management in Great Britain in general, and in London and Glasgow in particular, referring to London, says that "the hospital system there has reached its apogee of iniquity," and adds "that the system in the virtuous city of Glasgow is in an equally rotten state." It is to be hoped that Dr. Black is somewhat carried away by his feelings and is inclined to exaggerate matters, but that there would seem to be much truth in his statements cannot be denied. A special commissioner of *The Lancet*, who is investigating the subject, reports that abuses do exist to a very large extent, and says that the special hospitals are the greatest sinners. The fact, too, that the "Prince of Wales' hospital fund" has been a partial failure is a proof that there is an uneasy feeling in the public mind in regard to the conduct of these institutions; there are a great many rich persons both willing and ready to give freely, provided that they are satisfied that the money will be judiciously expended. Indiscriminate charity does more harm in the long run than good, and the manner in which London hospitals have been conducted has given rise to the suspicion that there must be something radically wrong in their management. The conduct of the out-patients' department has been characterized by a high English authority as often a complete farce, demoralizing to the people and unjust to the medical profession. For this state of affairs the general public is not wholly to blame. On the medical profession itself, as has so often been shown, a large share of the responsibility rests. Dr. Black insists that in Great Britain the medical men connected with the hospitals are responsible for all the trouble. He makes the sweeping assertion that "the medical profession is the most masterly of all callings in its hypocritical devices to catch the public eye, and to accomplish this it finds in the hospital system the most convenient and popular medium, falsely based as it is on the best attributes of our common humanity, viz., benevolence and compassion." There can be no doubt that it is invariably the object of young and ambitious men to obtain a position on the staff of a hospital, and they are sometimes willing for the sake of the advertisement, with the hope of ultimate gain, to abase themselves before the public and to shut their eyes to all abuses. In London various schemes, for the most part more or less visionary, have been suggested as a remedy, but nothing practical has as yet been put forward. The position is a most difficult one, owing to the many interests involved, and the only remedy lies, in the opinion of *The Lancet*, "in the organization of the medical profession and the simultaneous action of the hospitals."

WHERE QUACKS ARE NOT WANTED.

The Kentucky State board of health has recently gained a notable victory over quackery by securing the conviction and fine of a professor of osteopathy who plied his trade for a time in Louisville. The osteopaths there, as elsewhere, seek to evade the medical-practice law by setting forth the claim that they do not "practise medicine," that is to say, they do not prescribe drugs, perform surgical operations, or set fractures, but simply manipulate the muscles with the hands. This was the plea advanced by an osteopath in Louisville who was charged with practising medicine without a license, in that he twisted and pulled and flexed the leg and thigh of a poor little martyr with hip disease, or, in the words of the opinion of Judge Thompson, in that "in his ignorance of the fundamental principles of his profession he subjected the child, which was laboring under a tuberculous disease of the hip, to cruel and unnecessary torture, affecting its health and necessitating the employment of a physician to treat it for fever resulting from his inaptitude."

The ruling of the court, which will doubtless serve as a precedent in future cases of the sort, was that "any person who, for compensation, professes to apply any science which relates to the prevention, cure, or alleviation of the diseases of the human body, is practising medicine within the meaning of the statute." On the evidence, the judge found the defen-

dant guilty as charged, and a fine of fifty dollars was assessed against him.

The osteopaths were well provided with money and were ably defended in this case, but, in the face of the evidence brought forward, the conviction of the man was inevitable.

Kentucky has many things of which its sons are justly proud. They claim that it has the handsomest women, the finest horses, and the best whiskey in the wide world, and now, last but by no means least, it has a lot of real doctors, men whose right to practise was honestly come by. To quote from a letter of Dr. J. N. McCormack, secretary of the State board of health: "Our law has now been in operation nearly four years. It has been tested upon every point and so far we have not failed to secure a conviction in each case tried. We convicted the Copeland people, the 'K and K's,' and all other concerns of that kind doing business here, and are able to report that there is not now an itinerant or advertising doctor within the limits of this State." Would that the same could be said of every State in the Union!

News of the Week.

A State Veterinary College has been established at Cornell University in which free instruction in veterinary medicine and surgery will be given to citizens of New York State. In addition to this the authorities of the college will conduct investigations as to the nature, prevention, and cure of animal diseases; investigate the economic questions which concern the more profitable breeding, rearing, and utilization of animals; and produce reliable standard preparations of antitoxins and other products to be used in the diagnosis, prevention, and cure of diseases in animals. Cornell University will administer the veterinary college, appoint investigators, teachers, and other officers, lay out lines of investigation, and prescribe the requirements for admission and the course of study. The university is to receive no compensation for this.

Moscow Delegates Received by the Tsar.—On Tuesday of this week the Tsar received at the Peterhof Palace in St. Petersburg a number of physicians who were on the way to Moscow to attend the International Congress.

Low Mortality in New York City.—The lowest death rate for a week in this city for the past twenty-five years was that for the seven days ending last Saturday. It was 20.09 per 1,000. The first week in August also had a very low death rate, 20.78. This favorable showing is due in large measure to a remarkable decrease in the number of deaths among children. There has never been a year when there was so little cholera infantum. The figures for the five weeks ending July 31st are 2,457 for 1897, and 2,566 for 1896. The reason for the lessened mortality among children under five years of age is to be found in the improved sanitary condition of the streets, in the rigid inspection of milk and the supervision of the dealers by the board of health, and in the absence of any prolonged season of excessive heat.

Medical Schools in Denver.—As we noted in a recent issue, by a decision of the supreme court the Medical Department of the University of Colorado will no longer be permitted to conduct a course of instruction in Denver: consequently the regular course of medical instruction will be given in Boulder for the present, but, as soon as the charter is amended, the medical department will be reorganized in Denver. Many of the former faculty of the University of Colorado have united with the Gross Medical College of Denver, among them being Drs. Clayton Parkhill, Josiah N. Hall, G. Melville Black, and James M. Blaine. To the faculty of the Gross Medical College have also been elected Drs. William N. Beggs, of St. Louis; Lincoln Mussey, of Cincinnati; George Edward Tyler, of Washington, D. C.; Louis H. Kemble, of Denver; Charles Byron Nichols, of Boston; David H. Coover and David D. Thornton, of Chicago.

Dr. Paul F. Munde, of New York, has been elected an honorary fellow of the Edinburgh Obstetrical Society.

Pennsylvania and Maryland Union Medical Association.—The twentieth annual reunion of this society will be held at Highland Park, York, Pa., on Thursday, August 26, 1897. The officers of the association are: *President*, Dr. Joseph Price, Philadelphia, Pa.; *Vice-Presidents*, Dr. C. A. Rahter, Harrisburg, Pa., and Dr. Chas. G. Hill, Baltimore, Md.; *Secretary*, Dr. Roland Jessop, York, Pa.

A Proving of the Bacillus Icteroides.—A physician in Uruguay, Dr. Antonio Quesada, has offered to subject himself to inoculation with the bacillus icteroides in order to prove the correctness of Sanarelli's assumption that it is the pathogenic agent of yellow fever. All attempts to turn Dr. Quesada from his purpose by pointing out its dangers have been unavailing, so that with every precaution the experiment will be conducted in the presence of a few selected physicians, who will carefully note the progress of the case. Dr. Quesada is a robust man, forty-two years of age, who was formerly a surgeon in the Spanish army, serving in the Philippines and in Cuba. He made a deep study of yellow fever while in Cuba, but asserts that he has never had the disease. He professes absolute confidence that the experiment will prove the value of Sanarelli's researches.

Canadian Medical Association.—The thirtieth annual meeting of this society will be held on Monday and Tuesday, August 30 and 31, 1897, in Synod Hall, Montreal, under the presidency of Dr. V. H. Moore, Brockville, Ont.

Disinfection of Sleeping-Cars.—The Louisiana State board of health has decided to disinfect all sleeping-cars coming to New Orleans. All such cars entering the city immediately upon their arrival will be cleaned thoroughly and disinfected under the surveillance of the sanitary inspectors of the board of

health. The towels and bedclothes will be sterilized by steam. The system of disinfection will also be extended to all steamships arriving at that port.

Medical Society of New Jersey.—Dr. D. C. English, president of the Medical Society of New Jersey, has appointed Dr. William Pierson, of Orange, third vice-president of the society, to fill the vacancy occasioned by the death of Dr. John J. H. Love, of Montclair. He has also appointed Dr. William J. Chandler, of South Orange, recording secretary in place of Dr. Wm. Pierson, resigned.

Quarantine Regulations in Costa Rica.—Dr. T. M. Calnek, of San José, Costa Rica, member of the international executive commission of the Pan-American Medical Congress, in a recent communication to the secretary, Dr. Chas. H. Reed, of Cincinnati, states that it is the intention of the government of that country to establish a fully equipped quarantine station with all necessary disinfecting appliances. The necessity for this course is found in the infected condition of practically all of the tropical ports of the Pacific. An efficient inspection service is now maintained at Port Limon under the supervision of Dr. Varela.

A Microbic Cure for Typhoid Fever.—Dr. Hankin has reported to the Indian government the discovery by a young Parsee medical man, Dr. Ghadialli, of a micro-organism to which is ascribed the power of destroying the typhoid bacillus. This discovery was suggested by the fact that, in samples of water sent for examination containing this microbe, the bacillus typhi abdominalis was never found. Hankin has named the microbe after its discoverer, the "micrococcus Ghadiallii." In pure cultures it is harmless to man when swallowed by the mouth, and produces no ill effects when injected into the peritoneal cavity of rabbits and guinea-pigs. It is already suggested that cultures of this micro-organism might be used as a remedy in typhoid fever, as a disinfectant of typhoid stools, and as a purifier of infected drinking-water.

Syphilis and Colds in the Head.—Dr. C. B. Taylor, an erratic physician of Nottingham, has been speaking and writing at length against the measures that are to be again put in force to reduce the morbidity of venereal diseases among the British troops in India. Among other up-to-date views enunciated by this exponent of scientific medicine are that gonorrhœa is an affection of little or no gravity; that a common cold is more dangerous than syphilis, since it "causes one hundred and twenty thousand deaths every year, while syphilis is probably the least fatal of all serious diseases;" that it is a very rare event for a syphilitic parent to transmit the disease to the offspring; and that in the great majority of cases syphilis, the "only serious form of venereal disease," either spontaneously disappears or is readily and permanently cured.

Medical Saints.—The rewards of medicine are few indeed in this world, or even in the next, if we may judge by the small number of practitioners who have been placed upon the calendar of saints. We therefore have cause to rejoice that one more was added to the list by the Pope in the solemn canonization on Ascension Day. The new saint is Dr. Antonio Maria Zacaria, who was born at Cremona in 1503, and studied medicine in the University of Pavia. He practised chiefly among the poor, and died in Cremona in 1563.

The Effect of Civil-Service Examinations.—It is stated that eighteen women who were recently examined under Governor Black's new civil-service scheme have suffered from nervous prostration as a result of the excitement attending the examination. The *Boston Medical and Surgical Journal* thinks that, "if such is to be the general result of the new system, there can be no question that the scheme must be regarded a failure. It is, to say the least, unfortunate that any new source of nervous breakdown, which is not absolutely necessary, should be forced upon our public servants." It would seem rather that a woman whose health is so precarious that it can be broken down by the strain of an examination is not in a physical condition to perform satisfactorily the duties of the place to which she aspires. We sympathize with the ladies who have had this trying experience, but the hard fact remains that the public service is no place for invalids.

The British Association.—The sixty-seventh annual meeting of the British Association for the Advancement of Science began in Toronto on August 18th, and will continue in session till the 25th. About five hundred delegates were registered the first day, and it is thought that the total attendance will be nearly one thousand. On Thursday a reception was given to the members by the Governor-General and Lady Aberdeen in the Parliament buildings.

Dr. L. F. Warner has been appointed special medical examiner for the municipal civil service board of New York.

A Peculiar Accident.—A three-year old child in Newark, N. J., recently picked up something, which is assumed from its effect to have been dynamite, and began to chew on it. Shortly afterward there was a terrific explosion, and the head of the boy was blown from his body and parts of it were hurled for a considerable distance.

Professor Virchow has been elected a foreign associate of the French Académie des Sciences. There are six other foreign associates of the academy, three of whom are Englishmen.

The Sign Language for Deaf-Mutes.—It is proposed to establish in England a college for deaf-mutes, modelled after that established in Washington by Dr. E. M. Gallaudet.

The Coming of the Plague.—According to a newspaper paragraph, which we have been unable to trace to its source, if it has any authentic one, Yersin declares his conviction that the plague which has prevailed in southern China since 1894, and in British India since 1896, is the genuine black death of the Middle Ages, and that it will in all probability reach Europe in a year or two.

Clinical Department.

A CASE OF NEUROTIC ALOPECIA.

By WILLIAM S. GOTTHEIL, M.D.,
NEW YORK,
PROFESSOR OF DERMATOLOGY AT THE NEW YORK SCHOOL OF CLINICAL MEDICINE.

FALLING of the hair may be complete or partial, and either variety may be local or general; and partial local alopecia may not affect the entire area that is diseased, but may occur in circumscribed patches surrounded by an otherwise normal pilous growth. Leaving out of account the cases in which the hair bulbs have been destroyed by inflammatory and ulcerative processes, as by lupus erythematosus or vulgaris, folliculitis, syphilis, etc., as also by the parasitic diseases, ringworm and favus, we may classify the various kinds of alopecia as follows:

1. Congenital alopecia, a rare general form, in which the hair follicles are few in number or absent, and which is usually associated with defects of the nails and teeth.

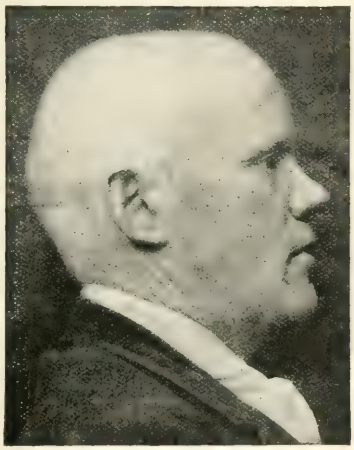
2. Symptomatic alopecia, in which the hair falls out all over the body from constitutional causes. The loss of hair is rarely complete; it is seen after severe illnesses, as after fever following major operations, and in the cachexias, as phthisis, diabetes, syphilis, and leprosy. It is a diffuse thinning of the hair rather than a distinct alopecia, and, while sometimes very extensive, is rarely complete. The prognosis is almost always good; the hair bulbs remain and growth begins again as soon as their nutrition is improved.

3. Alopecia areata, where from a trophoneurotic or a parasitic cause (it is yet undecided which) the hair falls out over localized areas usually circular in shape. The bald spots appear anywhere upon the body, but most commonly upon the head. They may coalesce, and in bad cases almost all the hair of the body falls out, but the history of its appearance in spreading spots is very definite; the skin of each area is completely denuded of hair, but otherwise normal; and at the margins of the coalesced patches a ridge of hair or a few stragglers are usually left.

4. Neurotic alopecia, a rare affection, of which two distinct varieties are to be noted. The partial neurotic alopecia that occurs in the area of distribution of a nerve after an injury of that structure is occasionally seen. General and complete alopecia from neurotic causes is even less common. Cases have been reported by Tyson, Duckworth, Cooper, and others. In almost every case a severe nervous shock preceded the falling of the hair. One case was that of a captain whose ship was struck by lightning; another that of a boy who fell from a great height from a tree. The progress of the alopecia is usually very rapid; in one case it took only ten days; and in some of them the finger and the toe nails were also shed. It is never, however, absolute; a few straggling hairs are left behind. The prognosis in these cases is usually bad; for some reason of which I am unaware the hair does not grow again in its former luxuriance, and sometimes it does not reappear at all. The following is the history of a striking case of the kind which recently appeared at my clinic.

T. Q——, thirty-four years of age, hostler, widower, had never had sickness of any kind save a pneumonia five years ago. As he put it, he had never had occasion to take five cents' worth of salts. He is a man of steady habits, a total abstainer, and he lives with his mother and sister, to whom he is much attached. He has always had a remarkably heavy head of hair and a very thick and bristly moustache and beard; his chest and back were covered with long and tangled hair, so that he was ashamed of himself when he was exposed while bathing; and his arms and legs were equally hirsute. The color of his hair is a vivid red, and, judging by what remains of it, it is of exceptional calibre and stiffness. His history was that at Christmas of last year he lost his job and was out of work for the first time in six years. He worried a good deal about it, since his family was dependent upon him. In February he began to have insomnia and lose his appetite, and he has decreased in weight from one hundred and seventy-four to one hundred and fifty pounds since January 1st of this year. During the last month his hair has been falling out.

When he first presented himself on March 12th of this year his appearance was a striking one. He was



a sturdy, healthy-looking man, somewhat below middle height, with firm muscles, a clear, florid complexion, and seemed fairly well nourished. His head looked "moth eaten," there being a general diffuse falling of the hair over the entire scalp. What hair he had was long, but it came out in bunches at the slightest pull. His eyebrows were represented by about six hairs on each side; the eyelashes were entirely gone. All that remained of his moustache was a few stray but very long red hairs at each angle of the mouth. He had not shaved for a week, and on his cheeks and chin were irregularly scattered hairs, not one-sixth of the normal amount, according to his statement. Chest and back, arms, hands, and legs showed only a few scattered but long red hairs. The axillæ were almost hairless, and on the pubis was a sparse tuft.

He was carefully examined for any signs of syphilis, past or present, as well as regarding the presence of any disease of the internal organs, but no sign of anything of the kind was discovered; and the only conclusion that it was possible to come to was that the case was one of true neurotic alopecia caused by mental anxiety. The treatment consisted of general tonics, arsenic with nux, and the mineral acids, together with the local use of a bichloride and adeps lanæ ointment (1–1,000) for the scalp.

During the two months that he was under treatment the alopecia steadily progressed. A few scattered hairs only remain on the scalp and face; the moustache and eyebrows are entirely gone, and the body is quite free from hair save a few stray ones upon the pubis. He has slept and eaten better, and is not so worried; but the falling of the hair continues.

As I mentioned above, the prognosis as to a renewed growth of the hair is not good. Why this should be

so it is hard to imagine, for the depressed state of nutrition which the skin shares with the other organs of the body in conditions such as his can hardly be severe or prolonged enough to lead to a permanent atrophy of the hair bulbs. It is possible that some good may be gotten by the systematic use of the faradic brush, or from chrysarobin, or from the hypodermatic injection of small doses of pilocarpine. But the records of these cases usually show a result that is very unsatisfactory.

HYSTERECTOMY.[1]

By E. T. KINGSLEY, M.D.,

[illegible], TEXAS.

When an operation becomes so common and has been given so much careful thought as hysterectomy, it ceases to have that interest to the average physician that it did as an innovation in surgery, unless there should attach to the case some unusual history—something of uncommon interest in the operation or its results. Believing that I have a few such cases, I am prompted to place on record the following:

Case I.—Miss K——, aged eighteen, aborted September 3, 1894, between third and fourth months, two or three weeks after the criminal induction thereof. I saw her first on September 9th, and found her with a temperature of 105° F., pulse quick and full, and great pain and tenderness over the lower abdomen. She was curetted, washed, and packed twice in the next week, with the effect to cause a slight reduction in fever. These symptoms continued without incident until September 29th, when an abdominal section was made. Extensive adhesions were found in and around both tubes. The ovary and tube on the left side were successfully removed, but the one on the right contained an abscess, partly within the wall of the uterus and partly in the tube, the walls of which would not hold a ligature; cutting through left a large hole in the uterus through which pus ran freely. The womb was large and soft, and infiltrated with pus. This predicament left us no alternative but hysterectomy, which was accomplished without trouble, and the patient made a prompt and complete recovery, and is now able to ride a bicycle and work as before, and looks better. This operation was done at the patient's home, amid very unsafe surroundings.

Case II.—Mrs. G——, aged thirty-nine, was brought to my private hospital, January 14, 1895, from an adjoining town. She was the most perfect picture of a living skeleton I think I ever saw; her pulse was barely perceptible and very irregular, and she had occasional attacks of dyspnœa. I learned that she had come to Texas from Missouri four years before for lung trouble, having had repeated hemorrhages. She had had only one in Texas. Physical examination of her chest revealed a dry cavity in the apex of the right lung. She had been confined on November 2, 1894, with her tenth child, and the confinement was followed by fever which continued till I saw her. Eight years previously she had been confined to her bed three months following a confinement, from which she dated her pelvic trouble. I found a deep bilateral laceration of the cervix, and it was filled with polypoid growths. There was a copious muco-purulent discharge, great tenderness in the vault, especially to the left, and the womb was fixed. There was a large tumor on the left side, the outlines of which could be distinctly seen extending from the pubis to nearly the border of the ribs, and it was exquisitely tender. After five days' meditation, an operation was decided upon. The abdomen was opened on January 19th. The appendages were found free on the right side and removed, the uterine artery was tied, an opening made into the vagina in front and behind, and the reverse course pursued on the left side, according to the method suggested by Prof. Howard Kelly. On the left the womb was tied off from below upward, and the adherent and suppurating masses, from which streamed quantities of pus, were left intact, after being washed carefully with hot decinormal salt solution, and the surface and interstices so far as possible covered with iodoform gauze projecting into the vagina and out of the abdominal wound. She began to improve at once, and soon the attacks of dyspnœa, which occurred several times daily and for which digitalis and large doses of strychnine were given, became less; her convalescence was rapid, and six months later she paid me a visit on her way North, the picture of health. At last accounts she was well.

Case III.—Mrs. Y——, aged forty-one, has one child, a boy aged fourteen; labor was prolonged and instrumental, and since then she has had headaches increasingly violent, for which finally she travelled and was treated more or less constantly. Some eight or ten years after her confinement a deep bilateral laceration of the cervix was discovered and repaired, giving her temporary relief. A few months after this operation she had a pelvic inflammation, which resulted in a pelvic abscess, which was opened in the posterior cul-de-sac. This abscess cavity and sinus refused to heal, and she was treated at home and in the Woman's Hospital, New York, and elsewhere a year before it closed; her headaches continued to increase, although she no longer suffered from any pelvic trouble that she was conscious of. She became finally a complete invalid by reason of these headaches, was confined to her room and bed most of the time, and was compelled to use morphine, whiskey, and other drugs more or less constantly to get any relief. She finally came under my systematic care. In January, 1895, I found the womb perfectly fixed and some tenderness on deep pressure; she was a short, thick-set woman, with thick tense abdominal walls. This was all I could make out, but this was enough to establish the fact to my mind that this was a probable cause of her reflex pains. Careful examination enabled me to exclude other organs, except possibly the brain. I did not, therefore, hesitate to advance the opinion that the headaches were of pelvic origin, and that nothing short of a hysterectomy would relieve them. In order to be more certain of my ground, I obtained the opinion of several of the ablest gynæcologists in the country, all of whom except two agreed with me. Accordingly, on March 25th, the abdomen was opened; the right tube and ovary were dug up—if I may use this expression—with great difficulty and removed. The tube was at least one inch in diameter, and filled with pus; the left but little smaller, but containing no pus. This also was removed, and the womb, not very much enlarged but very hard, followed. Time, two and one-half hours. From the moment she became conscious after the operation she said her headaches were gone, and for two weeks until she was nearly ready to sit up she never ceased to wonder at her great relief. At this time the nurse heard her moaning in the night, and upon going to her found her right side paralyzed; she was completely aphasic, but could understand what was said to her. In the course of twelve hours she became unconscious, and the paralysis, both motor and sensory, was complete; there was partial ptosis of the left eyelid, and an ophthalmic examination showed the disc in the left eye somewhat cloudy. It was determined to open the skull on the left side, which was done by Dr. Robert

[1] Read before the gynæcological section of the Texas State Medical Association, at Paras, Tex., April 27, 1897.

E. Moss. There was no pulsation of the dura, which was incised, nor was anything discovered to account for her condition. The wound was closed, with the confession that we were baffled. She died on April 19th, one week after the last operation and over three weeks after the hysterectomy. An autopsy revealed a perfect condition in the pelvis; the vaginal vault was closed as perfectly and smoothly as though there had never been any womb there; the intestine lying over it was attached by a small segment. On removing the skull cap a diffuse blood clot was seen covering the entire right hemisphere, quite thick and dense, posteriorly. There was no necessity for searching farther for an explanation of the situation. The arachnoid was adherent at two or three small points along the border of the great longitudinal sinus. It is interesting to speculate on what connection if any the first operation had to the cerebral hemorrhage; second, that the hemorrhage was on the side of the paralysis, which rather goes to disprove some of our theories of cerebral localization.

Case IV.—Miss R——, aged twenty, had suffered from dysmenorrhœa for several months, the excessive flow lasting for weeks, but there was never any pain except near the menstrual period. For this condition she was in the course of three years curetted and packed several times, which checked the hemorrhage only for the time. In the latter part of April, 1896, a distinct tumor was discovered on the left side, which had made its appearance and grown rapidly long after she had had any treatment. She was now having a light fever continuously, was profoundly anæmic and very weak. An operation was advised and done, May 2, 1896. The right tube and ovary were free and normal in size and appearance, but wedged against the pelvic wall by pressure of the tumor from the opposite side; on the left was a tumor filling the pelvic and abdominal cavities, and extending nearly to the border of the ribs, to which the intestines were adherent. The tumor was so dense and vascular as to remind one of a soft myoma, which I thought it was until the womb was removed. I found it impossible to free the tumor from its bed from above; so I removed the adnexa on the right, divided the broad ligament between sutures, opened the vault before and behind and as on two or three former occasions reversed the order, working from below upward on the left. When I came to the tube its wall ruptured, letting a few drops of pus escape. It was now for the first time that the true nature of the tumor became apparent; the rent was seized with forceps to prevent further escape of pus, and the tumor dissected out carefully *en masse*. Great care was necessary to avoid the ureter, as the mass lay over its entire course. An iodoform gauze tampon was used for drainage, and the abdominal wound was closed. Examination of the tumor showed its walls to be about one-fourth of an inch thick and very vascular externally. Some five days after the operation a copious watery discharge from the vagina began. This kept up until the middle of September, with only an interval of two or three days. The amount of the discharge was enormous; it was neutral in reaction, with a specific gravity of 1.005, and odorless until after standing a number of hours, when a slight urinous odor developed. The quantity of urine passed from the bladder was normal in quantity and quality. About the middle of September it ceased altogether, and thereafter for three or four months violent paroxysms of pain over the right kidney occurred at about the regular menstrual periods, accompanied by fever and purulent urine. This condition was remedied by the administration of morphine, salol, and hyoscyamus. For the last five months she has been entirely free from any trouble, steadily gaining in color, flesh, and strength, and is now feeling better than for several years. Interesting points in this case were the freedom from pain throughout the sickness before and after the operation, except at the menstrual period, and the fact that there was no vaginal or abdominal tenderness; the rapid development of an enormous pyosalpinx; the copious vaginal discharge continuing for months, which could come only from a wounded ureter, and its final spontaneous closure.

From a study of these cases the following conclusions seem to be justified: First, in pus cases we may find the womb normal and the pus confined to one side, the other remaining also normal, or we may have both tubes and womb completely septic; and we must therefore not enter the abdomen with a preconceived determination to do a certain operation, but with a view of doing what circumstances demand. If we have a young woman or married woman without children, it may be advisable to undertake to save one tube and ovary if possible, even at the expense of a second operation later. Second, in all pus cases we are bound to have displacement and adhesions, and the tissues involved are irreparably damaged. Hence it is absurd to do these operations per vaginam, because the womb is fixed and the relations of the parts are changed, necessitating blind surgery and leaving behind diseased tissues certain to give rise to future trouble. Third, strange and incomprehensible reflex complications often accompany and follow pelvic disease. Fourth, in cases of sepsis following abortion or occurring in the puerperium, the safest time to operate is after a few weeks rather than immediately. I wish to acknowledge the great assistance given me in these cases by Drs. F. Paschal, F. M. Hicks, R. E. Moss, and my sister, Dr. Josephine Kingsley.

A MALINGERER (?).

By EDGAR J. SPRATLING, M.D.,

Second Assistant Physician, Matteawan State Hospital, Matteawan, N. Y.

In the winter of 1891–92 a beggar who pretended to be horribly deformed with rheumatism was refused alms by a rabbi who had been warned against him as a fraud; for this refusal the beggar shot him. A conviction followed; in prison he would obey no orders, was filthy, noisy, and violent. He was given the benefit of any doubt that might exist and committed to the hospital for insane criminals. There he at once began to find fault with everything, and declared that he was beaten, poisoned, and in many ways persecuted, none of which complaints were based on fact. He soon began to break furniture, yell, and make assaults on those about him. For these acts, frequently repeated, he was placed in a separate room with screened windows, whereupon he pretended to become physically insensible and paraplegic, could not or would not take food or control the sphincters. He was then fed by means of a tube and received an infant's care. This condition lasted during the two following years, examinations being made from time to time, each apparently giving akinesia and analgesia of the lower half of the body. He resisted every examination and for a day or two afterward would pour out a stream of complaints in a whining tone, of heat, cold, bad odors, repulsive sights, annoying sounds, etc., all of which were baseless materially. At times he would show blood on his bedding, declaring that he had had a pulmonary hemorrhage, but under guarded observation it was found to come from self-inflicted injuries of the gums; and one night while under observation he was seen to climb up the window to get and eat a piece of cheese put there by another patient. The next day in spite of his resistance a Sayre's apparatus and a fara-

dic current were used. A few days of this treatment and he began to walk, though in a halting manner, and the sphincter paralysis disappeared, but he would immediately relapse into his former state of pseudo-paralysis whenever the apparatus and battery were taken from the ward. He was kept up and made to go to the dining-room and exercise court, much against his will, till February, 1897, when he passed a small amount of blood by the rectum. Examination simply confirmed many previous ones, giving an enlarged spleen and small liver, but no reason for a sudden collapse and resumption of the old state in all its details. But two days later anasarca of the feet and scrotum was noticed, followed rapidly by ascites. After only five days tapping gave nearly two gallons of fluid, and on every second or third day thereafter a like amount was withdrawn. He generally appeared insensible or pleaded paralysis, but at rare intervals would walk about the ward at will.

In May he died. The post-mortem gave old excoriations of the leg centres and two inches backward on both hemispheres. No other pathological or developmental peculiarity of the brain or nerves could be found. Liver hobnailed and about one-third size; spleen about four times increased; heart, lungs, kidneys, and intestines normal.

The patient was syphilitic. Absolutely nothing of his past could be learned, but he was supposed to have been born an Algerian Mohammedan and to have led a haphazard existence from childhood. The probabilities are that he had had syphilitic paralysis at some time in the past and that locomotion was difficult and painful and his delusions and hallucinations were genuine, but that all mental and nervous troubles were many times multiplied for a malingering purpose. This belief is strengthened by the fact that he never did complain of the real physical disease of which he died—cirrhosis of the liver.

Society Reports.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, June 21, 1897.

JOSEPH E. JANVRIN, M.D., PRESIDENT, IN THE CHAIR.

The Biparietal Diameter as a Symptom and Diagnostic Criterion of Tuberculosis.—DR. MARK I. KNAPP read the paper (see page 265).

In discussing Dr. Knapp's paper DR. C. E. QUIMBY said this seemed a new line of research. The author might well have discussed the narrowness of the biparietal diameter in those who did not have tuberculosis, for it would be interesting to know if non-tuberculous individuals had wide biparietal diameters. If the narrow biparietal existed in other than tuberculous patients, how could the argument that the two were due to the same cause be deduced? The line of investigation might be an interesting one, but he still felt that he would prefer to rely upon the methods now followed, viz., physical examination of the patient, with the evidences found by inspection, palpation, percussion, and auscultation, than to rely upon the mere fact that the individual had a narrow biparietal diameter. It was evidently more beneficial to the practitioner and doubtless more satisfactory to the patient.

DR. KNAPP said the diameter varied in different individuals, but the whole head had to be taken into consideration and the fact of a wide or narrow biparietal diameter be determined by comparison with other diameters. He had a theory as to certain anatomical abnormalities in connection with other diseases, which he hoped to be able to present at some future time.

The Genital Phenomena of Renal Calculi.—DR. R. ABRAHAMS read the paper upon this subject. He proceeded to give the history of several cases in which the genital phenomena were the only indications of the existence of the affection and the approach of its most painful manifestations, colic.

The first case was that of a man, single, aged twenty-two, healthy. He was seized with pain in the right testicle and taken home bordering on collapse. He vomited once or twice during the evening and had nausea in the intervals. The abdomen was normal; the right testicle was very tender and the seat of excruciating pain, accompanied by swelling and tumefaction. The epididymis was hard and painful. The urine gave no aid to diagnosis. There was no history of gonorrhœa, but the affection was diagnosed as acute epididymitis of gonorrhœal origin, which was distasteful to the young man, as he was on the eve of matrimony. The treatment was such as is usual in epididymitis. After four days' attack of violent pain in the region of the right kidney, radiating down the pelvis and thigh, the patient passed a large quantity of urine mixed with blood, gravel, and large and small fragments of broken calculi. Simultaneously with the discharge of débris the testicle began to improve and two days later the patient was out of bed, hale and hearty, the pain and swelling gone.

The second case was that of a man and was similar to the first. The third case cited was that of a woman, married, aged thirty-three, who was healthy until December, 1895. Her physician said she then had an attack of acute ovaritis. This attack kept her in bed a week, with ice on the pelvis and morphine suppositories in the rectum. The recovery was complete. Just a year later she had a similar attack. In the absence of the family physician the writer was called. She had frequent vomiting, coated tongue, was constipated; pulse feeble and rapid; temperature, 101° F.; extremities cold; face pale and covered with sweat. The left ovary was enlarged and exquisitely tender. At the end of a week, after a large warm injection, the woman passed a good quantity of water mixed with gravel and particles of broken calculi. Relief in the ovarian region was immediate, and a few days later the previously enlarged and tender ovary could hardly be felt.

The writer would not have any one infer that every instance of sudden onset of pain and swelling of the testicle or ovary attended by no history of sepsis or traumatism was a *bona-fide* expression of stone in the kidney, yet he would beg every one to remember the possibility of the occurrence of such a state of things. The literature dealing with the possibility of such a cause in ovarian troubles was very scanty. There was more literature on the subject of the affection of the testicle in cases of renal calculi. Dr. Abrahams also cited the case of a boy two years old, in which orchitis was due to a stone. The child had several attacks, each one leaving the testicle more tender, until it had to be supported and was sensitive all the time. On one occasion the child was brought with the history of retention of urine. The bladder was distended, the testicle swollen and tender, and the penis somewhat œdematous. A stone was found embedded in the bulbous portion of the urethra, and after its removal the child was at once relieved and has had no attack of orchitis since, now two years. The significance of the genital phenomena as indicating renal calculi, if rightly interpreted, might be of great aid in preventing an attack of renal colic.

In discussing Dr. Abrahams' paper, DR. ROBERT NEWMAN said one would think it easy to diagnose renal calculi, but at the bedside it was not so easy.

The writer had given a valuable point, but even that would not remove all the difficulties. There were to be considered the many affections to which the genital organs were liable, as orchitis, etc. Then gout, pyelitis, etc., often made the diagnosis of renal calculi difficult. Catheterization of the ureter aided somewhat, but even that did not always settle the matter. He cited a case in which the patient had a large renal calculus necessitating removal of the kidney. The patient recovered, but the next year she had a large calculus in the remaining kidney. Dr. Campbell succeeded in removing this from the kidney and the patient recovered.

Dr. Thomas Manley said the purpose of the paper was in the right direction, as it treated of symptoms, and symptoms led to diagnosis. He thought there was not much difficulty at the present time in diagnosing renal calculi, and if the urine were examined it would be likely to reveal the difficulty. He had not met any cases similar to the ones referred to by the writer of the paper.

Dr. L. B. Bangs said he had not hitherto had his attention called to the subject as presented by the writer, and he thought the suggestions were quite interesting. Renal calculi did not prove so very difficult of diagnosis, but the suggestions made might be of importance. He recalled a hospital case in which the patient had what was supposed to be tuberculosis of the testicle, but after a time he passed a stone and the case cleared up.

Drs. McCleod, White, and Newman were appointed a committee to arrange for appropriate exercises at the next meeting of the association, in memory of Drs. Smith and Lusk.

A motion to appoint a committee to revise the by-laws and constitution was carried.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, February 24, 1897.

John Slade Ely, M.D., President.

Total Thrombosis of the Left Pulmonary Artery.—Dr. James Ewing presented a specimen which had been taken from a woman, thirty-eight years of age, a laundress by occupation. The previous history was negative except that there was an absence of rheumatism. She had not been very ill until about six months before her death, which had occurred on February 18, 1897. On her admission to the hospital there were the physical signs of advanced mitral stenosis. During the two or three months she was in the hospital, the course of the disease was that of a severe mitral stenosis. The principal symptoms were referable to the pulse, which was irregular, small, and at times very intermittent. At one time there was a very severe attack of tachycardia in which the pulse ran up to 180. There was one attack of severe hæmatemesis. The pain in the precordium was severe throughout the illness, but there was no history of an acute exacerbation of this symptom. There was considerable œdema at the time of admission, and this increased steadily up to the time of her death. The urine contained albumin and numerous casts. The manner of death was of interest. She became delirious about five days before death, but at no time showed any severe acute exacerbation of the symptoms, such as would indicate the occurrence of the thrombus or an occlusion by an embolus. She was comatose for two days before death. There was practically no fever during her stay in the hospital. During the last two weeks the temperature did not rise above 99° F., and there were no evidences of pneumonia. At the autopsy it was noted that there were moderate anasarca and jaundice, and on opening the thoracic cavity the right lung was found to be consolidated. There was about one litre of slightly blood-stained serum in the left pleural cavity. The left lung appeared to be somewhat diminished in size. It was apparently the seat of the ordinary consolidation that occurs in advanced heart disease, but on section the lung was found to represent a complete infarct, the whole tissue being studded with rather large infarcts. The pleural surfaces of the lower lobe had become adherent, and when torn apart showed a large cavity in the lower lobe which had evidently arisen from softening of an infarct. In the upper lobes were two areas of softening. Around all the infarcts were areas of lighter color, representing the zones of hyperæmia. The other lung showed two infarcts. The heart was of moderate size, and presented a uniformly narrowed mitral valve, admitting the tip of the little finger. All the chambers of the heart were dilated. There was hypertrophy of the left auricle only. The left auricular appendix contained an old and partly organized thrombus. There was some freshly clotted blood in the right side of the heart, but there were no old parietal thrombi or points of origin here for a thrombus. The liver showed advanced chronic congestion, and the kidneys chronic congestion with nephritis. The spleen was much enlarged and congested. It was evident from an examination of the specimen that the lung had been converted into a single large infarct. The large cavity in the lower lobe was surrounded by fibrin where it had been adherent to the parietal pleura, and evidently antedated the one in the upper lobe. It was interesting that no date could be fixed for the beginning of this extensive lesion, and that, notwithstanding its existence, the patient was able to breathe fairly well. This history was in marked contrast to that of the case in which sudden death occurred after confinement, being caused by the occlusion of one branch of the pulmonary artery by a thrombus.

From a pathological standpoint the etiology was also of interest. It might be supposed that the lung had first been the seat of a pneumonia, and afterward of a thrombosis which finally reached the pulmonary artery. On section, however, aside from the lesions of chronic congestion, there was no inflammatory exudate found except in the zones around the infarctions; hence such an origin could be excluded. Another possible origin was an endarteritis of the pulmonary vessels leading to a parietal thrombus, beginning perhaps in the lower lobe and causing the gangrenous cavity; but on section none of the lesions of endarteritis was found. A third possible mode of origin was the ordinary marantic thrombus, but one would naturally look for some other exciting cause, as, for instance, a small area of inspiration pneumonia leading to thrombosis of a vessel which, owing to the failing circulation, had increased until the entire pulmonary artery had been occluded. None of these explanations seemed to the speaker entirely satisfactory. It was worthy of note that the thrombosis could not have arisen from the heart, as there was nothing in the right side of the heart to give color to such a view.

Hæmato-Myelopore—A New Spinal-Cord Disease.—Dr. Ira Van Gieson said that since 1886 he had been engaged in a study of the origin, nature, and distribution of certain slender columns or canals in the spinal cord, which had been hitherto unexplained. He believed they were expressive of a disease of the spinal cord of a distinctive individuality, deserving a special name, and he had therefore given to it the name "hæmato-myelopore." The word is from the Greek, and signifies an aqueduct or canal in the spinal cord arising from a hemorrhage.

The speaker said that he had first met with this lesion of the spinal cord in 1886 at the St. Catharine's Hospital in Brooklyn. The patient was a middle-aged man who, in falling from an ice wagon, had injured his back. He developed a severe paraplegia, but lived for nine months. The autopsy showed an old fracture of the spinal cord at about the twelfth dorsal segment. The spinal cord at this point was reduced to a small band. Extending upward through the whole dorsal region was a narrow, slender, partly tubular canal, which contained necrotic elements of the cord substance. Dr. Van Gieson here exhibited drawings of the lesion found in this case. He said at the time the condition had been mistaken for syringomyelia. The specimens were taken to the pathological laboratory at Heidelberg, where the opinion was also expressed that the case was one of syringomyelia. Some time afterward Dr. Dana had secured an autopsy on a woman who had been suddenly seized with an acute transverse myelitis, occurring without traumatism. This case also showed a long narrow tubular canal in the spinal cord. The focus of the myelitis was found in the mid-dorsal region. Dr. Dana published the case in 1889 under the title "A Case of Acute Myelitis with Central Perforating Necrosis of the Spinal Cord." In 1891 the speaker published the case first referred to under the title "Traumatic Myelitis; Destruction of the Twelfth Dorsal Segment, with a Column of Necrosis Extending into the Dorsal Region." More recently he had met with three or four cases of traumatic hæmatomyelia. The mechanics of the spinal cord showed why it was necessary for blood escaping into the cord to assume the form of slender columns. The distribution and topography of these hemorrhages so closely simulated that of the canals already referred to that he was led to look upon these hemorrhages as the true explanation of the "perforating necrosis." Blood passes through the gray matter and disintegrates it. After a time this may be absorbed, leaving a clean-cut hole in the spinal cord. Up to the last few months he had been unable to find the intermediate stage between the columns of hemorrhage and the perforating necrosis, but through the courtesy of Dr. Fraenkel he had been able to study a case in which this intermediate stage was present. There is a disposition after a time to the formation of new neuroglia tissues about these long slender canals, and it was for this reason that the condition had been mistaken for syringomyelia. The symptoms of hæmato-myelopore are entirely distinct from those of syringomyelia, although resembling them in some particulars. The structural resemblance between the two diseases is due to the inflammation which tries to replace the tubular gap in the spinal cord in hæmato-myelopore. Dr. Van Gieson said that he had artificially injected the spinal cord with colored gelatin, and had found that these injections took the form of the columns observed as a result of hemorrhage.

Dr. Ewing said that the society should be congratulated on being the first to hear the presentation of this important subject. The speaker had stated that the course of the blood was determined by the limitation afforded by the pia mater. It would seem to him that the blood should be able to travel in any direction within the limits of the pia mater; hence he could not understand this slender columnar distribution. The charts exhibited would seem to indicate that near the source of the hemorrhage several such columns were sometimes present.

Dr. Van Gieson replied that if the spinal cord were injected with colored fluids it would be found that more resistance was met with in passing transversely than in passing vertically through the cord. The two crescents of gray matter are softer and more spongy than the nerve fibres, and hence offer less resistance. There are interstices between the nerve fibres which constitute slender canals—indeed, the whole spinal cord would appear to be constructed as if it were itself a columnar or tubular formation.

Dr. Van Gieson then announced the publication of a more detailed presentation of the subject in the State Hospital's Bulletin and a final presentation of the disease for the congress at Moscow during the coming summer.

Surgical Meeting, March 10, 1897.

John Slade Ely, M.D., President.

The Results of Experimental Nephrectomy in Dogs as Bearing upon the Uræmic State.—Dr. C. A. Herter presented a report on the results of his study of this subject, chiefly with a view to indicating that the blood, after ligation of the vessels, or removal of the kidney, underwent a change in its toxicity. The paper was based on fourteen observations, all of which were upon the dog, with one exception. In that case the pig was the animal experimented upon. In one animal death followed the removal of one kidney, and this was explained by the fact that after death the other kidney was found to be the seat of an extensive hydronephrosis. Both kidneys were extirpated in six dogs, and in the pig. The average duration of life was two and a half days, the shortest being twenty-four hours, and the longest four and a half days. Immediately after the operation, there is usually considerable prostration; in the case of the pig there was, however, marked restlessness. The first striking symptom is vomiting, which usually begins about the end of the first twenty-four hours. It is usually repeated a number of times and then ceases. The vomited matter is ordinarily bile stained, and sometimes contains blood. In four of the dogs diarrhœa was associated with the vomiting, more or less blood being commonly present in the diarrhœal discharges. Food was refused by all the animals except the pig. At the time of the vomiting there was usually much prostration, and the respirations became much slower and deeper, being reduced from 50–80 a minute, to 25 a minute at the end of forty-eight hours. In some instances, the rate fell as low as 14 to the minute. At first the heart action was normal, but it usually became slower after a while, the reduction being from 150 to 80 a minute. This was associated with a distinct increase in the force of the heart's action, and usually in the fulness and tension of the pulse. After forty-eight hours the nephrectomized animal was apt to become drowsy and remain in this state until death. In some of the dogs, living more than fifty hours, there was fibrillary twitching of the muscles. In only one case was there a true convulsive seizure. This occurred in a dog living eighty-two hours after the removal of both kidneys. It was preceded by pronounced fibrillary contractions, and consisted of clonic spasms of several minutes' duration. It terminated fatally. Such seizures, the speaker said, appeared to be quite rare in cases of experimental uræmia. He had not been able to satisfy himself that blindness ever occurred in these dogs. During the last hours of life the respirations were even slower than during the middle period, but they were more shallow. In some instances there was pronounced irregularity of breathing, sometimes suggestive of Cheyne-Stokes respiration. These symptoms justified the belief that they were dependent upon paralysis of the respiratory mechanism. Death, however, invariably occurred from respiratory failure. On the other hand, the heart, even in the terminal stage, continued to act forcibly, and maintained a nearly normal arterial pressure to the end. On division of the vagus nerves at this time, the pulse rate was increased.

The cardiac symptoms were evidently the result, in part at least, of vagus inhibition. In several nephrectomized dogs there was a striking increase in the fulness and tension of the femoral pulse, in comparison with that found before operation. No doubt such a pulse in a nephritic patient would be called a high-tension pulse. At times, the heart sounds were much increased in intensity on the second or third day after nephrectomy, and the aortic second sound was especially loud and valvular. In these animals the temperature was never increased above the normal, except as a result of sepsis; on the contrary, the temperature was one to three degrees Fahrenheit below the normal for the greater part of the period of observation. The symptoms were practically the same in all the animals, whether the kidneys were removed or the ureters were simply tied—a matter of much importance, as it showed that Brown-Séquard's theory of uræmia was hardly sustained.

A most important feature of these cases was that the blood serum was found to be increased in toxicity if taken twenty-four hours or more after operation. The degree was roughly related to the duration of the experiment. This toxicity was either much reduced, or quite lost, by exposing the serum for a few minutes to a temperature between 60° and 67° C. The change in toxicity was associated with a darkening of the serum and the development of a peculiar odor. Dr. Herter said that he had not yet been able to determine the point at which this change in toxicity first took place. It was sometimes noticeable that this loss of toxicity was not so complete with an exposure for two minutes to a temperature of 67° C. as with an exposure of five minutes. At times there was a slight separation of a reddish gelatinous material at this temperature, but without distinct coagulation. It was possible that the substance whose activity was destroyed was a globulin, but all attempts to determine its nature had hitherto failed. It was important to note that the normal serum of the dog was toxic to rabbits. Former observers, the speaker said, had not noted that in the case of dogs the normal serum underwent a striking reduction in its toxicity when it was heated in the manner just described in connection with the foregoing experiments. The increase in the toxicity of the serum varied: sometimes it was not more than one-third more toxic than the normal serum, but in other cases it was from two to six times more toxic than the normal.

It was important to emphasize the fact that the results obtained by this experimental study were of the most definite character, and that the results had been concordant in all the cases in which the serum of nephrectomized animals had been tested. In these experimental studies the rate of making the injection was of importance. For instance, if made too rapidly, more serum would be injected than was required to cause the symptoms or produce death. He had found that the rate should be from two to five cubic centimetres per minute. It was important to distinguish between the results obtained in studying the toxicity of urine and those from a study of the toxicity of the blood serum. In the case of the urine, the potassium salts form an exceedingly important element, as from sixty to eighty per cent. of the toxicity of the urine is due to the presence of these salts—in other words, only a comparatively small proportion was due to the organic ingredients, such as urea, extractives, etc. Unless, therefore, we knew just how much potassium salts were present, particularly the chloride, we could not say just how much of the toxicity was due to the salts. In the blood serum there would be found very little potassium salts. The diminution in toxicity in the experiments could not be ascribed to the destruction of the extractives and urea, because a far higher temperature was necessary for their destruction. The diminution of toxicity appeared to be due to a substance similar in its properties to that found in the urine of some cases of human uræmia. In both cases, the toxicity was destroyed or reduced by the application of heat, and the color and odor underwent similar, if not identical, changes.

The muscles and the liver were extracted with a two-per-cent. salt solution at the room temperature, and the clear extracts were injected into rabbits. It was found in this way that the liver did not store the thermo-sensitive substance, and that it did not give positive toxic results. We must look to the skeletal muscles for information regarding the thermo-sensitive substance which was responsible for the change in the toxicity of the blood. Occasionally, massage had been found harmful in patients with chronic nephritis on the verge of uræmia, resulting sometimes in aggravating the dyspnœa and general discomfort. An extract of the muscles of the normal dog when injected into rabbits was found also to be toxic, but in a rather different way, the animals dying apparently of suffocation and without the development of convulsions. The significance of this observation was not yet known. As was well known, the urea of the blood in the nephrectomized dogs was increased from two to ten times the normal amount, varying with the time the animal lived after the nephrectomy. In the nephrectomized dogs, changes in the color of the retina had been observed. Marked congestion of the intestine was quite frequently found in these animals. A marked congestion of the mucous membrane of the small intestine, of uneven distribution, was commonly found after forty-eight hours. The mucous membrane of the stomach was often moderately congested, as was also that of the lower colon and rectum. A similar congestion might be produced by large intravenous injections of urea, but the congestion was apparently not due to urea in the experiments under consideration, as comparatively small quantities of urea were found in the intestine. A similar congestion was produced by injecting into dogs the serum from uræmic patients.

Dr. Herter said that he had analyzed forty-one apparently reliable cases in which anuria in the human subject had lasted more than four days. Of the twenty one autopsies in these cases, the ureter or pelvis was obstructed by calculus in fourteen, and in three growths obstructed the ureters. Of thirty-six cases in which there was absolute or nearly total anuria, in eleven the anuria lasted more than four days, and in seven more than fourteen days. In seven of the forty-one cases no uræmic sypmtoms occurred, although the duration of the anuria was from five to eleven days, and caused death in at least three of the cases. In a number of the cases more than a week elapsed before the indications of uræmia began; in most cases it was from the seventh to the ninth day. In twelve of the forty cases, vomiting was present at some period. Diarrhœa was noted in only six cases. Insomnia and restlessness were observed early in a number of the cases. Pronounced delirium and general convulsions were rare. Muscular twitchings were observed in about one-fourth of the cases. The mental faculties were often but little impaired. Death was usually preceded by drowsiness, if death were deferred more than a week. Motor paralysis was not noted in one of the forty-one cases. In four cases there was a urinous odor in the breath. Contraction of the pupils was a common and characteristic symptom. The temperature was elevated in only one of these cases. In the last days of life the temperature was apt to be subnormal. On comparing the symptoms of human obstructive and experimental obstructive uræmia, it would be found that vomiting was an early sympotm: that marked muscular prostration was usually present in both: that delirium and paralysis were absent in both: and that in the

terminal stage fibrillary twitchings were common in both and general convulsions were exceptional. The most important clinical resemblance was that the temperature was normal or slightly subnormal. A patient with both ureters blocked might live two weeks, yet a dog with both ureters tied did not live more than one week. This difference could hardly be ascribed to the shock of the operation. The pupils were much more apt to be contracted in man than in dogs. When the urea in the blood of a dog accumulated beyond a certain point (five per cent.), it was excreted by the intestine. It would seem probable that the pathological conditions in nephrectomized dogs were essentially those which were responsible for the symptoms of obstructive uræmia in human beings. Unfortunately we had no definite knowledge of the condition of the blo o in cases of obstructive uræmia in the human subject. It should be remembered that uræmia was not a specific intoxication, but is due to the accumulation of several classes of toxic substances in the blood when the kidneys were unable to do their work properly.

Dr. James Ewing asked if in the liver of the dog any condition resembling that found in cases of eclampsia had been observed—in other words, was there any indication of a hemorrhagic hepatitis?

Dr. Herter replied that he had observed this condition of the liver in some cases of puerperal eclampsia and a somewhat similar condition in some of these dogs, but he did not feel sure that the two conditions were identical.

Dr. Ira Van Gieson expressed his high appreciation of work of the class represented by this paper. He said that he had induced uræmia in some animals by injecting the serum from uræmic patients, but his observations had been too few to be of much value at the present time. He predicted that bleeding would come into favor again as a therapeuic measure, simply because of its removing toxic substances from the blood. The examination of the cells of the cerebellum in three uræmic cases that he had studied showed, in slight degree, the mark of toxic degeneration—a resolution of the cytoplasmic elements of the cell. Four rabbits were injected with the serum of uræmic cases, in small amounts and cumulatively. He preferred to introduce a time element rather than to give the serum continuously up to a fatal result; he preferred to have from six to forty-eight hours elapse before death, as this offered a better standard of comparison. The animals showed an œdema of the upper extremities and died with œdema of the lungs. The pleural cavities contained over an ounce of transuded material—a condition that he had never seen in any other experiments on rabbits. The temperature dropped from 103° to 99° F., and remained so for some time after the injection. An increase of temperature in a rabbit was very easily produced, but a decrease in the temperature was a matter of much greater significance.

Dr. Herter, in closing, said that he was inclined to agree with the last speaker regarding the time element in these experiments. It probably enabled one to detect with accuracy smaller differences of toxicity, but by the method that he had employed the differences had been sufficiently striking to lead him to continue it in order that he might make fair comparisons with the earlier case. He was very strongly disposed to accept the statement that bleeding would become in the future a much more frequent therapeutic measure, yet it should be remembered that these conditions were often very complex. The most favorable conditions for bleeding were: a good heart action and a high-tension pulse, moderate anæmia only, and intense dyspnœa. The relief to the dyspnœa was most striking, even when the administration of arterial dilators gave little or only very temporary relief.

Aortic Valve with Only Two Segments; Adult Heart; Congenital Origin.—Dr. E. P. Shelby, Jr., presented a specimen that had been removed from a man, forty years of age, admitted to Bellevue Hospital on December 12, 1896. He gave a history of having suffered since infancy from shortness of breath and nervousness. He did not remember having had rheumatism or chorea, or any of the infectious diseases of childhood. The only serious illness that he had ever had was an attack of pneumonia, which had occurred in his twenty-fifth year. He had been a steady drinker of whiskey and had used tobacco to excess. He had never had any venereal disease. Two weeks before coming to the hospital he had caught cold and had become feverish, had felt a soreness in the chest, and had begun to cough. After a few days he had noticed small dark clots of blood in his sputum. Then he had become very short of breath and his feet had begun to swell. On admission he was slightly cyanosed, and was suffering greatly from dyspnœa. The respirations were rapid and shallow. On account of the loud rapid breathing physical examination was unsatisfactory, but an obstructive murmur at the mitral valve was discovered, and moist râles were heard over both lungs. On the eighth day after admission, he became delirious, but remained in this state only a few hours. At this time there was cyanosis more marked. The respirations were regular, but rapid and shallow. The apical impulse was in the sixth interspace in the nipple line, and was irregular in force and rhythm. A well-marked purring thrill was felt. The area of cardiac dulness was continuous with dulness over the lower lobe of the left lung. There was a presystolic murmur, with maximum intensity at the apex. The sounds at the other valves were normal. The respiratory murmur was absent over the lower part of the left lung, and there was distinctly tubular breathing. Pleuritic friction sounds were heard over the right lung, and here and there were a few fine moist râles. The patient died in a few hours from the time of this examination.

The autopsy was made forty-eight hours after death. The body was well developed and of medium size, but poorly nourished. The brain was normal. The left pleural cavity was obliterated by firm old adhesions. There was a slight excess of fluid in the right pleural cavity, but there were no adhesions. The pericardium was tense, and was slightly displaced downward and to the left by the adherent lung. There was a normal amount of serous fluid in the pericardium. There was a thrombus in the left pulmonary artery, just below the point at which the first large branch is given off. About half of the lower lobe of this lung was consolidated, and on section presented the appearance of an infarction. There were congestion and œdema in the upper lobe. The right lung showed two small circumscribed areas of fibrinous pleurisy which corresponded to two small infarctions. In the other parts of this lung there were marked congestion and œdema. The liver weighed three pounds six ounces, was firm, dark red in color, and on section showed the nutmeg appearance of passive hpyeræmia. The spleen weighed six ounces, was soft, pale blue in color, and in its anterior border presented a deep, congenital fissure in which was attached a part of the omentum. The kidneys weighed seven ounces each; the capsule was not adherent, and left a smooth surface on removal. The markings were distinct, the cortex was slightly swollen, and the pyramids were congested. The stomach and intestines were congested. All the cavities of the heart were distended with dark, partially clotted blood, but no firm clots were found. There were great dilatation of the left auricle and slight dilatation of all the other cavities. The walls were pale and rather soft. The tricuspid and pulmonary valves were normal. The

mitral valve would admit only the end of one finger; its cusps were greatly thickened and there were adhesions in the angles between the cusps. In one angle there was a calcareous deposit. The aortic valve had only two segments, an anterior and a posterior, both of which were very thick. The segments were of nearly equal size, the anterior being slightly longer. About the middle of the base of the anterior segment was a small constriction, which caused a slight puckering, but which did not involve the free border. At a point in the aorta which corresponded to the centre of this segment there was a distinct ridge, which seemed to mark the place where a third segment should have been attached. There was a calcareous plaque near the left end of the posterior segment, which did not extend to the free border or the aortic attachment. The sinuses of Valsalva were pouched out. Both coronary arteries were given off from the anterior sinus. There were a few atheromatous patches in the aorta at the upper margin of the sinuses. The valve was quite competent. When freed from blood, the heart weighed fourteen ounces.

The history and the appearance of the specimen, Dr. Shelby said, seemed to warrant the conclusion that this was a congenital affection, probably due to disease during intra-uterine life; and that the absence of one of the segments was caused by the coalescence of two segments at the time of their formation. The specimen illustrated the fact that a valve of this type might be entirely competent and yet have only two segments. It seemed clear that the lesion at the mitral orifice caused all the symptoms. The nearly equal size of the segments showed the wonderful adaptability of these segments to each other. After two small segments had united to form this large anterior segment, the posterior segment appeared to have undergone extra development to meet the requirements of its fellow. The unusual thickness of both aortic and mitral valves, and the calcareous deposits in them, would indicate that there had been during extra-uterine life a chronic endocarditis, but he thought there could be no doubt that the primary lesion had started *in utero*.

Adeno-Carcinoma of the Kidney; Total Thrombosis of the Vena Cava.—Dr. James Ewing presented a kidney which had been removed from a German, forty-eight years of age. The patient gave a phthisical family history, and a personal history of excessive indulgence in alcohol and of syphilitic infection in his youth. Ten months before his death he had noticed a swelling of the legs and feet, associated with headache and vomiting. Urination was then normal. The symptoms disappeared after a short time but returned four months later, and then the urine was at times scanty and bloody, and he had severe pain in the kidney and on urinating. After three weeks these subsided. Six weeks before his admission to the hospital they reappeared, and in addition the abdomen began to swell. The stools were light colored; the superficial abdominal veins were considerably distended. There was no abdominal pain; very slight ascites. The urine was alkaline, had a specific gravity of 1.024, and contained five per cent. of albumin and a few blood cells, but no sugar. Physical examination showed a slight quantity of fluid in the chest, with œdema of the lungs; the heart was normal; the spleen was not palpable. While he was in hospital there were no urinary symptoms, but he developed symptoms of obstruction to the portal circulation and to the venous return from the lower limbs. The distention of the abdominal wall was the chief feature clinically. It was thought that there was probably a thrombosis of the portal or mesenteric vein. He was tapped, but this was followed by peritonitis and death in forty-eight hours. At the autopsy, the chamber of the right auricle showed at the opening of the inferior vena cava a round whitish mass, looking like a blood clot. There was no endocarditis. There was also a partially necrotic mass in the region of the vena cava, behind the liver. The vena cava was distended to the diameter of nearly three inches at this point, and was entirely occluded by a large mass of tumor tissue, which proved to have been derived from the original tumor in the kidney. The right kidney showed the appearances of carcinomatous or adenomatous growth arising in the cortex, projecting into the pelvis and infiltrating the tissue around the renal, and passing up the renal veins to the vena cava, where it had grown rapidly. A completely organized thrombus was found in the vena cava below the kidney, reaching into the iliac veins and extending below Poupart's ligament. Another interesting feature was the apparent reconstruction of the circulation through the intestines, spleen, and left kidney, as these organs showed very little venous congestion. The hepatic vein and its smaller branches were occluded by freshly clotted blood. The liver, of course, was extremely congested, but the other abdominal organs were only very moderately so. Another point of interest was the fact that the patient had survived a total thrombosis of the vena cava, this thrombosis having apparently existed for five weeks.

Hæmato-Myelopore.—Dr. Ira Van Gieson presented a specimen from one of the cases of hæmatomyelopore described by him at the last meeting, and demonstrated the columnar lesion found in the spinal cord.

The society then went into executive session.

Surgical Suggestions.

Suppurating Wounds.—

R Iodoform.
Salol,
Bismuth subnitrate,
Charcoal,
Cinchona,
Benzoin.....āā p. æ.

—Schwartz, *Journal de Médecine de Paris*, May 2d.

Radical Cure of Congenital Hydrocele.—M. Mencière (*Arch. Clin. de Bordeaux*, No. 6, p. 283, 1897) publishes his observations on two patients affected with congenital hydrocele, upon whom M. Demons employed an operative procedure which has given satisfaction. The operation consists in making a long incision following the greater axis of the tumor; that is to say, from above downward, the incision reaching to the inguinal ring. When he comes to the serous portion he incises it freely according to the method of Volkmann, then he destroys the peritoneo-vaginal sac, cutting it transversely with the aid of scissors. The edges of the serous sac thus formed are brought together and sutured with catgut, in such a way that the testicle is contained in a reconstructed vaginalis, less extended than the former. From below this new vaginalis he excises the serous coat to a certain height, so that the peritoneo-vaginal canal is incontestably destroyed. Then, considering the superior part of this canal as a hernial sac, he procedes with a truly radical cure of hernia. Thus the inguinal ring is closed, the portion of the peritoneo-vaginal canal situated immediately beneath is excised, and the testicle is contained in a new vaginal cavity having no communication with the abdominal cavity. This method differs from that described by Faure, in which the operator is content to open the vaginalis and trust to an adhesive inflammation to obliterate the peritoneo-vaginal canal. Here the surgeon not only obliterates the canal, but closes the inguinal ring. Instead of leaving the vagi-

nalis to mend itself, some sutures of fine catgut reconstruct it immediately. The operator can reconstruct the vaginalis and afterward close the inguinal ring. In cases of congenital hydrocele, it is preferable first to close the inguinal ring and then proceed with the repair of the vaginal cavity.

Treatment of Injuries of the Liver.—In penetrating wounds the existing wound can be enlarged and converted as far as possible into the incisions about to be described. If the site of injury is in the left lobe, or is undetermined, a median incision should be made; in wounds of the right lobe a curved incision along the lower border of the costal cartilages and to the right of the rectus muscle is to be preferred. In some cases these may be combined, thus forming an angular incision. Since by far the greater number of wounds of the liver are located on the ventral or lateral aspects of the viscus, these two plans of attack will nearly always suffice. In wounds situated posteriorly, the lumbar incision is hardly to be recommended on account of the thickness of the muscular walls, and the fact should be borne in mind that, as reported by Lannelongue, the thoracic wall can be resected along the anterior portions of the eighth, ninth, tenth, and eleventh costal cartilages, for the pleura does not extend down to this part of the chest wall. The method of Lannelongue consists in an incision parallel with the thoracic border and two centimetres above the same, beginning three centimetres from the border of the sternum and ending at the junction of the tenth rib with the costal cartilage. The retraction of the divided muscles exposes the costal cartilages to be resected; they are carefully freed from their attachments and cut through with cartilage scissors. Then, if the ends of the ribs are retracted and pressed apart, nearly the entire extent of the convexity of the liver can be made accessible.—SCHLATTER.

Capital Operations without Anæsthesia.—1. Patients with limbs so crushed as to require amputation, who are in good general condition, should be operated on at once. 2. Those who present evidences of severe shock and great loss of blood, should be treated by external heat and stimulants, including the hypodermatic use of whiskey, digitalin, strychnine, and nitroglycerin, and the rectal injection of whiskey, strong coffee, and hot water. The crushed limb should be disinfected as completely as possible, and 6 to 1,000 saline solution of not less than two quarts for an adult be allowed to flow into a vein, this infusion to be repeated, if necessary, at intervals of a few hours, according to the effect produced. 3. If by these efforts complete reaction should be established, anæsthesia and amputation should be proceeded with as in ordinary cases. 4. If, however, a moderate or doubtful reaction only should occur, the propriety of a rapid amputation without anæsthesia should be seriously considered, if the consent of the patient be gained. 5. The complete disinfection of crushed, lacerated, dirty, and infected limbs usually cannot be accomplished. 6. The sooner such limbs are removed, the better, provided the patient's life be not lost in the operation. 7. If, notwithstanding the vigorous treatment just mentioned, an amputation, either with or without anæsthesia, be fraught with great risk, it is far better to disinfect as thoroughly as possible, drain well, pack all open spaces, and take the chance of infection, which in most doubtful cases is probably less than the risk of death from shock following operation.—BUCHANAN.

Treatment of Tuberculous Cavities.—Equal parts of iodoform and calomel form a harmless and powerful antiseptic dressing for the cavities left after operating for tuberculosis of the bones, joints, tracheotomies, etc. It promotes the formation of a thin eschar, thus preventing the sticking of the dressings to the tissues. After hæmostasis is secured, the powder is sprinkled over the walls of the cavity with a small pointed spoon and rubbed in with a gauze pad held in the forceps. As much as four and one-half grams can thus be applied without inconvenience. The wound is afterward kept open with a tampon.—SPRENGEL, *Chl. f. Chir.*, February 6th.

Remote Effects of Bone Trauma.—The practical propositions involved in this paper are based on inflammation or irritation in bone following injury and the sequel resulting therefrom. 1. Resolution, including a complete restoration of the bone to its normal condition, occurs in the vast majority of cases. 2. Resulting in rarefying ostitis. Condensing ostitis, or a combined rarefying and condensing ostitis, which may remain as a more or less permanent condition: if slight in degree, giving rise to no well-marked subjective or objective signs after the process becomes arrested. 3. If the process continues for a period beyond a few months, well-marked and unmistakable changes in the physical condition and appearance of the bone will become manifest. 4. A persistent acute or chronic osteomyelitis will also give rise to unmistakable physical changes in the bone. 5. A persistent chronic osteo-periostitis will give rise to thickening of both periosteum and bone of a character that will be readily recognized if the bone is so situated as to admit of easy surface examination. 6. If the products of inflammation in cases of rarefying ostitis or in osteomyelitis become infected with pus-forming microbes, the suppurative process will become plainly evident, except in cases in which the process is very limited, giving rise to a small abscess in the bone which may be indicated only by subjective symptoms. 7. The injury and irritation following may establish a *locus minoris resistentiæ*, which may become the seat of tuberculous infection with certain definite results. The length of time after a trauma during which this influence may exist cannot be definitely determined, but it may be assumed in the light of critical practical experience and pathological research that the special predisposition will cease to exist as soon as the effused blood is absorbed, and the protoplasmic elements—the products of irritation or inflammation—have been resolved into new bone or have undergone degeneration and absorption, *i.e.*, as soon as the normal nutrition balance is restored. I do not believe there is any scientific evidence or any practical facts that will bear criticism, which will support the assumption that the *locus minoris resistentiæ* may continue for months or years after all signs of the injury and its immediate results have disappeared. 8. There is no evidence to show that a carcinoma or sarcoma may develop as the result of an injury after the immature bone elements have become transformed into tissue of a normal resisting physiological type.—DR. D. S. FAIRCHILD, *Journal of the American Medical Association*, July 10th.

Irreducible Hernia.—From the facts and arguments adduced the following conclusions were drawn: 1. That irreducible hernia is a condition of serious danger, the gravity of which increases with its duration or neglect. 2. That the application of a truss upon an irreducible hernia is not only useless, but harmful. 3. That irreducible herniæ which consist wholly or in part of bowel are very apt to become strangulated. 4. That herniæ consisting wholly of bowel, upon which no truss has been worn, may (even when of large size and of considerable duration) generally be returned by appropriate treatment. 5. That of the cases of hernia in which proper treatment fails to obtain reduction, the great majority are irreducible because of adhesions of, or changes in, the protruded

viscera—conditions which are remediable only by operation. 6. That the most common cause of irreducibility is the presence in the sac of adherent omentum. 7. That the presence of irreducible omentum in the sac of a hernia is a source of constant danger, which can, nevertheless, be remedied by an operation of extremely small risk. 8. That herniæ containing irreducible bowel are more dangerous than those containing only omentum, and that as the danger of operation increases with the magnitude of the hernia and with the occurrence of adhesions, these herniæ should be operated upon as soon as they are proved by the failure of proper treatment to be irreducible.—Dr. Warrington Howard, meeting of the Royal Medical and Chirurgical Society, May 26th.

Nævi.—Mixed nævi and venous nævi, unless they are adapted for excision, are best treated by electrolysis; and this electrolysis should be done very patiently, a little at a time, with a long interval between each use of the needles, to get the full effect of the shrinking of the growth; it is impossible to hurry the process, and in the end one gets the best results by working slowly. Capillary nævi, if they ulcerate, are generally to be left to themselves; this natural cure of them will probably give as good a scar as we should get by the use of caustics.—Dr. Paget, *The Clinical Journal*, April 28th.

Correspondence.

OUR LONDON LETTER.

[From our Special Correspondent.]

PARLIAMENT: UNIVERSITY BILL, ARMY MEDICAL SERVICE, RABIES, ETC.—COLLEGE OF PHYSICIANS AND HOSPITAL ABUSE—THE REFORM ASSOCIATION—BRITISH MEDICAL ASSOCIATION—EXPULSION OF MEMBERS—SUNDAY FUND—MORTUARIES—THE GLASGOW CHAIR OF MATERIA MEDICA.

[London, August 1, 1897.]

Both houses of Parliament met this morning to close the session, and members are now released for their holidays. There has not been much done during the week. The London Universities bill has been slaughtered with other innocents, but the government proposes to introduce it next session. If it means to pass it they must bring it forward earlier and submit it to further discussion than is possible at a late period. The army medical service has given rise to several questions in the Commons. It was admitted that thirty-six vacancies were declared and only twenty-eight candidates applied, two of whom were medically unfit, three did not appear, and one was otherwise disqualified. Further questions elicited that for the Indian medical service there were eighteen vacancies for which thirty-eight candidates applied, but five of these were physically unfit. The contrast beween these two sets of figures should surely open the eyes of the government to its folly in supporting the prejudices of the "military advisers" in wrecking the service; if not the country will soon be demanding a change in unmistakable terms. The difficulty of obtaining leave to which medical officers are entitled by the regulations was also brought forward and excuses were made on account of the home establishment being under strength—but whose fault is it that the service is undermanned? Rabies, muzzling dogs, glanders, and the late water famine in East London were also subjects of questions.

The Royal College of Physicians, as I have already informed you, has expressed its inability to undertake a thorough examination of the question of hospital abuse. But the Reform Association is not discouraged. Rather is it determined to continue to agitate the question. At the dinner of the association last week Mr. Timothy Holmes was present. He worked at this question when it was agitated in 1871, but I cannot see any change for the better since then; in fact, the evil has extended and is a blight on the profession. The Hospital Sunday Fund has had no good influence in this direction. Rather has its tendency been in the contrary direction and its management must be reformed. Its rule as to the relation of maintenance and administration is calculated to stimulate reckless expenditure, and its officials assume an infallibility and assert their views in terms discourteous and offensive. A change is urgently called for.

The Mercers' Hospital dispute seems to be extending its area. The governors hold that they removed Mr. O'Grady from the surgeoncy by their resolution dismissing the whole staff. But Mr. O'Grady denies their authority and is prepared to appeal to the courts. Meantime, being himself a governor, he could not be prevented from visiting the hospital and holding himself out as surgeon to it. The next move was a motion "that the board dispense with the services of Mr. O'Grady as governor." Whether governors can thus remove one of their number who demands reforms opens a still wider question.

The expulsion of the two members of the British Medical Association for accepting posts in the Adelaide Hospital is causing some searchings of hearts. It is true the membership confers no advantage beyond receiving the journal and admission to the meetings, and the members expelled may therefore afford to laugh at the solemnity assumed by the ruling clique. There is, however, another aspect of the matter. If the stigma of expulsion is to be placed on women for taking posts in the colonies vacated by others in defence of the honor of the profession, how about the men in London who have eagerly grasped appointments in precisely similar circumstances? Are they too numerous to attack? Is it not notorious that the *Journal* has basely deserted the men fighting in such a case and even supported their supplanters? Perhaps after the criticism on the editor's conduct at the meeting here such scandals may not be repeated. But to return to the expulsion. If this is to be a precedent, it would be interesting to learn whether any of the new staff of Mercers' Hospital are members of the Association, and further whether any of the numerous candidates for those appointments are also members. And further, if so, are they to be arraigned and if not why not?

We have it now on the authority of the chairman of the county council that arrangements have been made which will obviate the necessity of holding inquests in public houses, good mortuary accommodation having been provided in nearly all the London districts. Such mortuaries are increasingly used for the reception of corpses awaiting interment in other than inquest cases. The public is recognizing the advantage of removing corpses from crowded houses to properly arranged mortuaries in which sentiment is respected and sanitation satisfied. The extension of the mortuary system is therefore a fact on which London and its authorities are to be congratulated.

An exhibition was held last week of medical and hygienic articles. It seems to have been designed to take the place of the museum of the British Medical Association, and the exhibits were much the same as those annually shown at the meetings.

Dr. Stockman succeeds the late Dr. Charteris as professor of materia medica and therapeutics at the University of Glasgow.

OUR VIENNA LETTER.

(From our Special Correspondent.)

VACATION COURSES DURING SEPTEMBER—KOCH'S NEW TUBERCULIN—REPORTS AS TO ITS THERAPEUTIC VALUE NOT ENCOURAGING—THE AUSTRIAN BOARD OF HEALTH AND MEASURES AGAINST THE PLAGUE—MOSCOW AND ACCOMMODATIONS FOR MEMBERS OF THE CONGRESS—SOME DISSATISFACTION WITH PRICES DEMANDED FOR RESERVED ROOMS.

VIENNA, July 30, 1897.

THE vacation courses open here on Monday August 2d, the programme for them having been out for some time. The giving of a series of regular courses during the vacations was tried more or less as an experiment last year. The result was so satisfactory that now these courses are to be made a special feature of the medical work here. The announcements for September especially show that an effort is to be made to rival in Vienna the Berlin vacation courses, which for years now have attracted a large international attendance. American visitors to the international congress at Moscow will have an opportunity on their way home to see the methods of the Vienna school and get an idea of medical life here notwithstanding that it is vacation time.

Professor Koch's new serum was not received very enthusiastically by the profession here, and observations made with it do not seem to confirm even the limited claims that its inventor now makes for it. The Vienna school has always been much more interested in pathology than in therapeutics, and new remedies generally are received very coolly and tried in a conservative scientific way that usually reduces considerably the enthusiastic claims of the discoverer. Even when Koch's tuberculin first came out and the whole medical world became so completely wrapped up in the demonstration of the effectiveness of the new remedy, Vienna went on in the even tenor of its way and calmly awaited developments. That from various sources there should come unfavorable reports as to the action of the tuberculin, even when supplied directly by the commercial house to which Koch has intrusted its preparation, is not surprising, for most observations made with it even in Germany have not been distinctly favorable; while from other countries the reports would seem to be distinctly unfavorable.

From a series of cases reported here it is clear that gradually an immunity against the action of the tuberculin itself is acquired, and that large doses of it may then be borne without any consequent febrile reaction. This does not include protection against the tubercle bacillus itself, however, or its products. Even when the patient under treatment fails to react to the tuberculin, bacilli may be found in his sputum and the area of dulness in his lungs may be demonstrated to be increasing in size. In some cases during the treatment bacilli have disappeared from the sputum, but in no case in which an area of dulness in the lungs could be demonstrated has that been found to diminish in size. On the other hand, patients who had been gaining in weight before they began the treatment, *i.e.*, with only the ordinary constitutional hygienic and dietetic measures, have been known to lose in weight after the injections were commenced. This opinion as to the doubtful value of the new tuberculin seems to be shared by most of the clinicians here who have tried the new remedy, and they are not few in number. That it will be of certain usefulness in the early diagnosis of doubtful cases seems to be generally admitted, but therapeutically it is more than likely to share the fate of its predecessor in the same field and after exploitation for a time be allowed to drop out of use.

One of the surprising reports about it, considering the well-known thoroughness of its inventor in such matters, is that the preparation is not always sterile. A number of slight abscesses and interstitial exudations that were sore for some days having followed its use, cultures were taken from a number of samples and pus micro-organisms were sometimes found to be present. This is probably due to the fact that the preparation is put up in wooden-stoppered bottles, for continental use at least; that these become soaked with moisture from the underlying serum, and so form an excellent culture ground for micro-organisms. It is a bit of mechanical imperfection, an oversight that one would scarcely expect under the circumstances, however, and that will often prove annoying in its consequences to the practitioner.

Though the Austrian plague commission's official report declared that the plague was not under ordinary circumstances very contagious and that the infection was not liable to be carried in fomites, the Austrian health authorities consider it advisable to take certain special precautions against its possible introduction. Professor Weichselbaum has been asked in his official capacity as state medical counsellor to furnish the government physicians with the data and the material necessary to insure the prompt bacteriological recognition of the disease should suspicious cases occur. He has been asked too to open a course at the Pathological Institute in which the characteristics of the bacillus will be minutely described and specimens and cultures of it shown, so that its observation may be a matter of practical experience.

Austria has at best but a limited seacoast, though that of course is in dangerous communication with the East through the Mediterranean. The additional precautions seemingly are taken not so much because there seems from a scientific standpoint any liability of the introduction of the plague as because public opinion demands some practical application of the governmental investigation of the disease. Money for purely scientific purposes is not usually voted willingly and some return must be shown for the expense incurred. The Austrian commission's report as to the non-contagion through fomites has been formally confirmed by the German commission with Koch at its head, which finds that the bacillus is incapable of growing after it has been eight days outside the body. As has been often pointed out before, the only real danger that may exist is in the possibility of rats on shipboard, the animals being very liable to the disease and being probably the great infection carriers in the epidemics that occur.

The tickets for members of the congress at Moscow, together with the railroad tickets that are to carry them free from the Russian border to Moscow and back, are at last reaching their destinations. The doctors are to travel practically as government officials and the privileges accorded are ample. Notifications of the reservation of rooms for those who wrote to the secretary for that purpose are also at hand. These are not so satisfactory as the railroad tickets, and a good many in Vienna seem to be of the opinion that there will be some exploitation of visitors by hotel people—that in fact there will be a repetition of some of the unpleasantness experienced at Rome during the last International Medical Congress. Moscow is of course much larger than Rome; the last Russian census taken last year gives it about 900,000 population, and one might reasonably conclude that 7,000 visitors (that is the number of free railroad tickets issued) would easily find accommodations without the possibility of crowding. Moscow's floating population, however, is very small; in the matter of hotels she is decidedly provincial, and so her capacity for the reception of visitors is probably to be tested to its utmost limit. It is to

be hoped that some of the presentiments in the matter of discomfort and expense that are now rather freely expressed may not be realized. The committee of arrangements has shown so far its thorough ability to cope with the various and at times vexing problems that arose, and it may be confidently depended on to put the finishing touches to its work in arranging for the convenience of its guests.

New Instruments.

URINATING-TUBE FOR USE WITH WOUNDS OF THE PERINEUM.

By J. G. CROSS, M.S., M.D.,

ROCHESTER, MINN.

THE instrument herewith presented to the profession was devised for use with female patients with surgical or traumatic wounds of the perineum not yet healed, neccessitating urination while in the recumbent position. It consists simply of a conducting tube of annealed glass, so fashioned that its upper end fits the

parts about the meatus urinarius without pressing upon the urethra, and by a suitable curve avoids contact with the perineum, but carries the urine into the receptacle below. The illustration makes further description unnecessary.

The advantages of this tube over the catheter in the class of cases mentioned are readily seen. It is easily rendered sterile, being entirely of smooth glass, annealed to withstand heat. Its use gives the patient no discomfort, and requires no especial skill in the attendant. The urine is kept entirely away from the wound, even the drop that usually follows the withdrawal of a catheter from the urethra. With simple directions as to cleanliness, it can be safely left in hands to which the physician would hesitate to intrust the care and use of a catheter.

The urinating-tubes are made by Tiemann & Co., of New York.

The Future of Greek and Turk.—In the preface to his "Impressions of Turkey during Twelve Years' Wanderings," recently published by the Putnams, Prof. W. M. Ramsay says that he was strongly impressed with one great contrast between the average Turkish and Greek villages. In Turkish villages the women, so far as he could judge from sight and report, are feebler and poorer in both physique and mind (owing to their hard lot in childhood); whereas the Greek women struck him as being better and morally higher than the men, physically good, and intellectually well developed. Therein he believes lies the future of the two races. In the one case there is a rich soil from which future generations acquire strength and moral vigor; in the other a stunted and impoverished motherhood produces a poor and diminishing people. "In the condition of the Turkish women lies the reason for the steady degeneration of the Turkish people."

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 14, 1897:

	Cases.	Deaths.
Tuberculosis	155	105
Typhoid fever	52	9
Scarlet fever	81	3
Cerebro-spinal meningitis	1	1
Measles	79	5
Diphtheria	157	27
Laryngeal diphtheria (croup)	1	0
Chicken-pox	4	0

The Healing of Wounds in the Negro Races.—Dr. Plehn (*Deutsche med. Woch.*, 34, 1896) says that infected wounds are rare among the negro races in Africa, and that severe wounds heal sooner than do like wounds in Europeans. He is of the opinion that specific pus organisms are not common in Kamerun or that the tissues of the negro are resistant.

Gluttony has its victims, hardly less numerous than other vices. To overeat is to overburden the digestive organs to such an extent that it will be impossible for them to perform their duties properly, deleterious products are created, and health is finally destroyed. No man can overeat and live out his expectancy. It is as important to inquire into the habits of a man proposed for insurance in this respect as in drinking. Men have been known to kill themselves in this manner. A prominent judge in New Jersey used to say such men dig their graves with their teeth—and it is so.—*The Medical Examiner.*

Water Purification.—Dr. Thomas B. Carpenter concludes an article on this subject (*Albany Medical Annals*, April, 1897) as follows: 1. Purification of water should be municipal, not domestic, because domestic filtration cannot be relied upon. 2. Domestic purification can be best obtained by heating to 80° C. for twenty minutes. 3. All evidence available at the present time favors the superiority of "natural" filtration for purification on a large scale. 4. With few exceptions, all American cities furnish their inhabitants a water that is at least suspicious, and in most cases polluted. 5. A continued typhoid mortality of over twenty per one hundred thousand means a polluted water and a preventable sacrifice of human life.

"Charaka-Samhita."—Part sixteen of the translation of this curious Hindu medical classic closes the section on the pathogenesis of disease and on timely and untimely death, and takes up that on diagnosis. The three especial means for ascertaining the nature of disease are the following of the instructions of the inspired, observation, and inference. The matters about which the inspired lay down instructions, the matters which are apprehended by observation, and the matters which are to be ascertained by inference, and the manner in which they are to be known, are here fully expounded in this lesson. The closing section treats of the several ducts of the body, their contents, and the symptoms pointing to disease of them.

Vital Statistics of Philadelphia.—For the week ending July 31st there were reported to the Philadelphia board of health 396 deaths, 79 less than during the preceding week and 137 less than during the corresponding week of the previous year. Of the whole

number 175 occurred in children under the age of five years. The principal causes of death were as follows: Cholera infantum, 60; pulmonary tuberculosis, 36; marasmus, 19; pneumonia, 17; diphtheria, 16; inanition, 13; carcinoma, heart disease, inflammation of the brain, each 12; apoplexy, convulsions, each 12. There were reported during the week 84 cases of diphtheria, 63 of typhoid fever, and 50 of scarlet fever.

The Cause of the Heart Beat.—As the result of an experimental investigation, Porter (*Journal of Experimental Medicine*, July, 1897) arrives at the conclusion that the cause of the rhythmic contraction of the ventricle lies within the ventricle itself. It is not dependent upon a single localized co-ordination centre; the co-ordinative mechanism, whatever it may be, is present in all parts of the ventricle. The apex of the mammalian heart possesses spontaneous rhythmic contractility. Assuming that the general belief in the absence of nerve cells from the apical part of the ventricle is correct, this investigation indicates that nerve cells are not essential to spontaneous, long-continued co-ordinated contractions of the heart muscle.

A Pen Sketch of Pasteur.—In a recent number of *Good Words*, Mrs. Percy Frankland quotes the following description of the great French chemist and man of science, as he appeared a short time before his death: "Weary, traversed with deep lines, his face and beard both white, his hair still thick and nearly always covered with a black cap, the grand forehead wrinkled, seamed with the scars of genius, the mouth slightly drawn by paralysis, but full of kindness, as expressive in pity for the sufferings of others, as indifferent to personal pain, and above all the living thought which still flashes from the eyes beneath the deep shadow of the brow—this is Pasteur."

The Birthplace of the American Medical Association.—The Philadelphia meeting was called the semicentennial, but really to New York belongs the honor of being the birthplace of the American Medical Association. The meeting of physicians held in this city in May, 1846, was properly the first meeting of the association, although it was then without name or other evidences of a formal organization. But it was born then and here—and not one year later in Philadelphia. A baby has no name and not much of a constitution the day he is born, but he's a baby for all that, and when he has grown to manhood, he counts back his years to the day he came into the world, and not to the time he received a name or first encased his nether limbs in knickerbockers.—*Pediatrics.*

What Next?—The latest association formed, according to *Nature*, is for the "Harmonious Development of Faculties," an object which certainly is deserving of sympathy. We may expect soon to hear of the amalgamated societies for the promotion of idiocy. The "association" business is being very much overdone these days, apparently.—*Medical Age.*

The Value of Sterilized Milk.—Dr. Barton draws the following conclusions from a careful study of this subject: 1. Completely sterilized milk, if administered without any fresh food, will undoubtedly sooner or later produce scurvy. 2. Milk that is raised to the boiling-point, or, better, to within two degrees of the boiling-point, and maintained there from five to ten minutes, is "comparatively" sterilized, and will never produce scurvy, and is almost free from pathogenic organisms. 3. Completely sterilized milk, if administered at once in perfectly clean bottles, spoons, or cups, can be relied upon as being free from any pathogenic micro-organisms. 4. The heating of milk alters very little, if at all, its nourishing qualities. 5. All kinds of sterilized milk, if free from added chemicals, can become foul as quickly, if not more quickly, than ordinary fresh milk. 6. All sterilized milk that is put into hermetically sealed vessels, and which can keep fresh in them for many days, will produce scurvy unless some fresh food is administerd daily. 7. Milk that is boiled directly over a fire will undoubtedly cause constipation. If the milk be placed in a vessel which stands in another vessel containing water, and the water be brought to the boiling-point, its antiscorbutic properties are not lost and it does not cause constipation.—*British Medical Journal.*

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the United States Marine Hospital service during the week ended August 14, 1897:

		Cases.	Deaths.
[illegible]	[illegible]		
Small-Pox—Foreign.			
[illegible]	[illegible]		
Hongkong, China	June 12th to 19th	..	2
[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]		
Calcutta, India	June 19th to 26th	..	3
[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]		
Madrid, Spain	July 26th	..	2
[illegible]	[illegible]		
Cholera.			
Osaka and Hiogo, Japan	June 27th to July 1st		
Calcutta, India	June 19th to July 3d		
[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]

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Original Articles.

CLASSIFICATION AND SURGICAL TREATMENT OF ACUTE PERITONITIS.[1]

N. SENN, M.D., PH.D., LL.D.,

OF CHICAGO.

AN intelligent and systematic discussion of the treatment of acute peritonitis must necessarily be based on a rational classification. A great deal that has been said and written on this subject is worthless, owing to a lack of a proper classification. The classification should include the anatomy, pathology, and etiology of the disease. It is especially important in the discussion of the surgical treatment of peritonitis, before an audience composed of physicians and surgeons, to make a clear distinction between the different clinical forms with a view of pointing out the limitation of purely medical treatment and the legitimate scope of surgical intervention. The clinical classification which I here suggest appears to cover the ground fairly well, but would be incomplete without an exemplification from other standpoints, and for this reason I have prepared the following:

Syllabus of Classification of Acute Peritonitis—*Anatomical.*—Ectoperitonitis, endoperitonitis, parietal peritonitis, and visceral peritonitis, viz., mesenteritis, epiploitis, perigastritis, peri-enteritis, peri typhlitis, peri-appendicitis, pericolitis, perihepatitis, perisplenitis, pericystitis (urinary and gall bladder), perimetritis, perisalpingitis, peri-oöphoritis, pelvic peritonitis, diaphragmatic peritonitis.

Etiological.—Traumatic peritonitis, idiopathic peritonitis, perforative peritonitis, metastatic peritonitis, puerperal peritonitis, peritonitis infantum, fœtal and intra-uterine peritonitis, peritonitis neonatorum.

Pathological.—Diffuse septic peritonitis, putrid, hemorrhagic, suppurative, serous, and fibrino-plastic peritonitis.

Bacteriological.—Streptococcus infection, staphylococcus, pneumococcus, bacillus coli commune, gonococcus, and tuberculous infection.

Clinical.—Ectoperitonitis, general septic peritonitis, perforative, circumscribed, hæmatogenous, visceral (see under anatomical), pelvic, puerperal, and subdiaphragmatic peritonitis.

1. Ectoperitonitis.—An inflammation of the attached side of the peritoneum is called ectoperitonitis. As compared with inflammation of the serous surface, this form is characterized clinically and pathologically by intrinsic tendencies to limitation of the inflammatory process. The mechanical and anatomical conditions for diffusion of the infection are less favorable than when the free surface of the membrane is affected. It may become quite diffuse, however, when the cavum Retzii or the retroperitoneal space on either side of the spinal column is the seat of a suppurative inflammation. In infected wounds of any part of the abdominal wall in which the peritoneum is exposed, but not perforated, the primary ectoperitonitis is occasionally followed by the extension of the infection to the serous surfaces through the lymphatics, or the direct extension of the infective process through the tissues until it reaches the endothelial lining. Peritonitis of visceral origin is always preceded by ectoperitonitis.

The surgical treatment of an ectoperitonitic suppurating focus is curative and prophylactic. The prophylaxis consists in the prevention of rupture of the contents of the abscess into the free peritoneal cavity, by means of an extraperitoneal incision and drainage.

Suppurative inflammation of the loose connective tissue in the cavum Retzii often leads to extensive ectoperitonitis, occasionally to perforation into the peritoneal cavity, septic peritonitis, and death. Leusser found that the loose connective tissue between the peritoneum and the abdominal muscles is divided into two layers by a plane of fascia which is inserted into the upper border of the symphysis. An abscess in this region may therefore be submuscular or prevesical; the former occupies the space between the fascia and the muscles, and assumes an ovate outline with the pointed extremity of the swelling directed downward; an abscess behind the fascia, a true prevesical abscess, resembles in outline the distended bladder. The indications for prompt surgical interference are particularly urgent when the abscess is subperitoneal, as it is in such cases that the peritoneum is extensively involved, and the danger is greatest of extensive burrowing of the pus and perforation into the peritoneal cavity most frequently takes place. The proper treatment of an abscess in the cavum Retzii is an early and free incision made in the same manner and with the same care as in operations for stone in the bladder by the suprapubic route.

2. General Septic Peritonitis.—I understand by a general septic peritonitis an inflammation of the entire peritoneal sac, the result of most virulent infection, the patients dying not so much from the effects of the inflammation as from the rapid introduction into the general circulation of septic material from the peritoneal cavity. In suppurative peritonitis the primary microbic cause is less in quantity or virulence, and a sufficient length of time intervenes between the beginning of the attack and the operation or death for the formation of pus and other inflammatory products. Every acute peritonitis is septic in so far that phlogistic substances reach the general circulation from the inflammatory lesion, but the term septic should be limited to those cases of diffuse septic peritonitis in which, as a rule, death occurs in a few days and before any gross pathological conditions have had time to develop. It is a disease that is almost uniformly fatal with or without operation. The claim of operators to have cured such cases by laparotomy must be accepted with a good deal of allowance. Acute general septic peritonitis is essentially a streptococcus disease. The disease is observed most frequently after perforation into the free peritoneal cavity of an abscess containing septic pus, rupture or perforation of any of the abdominal or pelvic viscera containing septic material, gunshot or stab wounds of the abdomen with injury of the gastro-intestinal canal, and occasionally as the result of infection during lapa-

[1] Abstract of an address delivered before the Twelfth International Medical Congress, held in Moscow, August 19–26, 1897.

rotomy. The gravest form of puerperal sepsis is a diffuse septic peritonitis.

The subjects of this variety of peritonitis die so soon after the beginning of the disease that at the post-mortem or, if the abdomen is opened during life, at the operation no gross tissue changes are discovered. Beside a lightly increased vascularity, nothing is found to indicate the existence of peritonitis. The septic material formed in large quantities and of intense virulence is rapidly absorbed by the stomata of the under surface of the diaphragm, discovered and described by von Recklinghausen. In putrid peritonitis the streptococcus infection is complicated by the presence of putrescible substances which serve as a nutrient medium for saprophytic bacteria which modify the character of the inflammatory product. It occurs most frequently in connection with grave forms of puerperal metritis. Surgery has done much toward its prevention, but very little toward saving life after the disease is once fully developed. Careful analysis of the cases which yielded to laparotomy would undoubtedly disclose the fact that most of them were not genuine cases of general septic peritonitis, but cases of more or less localized inflammation of the peritoneum with or without suppuration.

I have opened, drained, and washed out the peritoneal cavity in many cases of diffuse septic peritonitis, and I am free to confess without a single successful result. All of my patients died in from a few hours to a day or two after the operation, of sepsis, in spite of heroic stimulation and in some cases of frequently repeated irrigation with sterilized water, decinormal salt solution, or mild antiseptic solutions. On the other hand, some surgeons report a fair percentage of recoveries after laparotomy for what they call general septic peritonitis. Krecke has collected one hundred and nineteen cases of laparotomy in general peritonitis, in which there were fifty-one recoveries and sixty-eight deaths. A. J. McCosh operated between 1888 and 1895 inclusive in forty-three cases of general septic peritonitis. Of these thirty-seven died and six recovered, a mortality rate of about eighty-six per cent. A free abdominal incision was made in all, and with few exceptions irrigation was employed.

It is not easy, or always possible, to ascertain the extent of inflammation *in vivo* by opening the peritoneal cavity, and a strong suspicion remains that at least in some of the cases which recovered the peritonitis was not general, or that the operation was performed before the entire serous surface was involved.

A general discussion of the *medical treatment* of peritonitis is out of place here, but a few words in reference to what the surgeon should do and what he should not do in the way of medical treatment when he assumes charge of a case of peritonitis are pertinent to my subject. Stomach treatment must be limited to the administration of liquid food and stimulants. If, as is so frequently the case, nausea and vomiting are prominent symptoms, rectal enemata are of the greatest value. The distressing thirst can often be effectually relieved by high rectal enemata of warm water, and if these are not tolerated by hypodermic infusion. Some authorities favor cathartics, others condemn them and rely on opium. Mr. Tait taught us years ago the value of saline cathartics in the prevention of peritonitis and in its treatment during the incipient stage, and his teachings and practice are not only supported by clinical observation, but have been substantiated by experimental investigations. He has found the most efficient treatment for septic conditions following abdominal section to be thirty or forty grains of sulphate of magnesium, repeated every hour or every other hour until the bowels move freely. I have seen many cases of threatened peritonitis after abdominal section aborted by the timely administration of saline cathartics. If the stomach is intolerant, calomel in small doses, repeated hourly, and saline enemata are indicated. One of the great dangers in peritonitis is rapid distention and paresis of the intestines, conditions which are provoked by opium and which can be most effectually averted by early and free catharsis.

The use of cathartics is, of course, absolutely contraindicated in all cases of peritonitis caused by perforation.

In such cases the use of opium is legitimate and useful, as it diminishes shock, and lessens the extravasation of septic material and its rapid diffusion over the peritoneal surface. Shock, general debility, and, as Fritsch has shown, a weak heart increase the danger from sepsis. Strychnine, camphor, and alcoholic stimulants should be employed early and at short intervals in all cases of grave peritonitis. The application of ice or the cold coil over the abdomen frequently succeeds in diminishing tympanites and should be employed to prevent overdistention and paresis of the intestines when this condition appears, and the state of the peripheral circulation is good. If the heart's action is weak and the capillary circulation sluggish, hot applications are more agreeable to the patient and a better stimulant for the feeble peripheral circulation.

There can be no difference of opinion in reference to the advisability of early *operative treatment* in the management of general diffuse septic peritonitis. Without operation death is certain. An early operation may succeed in arresting further extension of infection in cases in which the disease would become diffuse, and in diffuse cases may occasionally be the means of saving a life which without it would be surely lost. An early diagnosis and prompt operative interference are the conditions *sine qua non* of success. The patient should be properly prepared for the operation, not only with a view of securing absolute asepsis for the field of operation and everything that is to be brought in contact with the wound, but the necessary precautions should also be carried into effect to sustain the heart's action and stimulate the capillary circulation during and immediately after the operation. I am partial to the use of sulphuric ether as an anæsthetic in performing laparotomy for this indication, as it has a less injurious effect upon the already enfeebled circulation than chloroform. The body must be carefully protected against loss of heat, by warm flannel blankets and by bottles or rubber bags containing hot water. The solutions which are to be used for irrigation must be kept at a temperature of 110° to 120° F.

Laparotomy, as a therapeutic resource in the treatment of peritonitis, is of recent date. J. Ewing Mears as early as 1875 operated by abdominal section in a case of circumscribed suppurative peritonitis following childbirth. He advocated at that time surgical intervention in all cases of suppurative peritonitis. Treves reported a case of acute peritonitis treated by abdominal section in 1885, which terminated in recovery, and he recommended the operation in similar cases. During the same year Péan advocated in the treatment of septic peritonitis incision, toilette, and drainage of the abdominal cavity. About the same time Oberst urged energetic surgical treatment in cases of acute peritonitis. In 1886 Lawson Tait reported two cases of acute peritonitis treated by abdominal section, of which one recovered. He advised laparotomy in all cases of peritonitis if an effusion can be demonstrated and the existence of fever indicates the pyogenic nature of the inflammatory product. In 1889 successful laparotomies for septic peritonitis were reported by Demons, Bouilly, Dernuce, Brun, Labbe, and Routier. It is evident that in most of these cases the operation was performed for circumscribed suppurative, and not for diffuse septic peritonitis.

The treatment of peritonitis by laparotomy received

a new impulse when about nine years ago it was found that the disease is so often produced by primary suppurative and perforative lesions of the appendix vermiformis.

Incision.—Authorities are as yet not agreed as to the size, location, and number of incisions. In circumscribed peritonitis the rule is usually followed to open and drain by the shortest and most direct route. In perforation of any organ other than the appendix vermiformis, resulting in diffuse peritonitis, the first incision should always be made at or near the median line. The incision is made above the umbilicus if the gall bladder, stomach, or duodenum is the seat of perforation, below the umbilicus in perforation of any other portion of the small intestines.

Mikulicz makes a sharp distinction in the treatment of diffuse septic and progressive fibro-purulent peritonitis. In the former the abdominal incision should be large, the perforation closed, and the abdominal cavity disinfected and drained. In the latter the adhesions should be carefully preserved and the different pus accumulations opened and evacuated separately. Some surgeons prefer to open the abdomen some distance from the linea alba. Ramsay gives cogent reasons why the incision should be made through the centre of either rectus muscle, where the abdominal wall is thickest and strongest and where the different layers can be sutured separately with the greatest ease, and where for these reasons ventral hernia is least likely to follow. Prolonged drainage is always an important etiological element in the occurrence of postoperative ventral hernia, and this complication is certainly less likely to follow if the incision is made through the muscular portion of the abdominal wall than through the thin fibrous linea alba.

In the treatment of diffuse septic peritonitis the incision should be at least large enough to insert the hand for the purpose of making a careful intra-abdominal exploration. Mr. Bowlby is of the belief that an incision below the umbilicus does not necessarily empty the peritoneal cavity. In cases of peritonitis resulting from perforation of a gastric or duodenal ulcer he advises two incisions (one above and one below the umbilicus) to insure complete flushing. In diffuse peritonitis incisions should be made at a number of points with a view to facilitate irrigation and insure free drainage. The best points will be above the pubes, above the umbilicus, and posteriorly through the lumbar region on each side. In woman free drainage into the vagina by incising Douglas' cul-de-sac will answer an excellent purpose.

McBurney has devised an incision for operations upon the appendix that reduces to a minimum the risks of a subsequent formation of a ventral hernia. "The skin incision is oblique, about four inches in length, crossing at a right angle a line drawn from the spine of the ilium to the umbilicus and about an inch from the spine. This incision is a little to the outer side of the normal situation of the appendix. The fibres of the external oblique and its aponeurosis are not cut, but are separated with great care in the direction in which they run. When the edges of the wound of the external oblique are separated with retractors, a considerable expanse of internal oblique muscle is seen, the fibres of which cross somewhat obliquely the opening formed by the retractors. With a blunt instrument the fibres of the internal oblique and transversalis muscle can be separated, without cutting more than an occasional fibre, in a line parallel with their course, that is, nearly at right angles to the incision in the external aponeurosis. Blunt retractors are now introduced, and these expose the transversalis fascia, which is then divided in the same line; last of all the peritoneum is divided." This incision is an ideal one for the removal of a diseased appendix not complicated by suppurative peri-appendicitis. In the latter event the incision must be large enough to enable the surgeon to see what he is doing in order to avoid injuring important neighboring organs.

Eventration.—A number of surgeons favor eventration, after incising the peritoneal cavity freely, in order to obtain more thorough disinfection. In septic peritonitis the serous coat of the intestines is always damaged and frequently the muscular coat is paretic. These conditions render them liable to be injured and even ruptured when extensive eventration is made, to say nothing of the shock which always attends such a procedure.

I have seen the dangers of extensive eventration many a time in the operative treatment of intestinal obstruction, and wherever possible I am only too anxious to reach without it the object for which operation is performed.

Irrigation.—Some surgeons invariably irrigate; others believe that irrigation does more harm than good and are content to remove the inflammatory products by means of sponges. It is generally conceded that in diffuse peritonitis it is impossible, by any known methods of irrigation, to remove all of the infectious material from the peritoneal cavity, yet the surgeon resorts to irrigation almost instinctively to diminish the danger from this source. The use of strong antiseptic solutions has been abandoned, and sterilized water, decinormal salt solution, solutions of boric acid or acetate of aluminium, and Thiersch's solution are now most frequently used. Whatever solution is employed it should be used at a temperature of 110° to 115° F., and the stream should be sufficiently large and strong to wash out the most remote corners of the peritoneal cavity in the direction of the drainage opening or openings.

Reichel's attempts to treat septic peritonitis, artificially produced in animals, were almost entirely a failure. Irrigation of the peritoneal cavity with sublimate, chloroborate of sodium, salicylic acid, etc., were useless; the animals quickly perished. Somewhat better results were obtained by sponging gently the peritoneal surfaces with gauze sponges and employing the Mikulicz gauze drain. In nine experimental cases in dogs, two recoveries were obtained by this method. Reichel believes successful operative treatment is applicable only in cases of circumscribed empyema-like pus accumulations. Delvet speaks more favorably of the results of irrigation of the peritoneal cavity. He advocates the use of salt solution in operations upon the abdominal cavity, when contamination takes place during the operation, and in the operative treatment of septic peritonitis. Barker has found by experience that a very convenient method of flushing the abdominal cavity is to use a can with three taps to which tubes of large calibre are attached, and thus the peritoneal cavity can be flushed from several points at once, the fluid flowing out through the original incisions. Wiggin believes that the use of peroxide of hydrogen, followed by plenty of decinormal salt solution, is most beneficial in disinfecting the peritoneal cavity and in preventing adhesions.

Continuous irrigation, which is useful in the treatment of septic wounds in other localities, has been suggested in the treatment of general peritonitis.

The propriety of tearing up adhesions for the purpose of making the irrigation more thorough is very questionable and as a rule should be avoided. The so-called toilette by using sponges must be done with the utmost gentleness, if resorted to at all, as all mechanical insults inflicted upon the endothelial surface are sure to aggravate the existing conditions. If it is intended to remove the fluid from the peritoneal cavity, it is better to do so by placing the patient on

the side so as to pour it out instead of removing it by mopping.

Incision of Overdistended Intestine.—One of the most unfavorable conditions in peritonitis is overdistention of the intestines with gas and septic fluid material. A paretic inflamed intestine is permeable to pathogenic microbes, thus adding another fruitful source of infection to the existing septic inflammation. It is natural that surgeons should have made attempts to relieve the distention and unload the intestines of septic material by tapping or by making one or more incisions. Mixter recommends incision of the coils of the paretic intestines at as many points as may be necessary to evacuate them. The intestines should be drawn out of the wound, held over a basin, incised in from one to four places, and thoroughly emptied, after which the coils should be quickly washed off with a hot saline solution, the visceral wounds sutured, the intestine returned, and the abdominal incision closed. I have made visceral incisions in a number of cases in which the intestine had become paretic, and, although but one of the patients recovered, I am firmly convinced that it is almost essential to success in such desperate cases. I place the patient on the side, bring the most distended part of the intestine well forward into the wound, and make a transverse incision about an inch in length opposite the mesenteric attachment. As the intestinal wall does not contract, evacuation should be secured by pouring out the contents from above and below the incision by grasping the intestine at some distance away and bringing it above the level of the incision. By this method several feet of intestine can be evacuated through one incision. After thorough cleansing of the exposed intestinal surface with warm salt solution the wound is sutured in the usual manner and the intestine is returned.

Drainage.—Drainage of the abdominal cavity after operations for peritonitis is an admission of the present imperfect state of surgery; it is an acknowledgment on the part of the surgeon that he has only in part fulfilled the indications for which the operation was performed; it is a confession that he was not able to accomplish what was so much needed and what he so earnestly desired—complete asepsis of the entire peritoneal cavity.

In 1870, during the Franco-Prussian war, Marion Sims made a special study of the cause of death in cases of gunshot wounds of the abdomen. He found that with few exceptions, if the bullet entered above the pelvis the case proved fatal, while similar wounds of the pelvic portion of the abdominal cavity ended in recovery. He ascribed this difference in the mortality to the circumstance that high wounds resulted in extravasation of the intestinal contents which accumulated in the pelvic cavity, while in pelvic wounds the track made by the bullet served as a drainage canal. In 1872 he recommended that in all penetrating wounds of the abdomen and in operations on any of its contents drainage should be established. Very few surgeons at the present day would feel justified in opening the abdominal cavity for peritonitis and dispensing with drainage. Voices have, however, been raised against too frequent resort to drainage, among them Olshausen, who says: "Drainage of the peritoneal cavity is an illusion. Drainage to be of service must be limited to the evacuation of preformed pathological spaces." In perforating wounds he recommends a careful cleansing and complete hæmostasis, avoiding drainage in all recent cases.

Barker relies mainly on thorough flushing and sutures the abdominal incision. He resorts to drainage only in the treatment of putrid abscesses caused by appendicitis. If a drain is used in exceptional cases of peritonitis he advises its removal at the expiration of twenty-four hours.

At present there are three methods of drainage in general use: 1. Tubular drainage; 2. Capillary drainage; 3. A combination of tubular and capillary drainage.

Tubular drainage is especially indicated in cases in which the abdominal cavity contains pus. The tubes employed are made of either glass or soft rubber. Keith's glass drains answer an excellent purpose in draining the lowest portion of the abdominal cavity. They should be slightly curved at the abdominal end so as to reach the floor of the pelvic cavity without making harmful pressure against the bladder. Frequent aspiration of the contents of the drain is necessary for the purpose of removing the fluid inflammatory product as soon as it is formed. The rubber drain answers the same purpose, but is justly accused of causing more mechanical irritation than the smooth glass tube. Prolonged tubular drainage has not infrequently caused intestinal fistula by pressure. It is for this reason that I now almost invariably surround the rubber or glass tube with a few layers of iodoform gauze securely fastened to the tube. In draining the pelvic porton of the abdominal cavity I frequently use two drains of the size of a little finger, one on each side, brought out through the same opening in the lower angle of the wound. In draining in the lumbar regions and through the vagina rubber drains should be employed.

Capillary drains are frequently employed as substitutes for the tubular drain and in addition must often be relied upon as an important hæmostatic resource in arresting parenchymatous oozing. The name of Mikulicz is connected with a special method of gauze drainage of his own device, which has proved of great value in the surgical treatment of peritonitis. The typical Mikulicz tampon is made by taking a piece of iodoform gauze the size of a large handkerchief, to the centre of which a strong piece of aseptic silk thread is stitched. When used it is arranged as a pouch and is carried by means of curved forceps to the bottom of the pelvis and is filled with strips of iodoform gauze, the free end of the silk thread issuing from the mouth of the pouch. When it is desired to remove the drain the gauze strips are drawn out and the pouch is removed by making traction upon the string. In dealing with large cavities requiring an enormous amount of gauze I have learned to fear iodoform gauze, because the cases are by no means isolated in which a drain composed exclusively of iodoform gauze became the immediate cause of death from iodoform intoxication. This is particularly liable to occur in cases in which the patient's kidneys are not functionating properly. I should, therefore, limit the iodoform gauze to an outer layer or two and pack the pouch with ordinary sterilized gauze.

Drainage by sterilized wicking has been popular in Germany for a number of years and in many cases has answered an excellent purpose. It has never found its way to any extent into America, where gauze is employed in preference. R. T. Morris recommends wicks which he employs in a peculiar way. The simplest wick consists of a little roll of bichloride gauze, around which is wrapped a couple of thicknesses of Lister's protective silk. The gauze protrudes a little from each end of the cylinder, and a few small fenestræ in the protective silk allow the serum to reach the gauze elsewhere. When a large gauze packing for the pelvis or abdomen is needed, an apron of the silk can expand over the gauze and protect against intestinal adhesions. This method possesses great advantages over ordinary tubular and capillary drainage, and recommends itself more especially in the surgical treatment of diffuse septic peritonitis. The prolonged contact of gauze with a serous surface is very prone to give rise to permanent adhesions, as

every clinician knows. In employing gauze in draining the peritoneal cavity it is necessary to use long strips which should be inserted in different directions and brought out at the same place and fastened together with a safety pin. Van Hook has shown that the gauze drains more freely if the external ends are left long and placed on the side of the pelvis below the level of the wound. Drainage must be dispensed with as soon as possible, in order to prevent adhesions and to enable the surgeon to close the incision by secondary suturing, an important precaution against the formation of a ventral hernia. The strips should be shortened, and one after the other removed as the indications for drainage disappear.

The simultaneous use of tubular and capillary drainage is an excellent method. It is effected by packing loosely a glass drain of proper length and size with strips of gauze or aseptic wicking. This is especially useful when the inflammatory product is serum instead of pus.

Intra-Intestinal Saline Injections. — The value of saline cathartics in the treatment of incipient peritonitis not caused by perforation is now generally recognized. One of the difficulties encountered in the treatment of such cases is the intolerance of the stomach to food and medicines. A. J. McCosh has succeeded in securing free catharsis and in overcoming the intestinal paresis after operations for peritonitis by injecting into the small intestine, at a point in the jejunum or in the ileum, as high up as possible, a saturated solution containing between one and two ounces of sulphate of magnesium.

After-Treatment.—In all cases the most attentive and careful after-treatment is essential to success. The patients are prostrated by the disease and the operation, and require a stimulating treatment. External dry heat is an important element in counteracting the shock and in restoring the peripheral circulation. The thirst is quenched most effectually by subcutaneous infusion or rectal enemata of water. Strychnine and alcoholic stimulants are best calculated to increase the force of the heart's action and the tone of the arterial circulation. Partial inversion of the body by raising the foot of the bed and also autotransfusion are potent means of inducing cardiac stimulation. A well-fitting abdominal bandage applied firmly exerts a favorable influence in preventing and diminishing abdominal distention. Saline cathartics should be administered as soon as the stomach is in a condition to absorb them. Meteorism can often be relieved by high turpentine enemata and the use of the elastic rectal tube.

As no operation ever secures completely aseptic condition of the peritoneal cavity in cases of general peritonitis, Marmorek's streptococcus antitoxin may prove a useful adjunct to the after-treatment. A number of cases have recently been reported in which the serum appears to have been of great value in the treatment of septic conditions in the peritoneal cavity and elsewhere. It is not probable that it will ever displace the knife in the treatment of diffuse general septic peritonitis, but it is more than probable that it will prove to be an important therapeutic agent in the treatment of peritonitis before and after operation. Opium should be used with great caution. The external dressing should be changed as soon as it has become saturated. If continuous irrigation is decided upon a decinormal salt solution at a temperature of 105° F. is the one usually employed. The current should be small and without much force. The outflow from the peritoneal cavity should be received upon a rubber blanket and conducted into a receptacle near the bed. This method of irrigation recommends itself particularly in cases of diffuse septic peritonitis. In suppurative diffuse peritonitis periodical flushings, at intervals of two or three hours, will prove of value in removing from the peritoneal cavity the fluid products of the inflammatory process. The solutions best adapted for this puprose are a saturated solution of the acetate of aluminium, a three to five per cent. solution of boric acid, or Thiersch's solution. Drainage when once established should be suspended gradually and not suddenly. As soon as the peritoneal cavity and the drain canals are aseptic the external wound should be sutured, to prevent as far as possible the subsequent formation of a ventral hernia.

3. Perforative Peritonitis.—Perforative peritonitis invariably occurs as a secondary affection, usually in connection with an ulcerative or gangrenous lesion of some part of the gastro-intestinal canal. Penetrating wounds of the abdomen with injury of the gastro-intestinal canal must be regarded in the same light as perforative lesions of the abdominal organs in the causation of peritonitis. Perforative peritonitis is manifested by the sudden onset of diffuse pain and tenderness, rigid abdominal walls, fever, vomiting, and the presence of gas in the free peritoneal cavity. According to my observation, peritoneal meteorism in perforative peritonitis caused by appendicitis is rare, while I have seldom found it absent after perforation of any other portion of the gastro-intestinal canal. According to the number and virulence of the microbes which find their way into the peritoneal cavity with the extravasation, the resulting peritonitis is either diffuse or more or less circumscribed. The colon bacillus is invariably present in the inflammatory product, but others, according to the nature of the primary affection, may also be found. Perforative peritonitis must be treated as a strictly surgical disease. The perforation should be found and properly treated before a general septic peritonitis has had time to develop. There are exceptions to this rule in cases in which the perforation is small and the extravasation has produced a limited peritonitis in a locality where it is safe to wait for abscess formation, as is often the case in the region of the gall bladder and appendix vermiformis. Penetrating wounds of the abdomen with visceral lesions of sufficient extent to give rise to extravasation call for immediate laparotomy.

Perforating Gastric Ulcer.—Perforating ulcer of the stomach is found most frequently on the anterior wall near the small curvature. Perforation in this locality is followed more constantly by diffuse peritonitis than is that through the posterior wall. The onset of the disease is always sudden, no matter what the antecedent symptoms may have been. Shock is present in greater or less degree. Vomiting, though frequent, is not constant. Abdominal pain and tenderness, increased by pressure, are nearly always present; abdominal rigidity in the early stage, and distention later on, are frequently noted. The duration of the cases varies from a few hours to five days, most of them terminating in death in less than twenty-four hours.

Mikulicz performed the first operation for this condition in 1883. The first successful case was reported by Kriege, of Berlin. The incision should be made in the median line from the ensiform cartilage to the umbilicus, and enlarged if necessary. If the posterior wall is perforated and the perforation cannot be reached in the usual manner, the anterior wall is incised and the perforation closed through this incision. Before the perforation is sutured the stomach should be emptied through a stomach tube, or through the opening. It is not necessary to excise the margins of the ulcer, as these can be inverted in tying the Lembert sutures. Should the wall of the stomach in the immediate vicinity present an unfavorable condition for successful suturing, an omental flap or graft or requisite size should be sewed with catgut over the line of suture.

Perforating Ulcer of the Duodenum.—This occurs suddenly and frequently without any marked premonitory symptoms indicative of the existence of the primary disease. It is only recently that peritonitis resulting from this cause has been subjected to operative treatment. The ulcer is usually in the first part, but may be in either of the other two portions. The ulcer is simply inverted, excision being unnecessary. Drainage must also be provided for.

Perforating Typhoid Ulcer.—Perforation of a typhoid ulcer, large enough for extravasation to take place into the free peritoneal cvaity, is a fatal accident, death ensuing in the course of a day or two. Perforation, however, does not always terminate in that way. Extravasation is often prevented by the affected part of the intestinal wall becoming attached to an adjacent serous surface, thus protecting the peritoneal cavity against infection. I have seen several cases of typhoid fever in which, about the time that perforation is most likely to occur, circumscribed peritonitis set in which could have been caused only by a perforating ulcer under such favorable conditions, and from which the patients recovered without operative intervention.

Kussmaul, in October, 1885, was the first to excise and suture a perforating typhoid ulcer. Lueck performed laparotomy for the same indication on October 22, 1885.

Wiggin collected twenty-four cases of perforating typhoid ulcer subjected to laparotomy with six recoveries. If those cases are rejected in which the diagnosis is somewhat doubtful, there are seventeen patients with three recoveries. The first successful result was obtained by Van Hook, the second by Netschajans, the third by Abbe. J. Price has recently reported three consecutive operations with as many recoveries, a surgical feat which it will be difficult to duplicate. The writer has performed the operation three times with one recovery. The feasibility and justifiability of abdominal section for perforating typhoid ulcer have been established in view of the fact that all of the patients who have been operated upon would have died without the operation. The operation should be performed as soon as possible after the accident has occurred. The mortality will always remain great, owing to the debilitated condition of the patients and the existence of multiple ulcers.

4. Circumscribed Peritonitis.—This is an inflammation of the peritoneum during which a greater or lesser part of the peritoneal cavity becomes excluded from the original source of infection by the formation of plastic visceral, parietal, or visceral and parietal adhesions. The symptoms appear suddenly, or are preceded by those incident to the primary disease. The intensity of the general symptoms is determined more by the nature and virulence of the microbic cause than the area of the peritoneal surface involved. The clinical course and termination are determined largely by the nature of the bacterial cause, the abdominal location of the primary starting-point, and nature of the environment. Localized peritonitis is most likely to occur outside of the limits of the small-intestine area. It may be confined to the lesser omental cavity, particularly in cases of perforating ulcers of the stomach and duodenum. More frequently it is caused by appendicitis and cæcitis. A very frequent cause of circumscribed peritonitis is inflammation about the gall bladder, uterus, Fallopian tubes, or ovaries. Localized peritonitis can usually be detected only if a demonstrable swelling forms at the seat of inflammation. The mildest form of infection gives rise to fibrino-plastic peritonitis, which leaves temporary or permanent adhesions but terminates without suppuration. Circumscribed suppurative inflammation is always attended by fibrino-plastic peritonitis, the products of which and the viscera which it involves form the abscess wall. In fibrino-plastic peritonitis surgical interference becomes necessary only when intestinal obstruction is caused by adhesions. In circumscribed suppurative peritonitis the pus should be evacuated as soon as the disease is recognized and if possible by an extraperitoneal route.

Acute Tuberculous Peritonitis.—Tuberculous peritonitis, usually circumscribed, occasionally presents itself as a widely diffused acute affection. According to the intensity of the infection or the degree of susceptibility of the patient to the action of the tubercle bacillus, the disease assumes one of the following forms: (1) Tuberculous ascites; (2) fibrino-plastic peritonitis; (3) adhesive peritonitis. Suppuration takes place only when the tuberculous product becomes the seat of a secondary mixed infection with pus microbes. Laparotomy is now a well-established operation in tuberculous peritonitis, but the exact manner in which the operation exerts its therapeutic influence is not well understood. I have obtained very satisfacory results, in cases which resisted laparotomy and drainage, by repeated tappings and injections of two to four drachms of a ten-per-cent. iodoform-glycerin emulsion.

Suppurative Peritonitis.—Suppurative peritonitis is always more or less circumscribed. It is generally associated with fibrino-plastic exudation. The accumulation of pus may be so large that upon opening the abdomen it may appear as though the entire peritoneal cavity and all of the organs contained within were implicated, but a careful examination will almost always reveal the fact that a large part of the peritoneal cavity and many of the organs are shut out from the inflammatory process by plastic adhesions. The appearance and character of the pus are often greatly modified by the admixture of an extravasated material. If the pus is thin and serous, we speak of a sero-purulent peritonitis. It is a serous peritonitis with the formation of pus in sufficient quantity to render the serum more or less turbid. This subvariety of suppurative peritonitis is without exception accompanied by fibrinous exudations which tend to limit the extension of the infective process. Sedimentation of the solid constituents takes place, so that the fluid contains more of the solid matter in the most dependent portion of the affected district.

Fibrino-Plastic Peritonitis.—This is a very frequent form of circumscribed peritonitis. It is usually secondary to an affection of one of the abdominal or pelvic organs. The exudation is often so copious that it has been mistaken for malignant disease. The exudation in the course of time contracts and results in strong bands of adhesion which frequently flex and distort the organs to which they are attached; this has given rise to the term, *peritonitis deformans.*

The surgical treatment of circumscribed peritonitis by abdominal section has yielded very encouraging results. The extraperitoneal route is the one of choice in all cases in which the abscess cavity can be safely reached and efficiently drained. In circumscribed accumulations of pus in the peritoneal cavity in which the seat of the disease must be reached through the free abdominal cavity, the safest course to pursue is to perform the operation in two stages. The first operation then consists in suturing the parietal peritoneum to the wall of the abscess cavity, suturing the abdominal incision with the exception of a space large enough to incise and drain the abscess cavity later. This space is packed with iodoform gauze and two or three days later the abscess is incised and drained. If the symptoms are urgent and the operation must be completed, the contents of the abscess cavity should first be removed by aspiration. In fibrino-plastic peritonitis without suppuration no

attempt should be made to tear the adhesions unless they have caused intestinal obstruction. Some surgeons, however, aim to remove the fibrinous exudate with the pus. Demona had under his care a woman suffering from suppurative peritonitis following suppuration of an ovarian cyst. Her condition at the time of operation was critical. He opened the abdomen, evacuated the pus, removed the cyst, and, with a rough sponge and blade of a knife, scraped the entire surface of the intestine; a most satisfactory recovery followed. There are few surgeons who would follow his example to-day. Adhesions tend to limit the infective process and should be interfered with as little as possible.

5. Hæmatogenous Peritonitis.—Idiopathic peritonitis, so-called, or hæmatogenous peritonitis may occur, but is much more rare than a similar affection of the pleura and pericardium. As peritonitis is always caused by bacteria of some kind, a peritonitis that develops independently of a local cause is the result of an infection through the blood and should be called hæmatogenous or metastatic peritonitis. It has been observed in connection with nephritis, pyæmia, rheumatic arthritis, and acute exanthematous diseases. In the absence of even a distant focus of infection it is plausible to assume that peritonitis in very rare cases is caused by the localization of pus microbes from the blood in some part of the peritoneum prepared for their reception and growth by some antecedent injury or disease.

The surgical treatment must be guided by the location and the extent of the disease, the existence or absence of complications, and the pathological type the disease presents at the time of operation.

6. Visceral Peritonitis.—The inflammatory process is seldom limited to a single organ, as during the course of the disease adjacent organs or the parietal peritoneum will surely become involved. In inflammatory and rheumatic affections of the abdominal walls and the abdominal and pelvic viscera, plastic inflammation of the omentum frequently constitutes the safeguard against infection of the general peritoneal cavity by the omentum becoming firmly attached over a threatened perforation or visceral or parietal wound. The surgeon often imitates nature's process and makes use of the omentum in covering denuded surfaces or those where perforation threatens. The surgical treatment of appendicitis and its various complications is not well settled at the present time. Some surgeons advise operation in all cases in which a diagnosis of appendicitis can be made, regardless of the nature of the disease and the character of its complications. The more conservative element of the profession limits the use of the knife to cases in which there are positive indications for surgical interference. For my own part I resort to operation in all cases during a first attack, when the symptoms point to perforation or gangrene of the appendix. The sooner the operation is undertaken under such circumstances the better the results. The appendix should be sought for and removed only if pus is found in the iliac fossa, and when it can be done without a material increase in the immediate risks of the operation; otherwise the treatment by incision and drainage will yield the best results. In mild cases of appendicitis from eighty to ninety per cent. recover under appropriate medical treatment and in a fair percentage of cases the disease does not return. The gravest cases are those in which the affection of the appendix is followed by diffuse peritonitis. In the treatment of this class of cases nearly all surgeons are fully in accord with the rules laid down by McBurney in an article in THE MEDICAL RECORD, March 30, 1895. In relapsing appendicitis an operation is indicated, particularly in cases in which the attacks set in at short intervals and with gradually increasing intensity. In peritonitis resulting from infective lesions of the uterus, ovaries, or Fallopian tubes, the organ primarily affected and the resulting intraperitoneal abscess can often be reached more safely by a vaginal than by an abdominal operation. Occasionally the combined operation will be better.

7. Pelvic Peritonitis.—Pelvic peritonitis is seldom met with in the male. It is a form of peritonitis in which the female pelvic organs are the primary starting-point of infection with extension to the peritoneum, through either the Fallopian tubes or the lymphatics of the uterus or of its adnexa. It is caused most frequently by gonorrhœal or puerperal infection, or develops after instrumental examination of the interior of the uterus or operation upon that organ. In pyogenic infection the inflammation may become diffuse, and if circumscribed usually leads to the formation of parametritic or intraperitoneal abscesses, or pus formation takes place in both of these localities. In the peritoneal cavity the gonococcus produces a plastic peritonitis, and sometimes localized suppuration. Salpingo-peritonitis and more diffuse pelvic peritonitis are most frequently caused by gonococcus infection. Abdominal section is seldom performed for gonorrhœal peritonitis during the acute stage. An early incision through the vaginal roof into the cul-de-sac of Douglas, so strongly urged by Henrotin, is a rational procedure and frequently succeeds in preventing the extension of the infection and the occurrence of serious remote complications. I have in several instances incised and drained the Fallopian tube through such an incision, and in this way prevented further leakage from the tube into the peritoneal cavity, and thus directly cut off additional supply of infectious material. The treatment of large parametritic abscesses by an extraperitoneal incision is preferable to a transperitoneal operation in all cases in which the abscess can be reached by this route.

We shall hear less of intestinal, vesical, and rectal fistula as the remote result of pelvic peritonitis or parametritic abscesses as soon as the profession recognizes fully the necessity of timely operative interference.

8. Puerperal Peritonitis.—By this term is understood a progressive inflammation of the peritoneum, occurring in consequence of an extension of an infection from any part of the genital tract in puerperal women after delivery or abortion. The infection usually takes place through the lymphatics, and in the majority of cases terminates in diffuse septic peritonitis. In some instances the disease remains limited to the pelvic organs and their serous investment; then abscess formation, intra- and extra-peritoneal, is very likely to occur.

The treatment of the localized form of puerperal peritonitis is the same as that advised in circumscribed peritonitis resulting from other causes. The foudroyant form of puerperal sepsis proves fatal in spite of the most energetic medical and surgical treatment. The use of the streptococcus antitoxin may prove of great value and should receive an early and fair trial. It has been suggested that early removal of the infected uterus would prevent the extension of the disease to the peritoneum and death from sepsis, but the results have not been encouraging. It is exceedingly difficult, and in many cases absolutely impossible, to make a sufficiently early and positive diagnosis to warrant such a grave and mutilating operation as a timely and life-saving measure. If the uterus is removed after general septic peritonitis has developed, the operation is performed too late and death from shock and sepsis is the rule.

9. Subdiaphragmatic Peritonitis.—This is a peritonitis limited to the under surface of the diaphragm and adjacent surfaces of the abdominal organs. If

the inflammation remains limited and life is sufficiently prolonged, it usually terminates in the formation of a subdiaphragmatic or subphrenic abscess. Perforating ulcer of the stomach and duodenum, abscess of the spleen and liver are the most frequent affections which precede subdiaphragmatic peritonitis. Subphrenic abscess often ruptures into the pleural cavity, and in cases of empyema the possible existence of a subphrenic abscess must be kept in mind.

Accurate location of the abscess and the positive diagnosis are made by exploratory puncture. As perforating ulcer of the stomach is the most frequent cause, subphrenic abscesses are more frequently located on the left than on the right side. Occasionally a spontaneous cure occurs by perforation of the abscess into a hollow adjacent organ. The satisfactory results of operation in these cases furnish the most conclusive proof regarding its necessity and life-saving value.

ON THE RELATION OF PHYSIOLOGY, PHARMACOLOGY, PATHOLOGY, AND PRACTICAL MEDICINE.[1]

By T. LAUDER BRUNTON, M.D., D.Sc. Edin., LL.D. Hon. Aberd., F.R.C.P., F.R.S.

The desire for knowledge which is common to the lower animals and man, savage or civilized, and has induced members of this congress to come from the ends of the earth in order to gain information, must have led primitive man from the earliest times to study the great problems of physiology, the nature of life, of growth, of reproduction, and of death, as well as to notice the connection of the latter with mechanical injuries, such as the wounds inflicted by clubs and spears or by the teeth and claws of wild beasts.

Next to the problems of physiology come those of pharmacology, by which I mean the poisonous or remedial action of various substances mineral, vegetable, or animal. A knowledge of this subject is found even among the lowest savages, and is of the greatest use to them, for it enables them, on the one hand, to avoid eating things which may cause discomfort, pain, or death, and, on the other, to obtain food by poisoning waters and thus catching fish, or by poisoning their arrows to kill game which would otherwise escape. Closely associated with the knowledge of the poisonous is that of the curative powers of herbs, and it is possessed by animals as well as man, for cows avoid noxious plants, and dogs will every now and again eat grass apparently as medicine. Primitive peoples use various substances as remedies in disease, with more or less success, and one of the most extraordinary points in their practice is that they seem to some extent to have forestalled the newest researches on venins, antivenins, and organotherapy, for in Africa the Bushmen are accustomed to drink the poison of venomous snakes as a prophylactic against their bite, and the Hausas prevent hydrophobia by killing the mad dog and making the man it has bitten eat its liver.

The occurrence of death from wounds or poison is intelligible even to a savage, but when illness and death occur independently of these, men naturally attribute them to invisible powers. Thus the Dyaks of Borneo ascribe sickness to wounds from invisible spears wielded by invisible spirits, and during an epidemic of disease in the Middle Ages the cry often arose that the wells had been poisoned. These crude ideas contain germs of truth, and when we look at Professor Metschnikoff's drawings of a Daphnia attacked by a Monospora we seem to recognize the invisible darts of the Dyaks, while during an epidemic of typhoid fever we have often to acknowledge that our wells have been poisoned by bacilli.

It is impossible to trace the steps by which the crude ideas of savage peoples regarding physiology, pharmacology, and pathology have grown into definite sciences, or even to indicate the most important landmarks, though we naturally think of the names of Alkmaon, Galen, and Harvey in physiology; of Nicander, Magendie, and Bernard in pharmacology; and of Morgagni, Virchow, and Pasteur in pathology. During this century these three sciences have developed with almost incredible rapidity; a complete knowledge of them is enough to tax severely the most retentive memory, and it is almost impossible for any individual to keep up with the advance of all three of them.

But just as the whole subject of astronomy became suddenly simplified by a change of standpoint at the very time when cycles and epicycles became most bewildering, so at the very time when these three sciences are becoming most complex and diverse they appear to be tending to unification and simplification. Pathology, for example, is now becoming to a great extent a branch of pharmacology, for while a few years ago its chief object was to discover, examine, and classify the microbes which give rise to disease, it is now striving rather to discover the nature and actions of the ferments and poisons which they form, and by which they are able to cause disease and death in the animals they attack. Pharmacological investigation, instead of being confined to the alkaloids and other poisons formed by higher plants, has now extended to those formed by microscopic plants or microbes, and thus comes to include a great part of pathology.

In the same way, though pharmacology is a branch of physiology, inasmuch as it deals with the phenomena of life as modified by drugs, yet physiology may, to a certain extent, be regarded as a branch of pharmacology, because some of the latest researches regarding the processes of life have been made by pharmacological methods, using the products of animal life instead of vegetable poisons. Among the pioneers in this line I may mention my two masters, Kühne and Ludwig; the former of whom by his chemical investigations has enabled us to differentiate the various products of albuminous decomposition, while the latter, with his pupils, Schmidt-Mühlheim and Wooldridge, discovered the poisonous action of albumoses and peptones, and of the juices of various tissues when injected directly into the blood.

Before the proteid constituents of our food can be absorbed they must be split up during digestion into albumoses and peptones; yet these researches show that the very substances which are necessary to repair waste and are indispensable for the continuance of life prove fatal when introduced into the body in a wrong way or in too great quantity. But the products of the digestion of albumin do not normally enter the circulation as albumoses and peptones. During absorption they undergo changes of a synthetic nature in the walls of the intestine, and probably to a certain extent also in the liver, so that they again form harmless substances, and their poisonous properties are destroyed before they enter the general blood stream.

But how is it that the ferments which decompose albuminous food and form poisons from it in the intestine do not pass into the blood and kill the animal by digesting the tissues and forming poisons from them? Of course pepsin cannot do so, as it acts only in an acid medium, but there is no such hindrance to the action of trypsin, and yet it does not destroy the tissues composing the body itself. In all probability

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the reason why digestive ferments do not digest the tissues is not that they are destroyed in the digestive canal, nor yet that they are not absorbed, but that they are altered from active enzymes into inert zymogens which can be stored up without risk, and can again liberate active enzymes when these are required to digest a subsequent meal. In this respect they may be compared to the knives used by wandering peoples to cut up their meat, and which are not thrown away after each meal, but are simply put into sheaths which cover their edges and deprive them for a time of their cutting power.

But it is not in the intestine only that enzymes are found; they are also poured into the blood by the pancreas and probably by the thyroid and other glands. As our acquaintance with the processes of cell life increases it seems more and more likely that the tissue change on which functional activity depends is effected by enzymes, and the truer do the speculations of Van Helmont appear—that life is a process of fermentation.

There can be little doubt that if enzymes in a free state were to circulate through the body they would do much harm, and indeed we may regard this as well-nigh proved in regard to the enzyme of tetanus.

But their action is limited either by their conversion into zymogens or their localization to the cells or tissues where their action is required. This is more readily seen in plants than in animals, and one of the best examples of it is that in germinating wheat.

In the ordinary state of the grain the diastatic ferment is kept apart from the starch by a small layer of cellulose, through which the diastase cannot pass, but during germination another ferment appears which has the power of dissolving cellulose, and by breaking down this dividing membrane it allows the diastatic ferment to act upon the starch, and renders it available for the needs of the growing plant.

Enzymes appear to differ among themselves nearly as much as albumin, albumoses, and peptones. Some are easily separated from the cells in which they exist, while others are so closely united to the protoplasm that their separate existence apart from it has been denied. The yeast plant, for example, yields an invert enzyme which can be extracted with comparative ease, but the enzyme which splits up sugar into alcohol and carbonic acid is so firmly attached to the protoplasm of the cell that it is only within the last few months that it has been isolated by Buchner by the application of enormous pressure. It is probable that the enzymes contained in the cells of animal tissues differ in like manner, and that by the use of similar methods we may obtain a number of enzymes with which we are at present unacquainted.

But it is not merely the products formed in the digestive canal, or in the organs of animals during life, nor even the alkaloids that are formed by the higher plants, that act as poisons. The processes of life are much the same in the lowest microbes as in animals, or in the higher plants, and these microbes, by forming ferments and poisons, give rise to disturbance of function or death in animals. When grown in suitable media outside the body they produce enzymes and poisons, albumoses and alkaloids, and many of them continue to do so after their introduction into the body.

One of the most curious points, in the chemistry of both the higher plants and of microbes, is that they tend to form at the same time a poison and its antidote. In Calabar bean, for example, we find there are two poisons—physostigmine and calabarine, the former tending to paralyze the spinal cord and the latter to stimulate it, so that each poison to a certain extent antagonizes the other. The same condition is found even more markedly in jaborandi, of which the two alkaloids, pilocarpine and jaborine, antagonize one another's action, so that, although pilocarpine generally greatly predominates, it might be possible to get a specimen of the leaf having no action at all although it contained a quantity of alkaloids.

When injected into animals the toxins formed by microbes and the venins of serpents cause the production of antitoxins and antivenins which neutralize their action apparently by chemical combination in somewhat the same way as an acid and alkali, each poisonous by itself, combine to form a comparatively inert salt. But the two components here, like an organic acid and a mineral base, are unequally affected by destructive agencies, and the antivenin may be destroyed, so that the venin again regains its activity.

The conversion of zymogens into enzymes may be compared to the freeing of venins from their compounds, while the conversion of active venins into inert bodies by combination with antivenins suggests that a similar process may occur in the case of active enzymes, by which they may be converted into inactive zymogens.

Perhaps the hypothesis I mentioned eight years ago to my pupil and friend, Mr. Hankin, that the germicidal power of organisms is proportional to their power to produce enzymes, may not be altogether unfounded, and possibly we may discover also that immunity, natural or acquired, is nothing more than an extension to the cells of the tissues generally of a power which is constantly exercised during digestion by those of the intestine and liver.

This problem is one which pertains to all three sciences, and has a most important bearing on practical medicine.

Practical medicine, except when empirical, depends for its advance on physiology, pharmacology, and pathology. A knowledge of the physiology of digestion has led to the satisfactory treatment of dyspepsia by the administration of digestive enzymes, and pharmacological research has enabled us to treat diseases of the circulation with a success previously undreamt of, by teaching us not only how to use aright old remedies, such as digitalis, but also how to apply new ones, such as strophanthus and amyl nitrite, and even to manufacture others, such as nitro-erythrol, which possess the special actions we desire, but are lacking in the drugs we already have. Indeed new remedies, which shall alter tissue change, lower temperature, relieve pain, and procure sleep, are now being made in such numbers that it is hard to keep count of them.

But among all the new gains of practical medicine none are so remarkable as those which we owe to pathology. Time would fail me to speak of the prevention and cure of zymotic diseases, but no less astonishing is the discovery that myxœdema depends on inactivity or absence of the thyroid gland, and can be cured by the administration of its extract, which seems to act as an enzyme on living tissues, so that the heavy, shapeless features of the patient resume their natural expression and the sluggish mental processes become quickened. An exhaustive study of enzymes and their products appears to be the most promising way of advancing our knowledge of both the nature and treatment of disease. Probably more is to be hoped for from an investigation into the nature and properties of those enzymes which are intimately associated with the protoplasm of the cells in the various tissues and organs than even of those which are poured into the blood by glands having an internal secretion, such as the thyroid. For all organs, even those which, like muscles and nerves, are not glandular, have an action on the blood comparable to that of the yeast plant, which modifies the fluid in which it lives by the substances which it removes from or adds to it. It is to a knowledge of the processes which occur in the pro-

toplasm of the cells in the intestinal wall and liver, and of the enzymes by which these processes are in all probability carried out, that we must look for an explanation of the conversion of the poisonous albumoses formed during digestion into innocuous albumins, and of dangerous enzymes into harmless zymogens.

Moreover, it seems to me that it is by researches into the nature and action of the enzymes, not only of microbes, but in the various tissues of the body in higher animals, that we shall learn how the microbes, like the enzymes of the intestinal canal, produce poisonous albumoses, and how the tissues, like the cells of the intestinal walls or liver, convert them into harmless or even protective substances. In this way we may hope to obtain an explanation of toxins and antitoxins, of pathogenesis and immunity, as well as of the nature of diseases unconnected with the presence of microbes, such as diabetes. Twenty-three years ago I attempted to obtain a glycolytic enzyme from muscle, in order to enable diabetic patients to utilize the sugar in their blood. My attempt was unsuccessful, but we may still hope that by other methods we may obtain from animal organs various enzymes, the administration of which may prove as useful in other diseases as the thyroid in myxœdema.

Practical medicine depends on physiology, pharmacology, and pathology, but all three are tending to become more and more subdivisions of the wider and all-embracing science of chemistry. It is to a chemist, Pasteur, that we owe the wonderful development of pathology within the last quarter of a century, and we may fairly regard his fellow-countryman, Lavoisier, as the founder of this science. Men from all countries, and especially from Germany, have aided its development; but it seems fitting that at this congress, in acknowledging our obligations to this science, we should not omit to mention that at its head now stands a Russian, Mendeleef, whose marvellous prescience enabled him to predict the existence of elements which were then unknown, and even to describe their properties more correctly than those who first verified his predictions by obtaining the substances themselves. When we consider that little more than a hundred years have elapsed since the time of Lavoisier, and contemplate the vast benefits which medicine and its allied sciences have derived from chemistry during this time, our hopes cannot be otherwise than great for the centuries to come.

MUSHROOM POISONING

By GUIDO E. GUGLIERI, M.D.

Last February I was called in consultation to see a family of six persons who had partaken of poisonous mushrooms, which resulted in the death of three of the children. I consider it interesting to report these cases from the fact that the symptomatology was unlike that of the usual cases of reported poisoning, and furthermore for the reason that poisoning by toadstools should be more carefully studied by physicians and reported, so that, in view of the uncertainty which exists in the literature on this subject, we may gather more extensive data from which to draw our deductions.

The special mushroom which produced death in these cases was pronounced by botanists to be the Agaricus muscaria, but I suspect there was more than one variety among those eaten; therefore not too much importance must be attached to the above classification.

Case I.—Boy, aged eight; robust; he ate a little over one-half of a medium-sized fungus about six o'clock on the evening of February 24th. He slept well all night and awoke next morning with little disposition to play with his brothers before getting up, as was his custom each morning. When he arose from bed he had a loose passage but complained of no pain. The father noticed that his eyes had not their usual brightness. When dressed he complained of being short of breath and wanted to stay in the open air. The bowels again moved, with more pain. The father, suspecting the mushrooms, then administered castor oil to all the family, which was vomited by them. After this the diarrhœa increased and likewise the griping, but no further vomiting followed the administration of the oil. At three o'clock the boy was feeling fairly well, but quite weak; in the mean time the father had consulted a physician, who gave him some chlorodyne for the boy. During the early part of the evening he was taken with convulsions which increased in intensity, and at eleven o'clock he expired in one of these attacks. I did not see this patient, being called in consultation the next morning.

Case II.—Boy, aged five; robust; he ate the same quantity as the former, and likewise slept well during the entire night, looking dull in the morning; after dressing he went into the yard to get some fresh air, complaining of dyspnœa as his brother had done. After he was given the oil he vomited, which was soon followed by diarrhœa, but he did not complain particularly of pain; during the evening he stated that he felt well, although the father says he had the same dull look that was present during the day. After the death of the first patient he was put to bed, and slept apparently soundly during the night, being awakened only for his medicine. Following the death of the first child, another physician was called in, who advised the administration of two drops of tincture of belladonna every hour; this was given to all the patients during the rest of the night. The following morning the boy on awaking asked for his coffee, which was at once ejected by the stomach, followed by general convulsions. It was at this time that I was sent for and found the boy in the dorsal decubitus, breathing heavily and quickly with slightly livid face. The pulse was very rapid, empty, easily compressed but regular. It was impossible to arouse him: the pupils were contracted and did not react to light: toward the end they dilated widely. The body was dry with the exception of the face and neck, which were slightly moistened with perspiration. It was quite evident that the patient was moribund and after several hours of convulsions he died.

Case III.—Boy, aged ten; robust; ate about one-sixth of a mushroom. During the same evening he slept well, and next morning with the exception of the sickness produced by the oil felt well enough to attend school, where he had a slight attack of vomiting at ten o'clock. During the rest of the day no particular illness was complained of, with the exception of a feeling of lassitude and restlessness. I saw this patient in the morning, thirty-six hours after the ingestion of the mushrooms; at this time there was an expression of extreme fear on his countenance. The pupils were contracted; the head and neck were covered with perspiration: the respirations were rapid and full: the pulse was rapid, full, and regular. There was no vomiting, diarrhœa, or colic. The intelligence was considerably blunted. After a few hours I again saw him and he was then comatose, although when shaken violently and asked if he wished to drink he would answer in the affirmative. The pulse at this time was slower and the pupils were more dilated, but as he was now being subjected to injections of atropine this change was probably due to the drug. His condition for the next fifteen or twenty hours remained the same: there were occasional attempts at vomiting, and there seemed to be a suppres-

sion of urine, which ceased after the application of hot poultices to the loins. The evening of the third day after eating the fungi the boy grew worse; his stupor became more profound, the pupils more dilated, the pulse more quickened, more compressible and irregular, the breathing acquiring the characters of Cheyne-Stokes respiration, and lastly a hiccough developed. At three o'clock the next morning there was a spasm of the lower jaw, which lasted but a few minutes, and then death supervened, the pulse becoming rapidly feebler and irregular just before the end. Death occurred in this case eighty hours after the boy had eaten the mushrooms.

Case IV.—The father, a man of about thirty-eight, strong, robust, and of unusual intelligence, ate by far the most of the mushrooms, having consumed at his dinner nearly two mushrooms. That night he felt a little dull and the next morning on awaking felt more so. However, he overcame this feeling and went out in the morning to get the castor oil, which he, like the others, vomited. He again vomited at eleven o'clock in the morning. During the day he was stupid, but still felt anxious regarding the children. He continued in this state until after the death of the first boy, when he felt so ill that he was obliged to go to bed, attributing his illness to grief at the death of his son. He could not sleep, but yet had a feeling of satisfaction; he realized that his son was dead yet did not care. During the early hours of the morning he attempted to arise but found he could not move except after great effort. His feeling of apathy then gave way to one of great fear for the safety of the children. In the mean while the gastro-intestinal symptoms were becoming more marked, and he was taken with frequent desire to go to stool and slight vomiting. I saw him at this time and found him in a stupor: he was easily aroused and was then able to answer questions fairly intelligently. The skin was moist with perspiration: the pulse small and rapid but regular: the breathing quick, shallow, and noisy; the pupils were slightly contracted. This condition continued for a period of twenty-four hours or more, and then gradually improved, so that in a few days he was entirely well with the exception of an urticaria which developed over the body generally.

Case V.—The mother, aged about thirty-five, robust and healthy. Nervous temperament. She showed few signs of intoxication with the exception of slight diarrhœa and vomiting, with some mental excitement. After the death of the third son she had an attack of hysteria, which soon passed and there was no further trouble. She ate only one-sixth of a mushroom, which accounted for the mildness of the case.

Case VI.—Little girl, aged four: ate about one-sixth of a mushroom: her symptoms were the mildest of all; she had only a little vomiting on the second day and practically no other signs. The treatment was mainly prophylactic in her case.

This is a *résumé* of the cases which it was my lot to have to treat. I presume my readers will be struck, as I was, with the difference in time it took the mushrooms to prove fatal. The second son, who ate about one-half of a mushroom, died in about thirty hours, whereas the younger brother died after eating the same quantity twenty hours later. The eldest son, who ate the same quantity as the little girl and mother, succumbed after eighty hours, whereas his sister and mother were but slightly disturbed. Lastly the father, who ate nearly two entire mushrooms, was rendered quite sick, but recovered after eating nearly four times the quantity that proved fatal in thirty hours in a boy of eight years.

It would be impossible to draw any conclusions from the above figures except what seems to me to be most likely—that there was only one poisonous mushroom in the small lot that was cooked and that this was divided among the boys, the others suffering from the edible fungi being impregnated with poisonous principles in the process of cooking. The study of poisonous fungi and the nature of the poison is one of the most difficult in toxicology. Cases of poisoning by mushrooms are fairly common, especially in winter and spring, but fortunately many terminate favorably even after severe manifestations of toxic action. I consider it unnecessary in this paper to describe the criteria for distinguishing the poisonous from the non-poisonous varieties, for this is necessary only for those interested in the gathering, selling, and cooking of this dangerous article of food. Moreover, I think that if I were to do so I would have a difficult task on my hands, if I am to be guided by what I read in this regard. Dr. R. T. Foster, in an article in *The Boston Medical and Surgical Journal*, says that the signs of differentiation between the two varieties are not well marked: while on the other hand Dr. Charles McIlvaine, in an article in *The Therapeutic Gazette*, states that it is very easy indeed to recognize the edible from the non-edible fungi. Lastly, many of the German authorities claim that all fungi are poisonous, a statement which I consider exaggerated.

However, be this as it may, the facts remain that when we are called to treat people who have been suddenly taken ill and give a history of having feasted on mushrooms, it is our duty to act and act quickly, without delaying to inquire as to the nature of the mushroom partaken of. The poisoning due to mushrooms manifests itself in two ways; the one with marked gastro-intestinal symptoms coming on soon after the ingestion of the fungi and rarely fatal in adults, the other with similar symptoms soon superseded by a narcotic condition frequently ending fatally.

The former cases explain why some consider all forms of fungi as poisonous. Their opinion is based on the fact that many forms of edible fungi have at times caused dangerous symptoms in those who have partaken of them, ignoring whether the mushrooms contained some alkaloid proper to the plant or whether the sickness was not induced by some other accidental conditions developed in them. Mushrooms are substances rich in water, nitrogen, and vegetable albumin, which in the presence of heat and air furnish capital conditions for putrefactive changes giving rise to noxious ptomains which are violent irritants to the alimentary tract in exactly the same manner that meats, cheese, and other articles of food are when spoiled. It is likely also that variations in the soil may affect the nature of edible mushrooms, for it is probable that these have an influence on the products elaborated by the vital activity of the plant, in the same way that certain bacteria become pathogenic only when cultivated in certain special culture media.

The treatment to be instituted in poisoning by this non-muscarine-containing mushroom consists only in allaying the pain, nausea, and diarrhœa, and stimulating the heart with mild cardiac excitants. The form of poisoning which occurred in the cases I have reported was not of this type, but was due to the deadly Amanita muscaria. The poisonous principle is generally conceded to be muscarine, first isolated by Schmiedeberg. Apoigier has prepared from the amanita a crystallizable acid principle, soluble in ether. Leteillier separated an amorphous tasteless substance that he named amanitine. Ponchet, in an article which recently appeared in *Le Progrès Médical*, denies that the active toxic principle of toadstools is muscarine, and claims it to be an albuminous compound similar to the toxins found in putrid organic matter, which has when injected into frogs a physiological action in no way similar to that of muscarine. Muscarine, according to the description of Schmiedeberg, is a colorless,

syrupy mass, lacking odor or taste, easily soluble in water, especially if slightly acidulated, and in absolute alcohol; it forms salts with acids and has an alkaline reaction. Muscarine is present in the dry fungus to the amount of about one-fifth per cent. The symptoms produced by muscarine poisoning are similar to those produced by amanita. I have been unable to find a case of muscarine poisoning reported, but from its administration in animals we see symptoms quite similar to those found in cases in which poisonous fungi have been eaten.

Rademaker, in an article on the toxic action of muscarine, in *The American Practitioner and News*, says, in speaking of the physiological action of this drug, that "after the administration of ten grains of sulphate of muscarine to a dog weighing thirty pounds the symptoms manifested were as follows: Half an hour after eating the food containing the muscarine, vomiting was produced, followed almost immediately by evacuations from the bowels and the passage of urine. The pupils became contracted and the heart's action irregular. The lacrymal secretion and flow of saliva were increased; at the same time the dog had general tremors. The dog completely recovered. The next day the same dog was given the same dose again, with the same symptoms following and complete recovery in eight hours. These experiments prove that muscarine cannot be considered a very powerful poison, but it demonstrates the fact that its action is almost immediate, even when taken with a full meal."

I cannot agree with Rademaker when he says that muscarine is not a powerful poison. He doubtless forgot that much of the ingested poison was eliminated with the vomited matter. Schmiedeberg found that one-thirteenth of a grain of muscarine in the human subject caused myosis, loss of focalizing power, abundant secretion of saliva, flushing of the face, perspiration of the whole body, griping and rumbling in the bowels and a feeling of weight in the head. Moreover, when we consider that the quantity of muscarine in the amanita in the dry state is one-fifth per cent. and that the quantity of mushrooms eaten by the eldest of the three boys that died was so small (only one-sixth of a small mushroom which was rich in water) was sufficient to produce death in eighty hours, I consider it indeed a very powerful poison or else there must be present in the mushrooms secondary poisons of which we have no knowledge.

The treatment of these cases is, as in all cases of poisoning, to empty the stomach if we think that any food remains in this organ and to administer a good purge; next to support the strength of the heart by the injection of stimulants. The drug *par excellence* which is to be used for this is atropine. This is a real antidote to muscarine, having in every respect a physiological action exactly opposite to that of muscarine. The treatment followed in my cases was that pursued and recommended by all toxicologists. Owing to the fact that I saw the patients as late as thirty-six hours after they had eaten the mushrooms, I considered it useless to administer an emetic, and furthermore it was evident from the condition of the patients that the poison had to be combated in the circulation. The patients were immediately given injections of one-fiftieth of a grain of sulphate of atropine and one-sixtieth of a grain of strychnine alternately every hour. The children were given less strychnine in proportion than the adults, but were given the same quantity of atropine, with the exception of the little girl, who, owing to the mildness of her symptoms, did not require very active treatment. After the injections, the pupils dilated widely and the heart and breathing improved, but the coma remained unchanged. The patients were given in addition cracked ice with cognac and seltzer by the mouth. Authorities all agree that fluids by the mouth are injurious, owing to the fact that they favor the absorption of the muscarine, which is very soluble in water. This objection, though, is not to be considered in my cases, for the muscarine had undoubtedly all been absorbed and the administration of water could only do good by favoring the flow of urine and in this way accelerating the elimination of the poison from the system.

Atropine is unquestionably the most reliable antidote that we possess for mushroom poisoning. Comparing the action of muscarine and atropine in the animal body, we find an almost complete physiological antagonism. Why, then, you may ask, were we not more successful in our cases? The reasons are several.

(1) The time which elapsed from the fatal meal to the beginning of the manifestations of toxic symptoms was so great that the poison was undoubtedly all absorbed, and hence emetics, purges, etc., were useless.

(2) The period which elapsed from this time to the injections of atropine brings up the total to about thirty-six hours before the patients received the treatment which might have saved their lives.

(3) The injections of atropine should have been made more frequently and in smaller quantities.

(4) The slow elimination of the poison from the body owing to the suppression of urine.

This suppression of urine is common in cases of poisoning from many other substances, and I have no doubt is caused by the great lowering of blood pressure due to the vasomotor paralysis. That there is a paralysis of the vasomotor system and of the sympathetic in muscarine and many other forms of poisoning, is shown by the livid face, congestion of the conjunctiva, oral and nasal mucous membrane (more marked in other cases I have read of), headaches and delirium, contracted pupils, increased flow of saliva and of perspiration.

The ideal method of treating any case of poisoning in which the toxic substances have already entered the blood would be, first, to stimulate the heart only to that point necessary to overcome the decreasing action of the poisonous drug; second, to hasten the elimination of the poison as much as possible; third, to dilute the poison as much as possible within the body. Regarding the use of cardiac excitants in poisoning-cases, I consider that the greatest discretion is necessary, for at this time the heart is laboring under the greatest disadvantages and the slightest overstimulation may cost the patient his life. It is for this reason I would suggest a change in the method of administration of stimulants in these cases. We are called to see a case similar to those I have described and we find the heart badly affected; we at once inject a fair dose of some cardiac stimulant and the heart in a few minutes picks up its strength so as to beat even more strongly than normal, then in a brief period it again begins to fail: but we do not always dare to give another injection at once for fear of substituting one poison for another. In this way the heart is alternately overstimulated and then allowed to beat on in a weakened condition. The obvious way to correct this would be to furnish the antidote in small doses, but to inject it continuously. The way in which I propose to do this would not only fulfil this condition but would also raise the blood pressure in the arteries and dilute the poison. I would suggest injecting subcutaneously a large quantity of fluid, say six or eight ounces every hour, in which a small triturate of the special stimulant used is dissolved. I would precede this by at least one injection in the ordinary way and then resort to the method I have described.

I have as yet had no experimental or clinical experience with this method, but I hope that some may see enough in the suggestion to try it at the first opportunity that presents itself and report with what success.

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KOLLMANN'S NEW URETHRAL DILATOR.[1]

BY FERD. C. VALENTINE, M.D.,

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ALL cases of urethritis, acute or chronic, simple or specific, are curable. This assertion is likely to provoke criticism from those who hold opposite views, or who deem "life too short to waste it on chronic clap."

Yet those who, guided by the urethroscope, follow methodical dilatations as developed by Oberlaender and irrigations as popularized by Janet have every reason to controvert both the above opinions. Cases recover more rapidly than by either of the plans of the eminent men cited, and during the treatment none of the concomitants occur as they do in using each method alone.

Irrigations, urethral and intravesical, without a catheter, were not accorded the popularity due them until about eighteen months ago. Indeed it required the persistence of a Janet, a Goldberg, a Brewer, a Swinburne, to persist in the then uncleanly treatment due to faulty apparatus. To-day even a tyro can irrigate the bladder without a catheter, and not spill a drop of the fluid used. I lay stress upon this fact, in the hope of inducing all exclusive specialists to employ the method which has such splendid scientific indorsement as of the eminent gentlemen mentioned. But my purpose now is to take advantage of the present high privilege accorded me of demonstrating a new dilator, which, you will agree, is the most ingenious, as well as the best instrument thus far devised for the purpose.

A few words on the evolution of the dilator may not be amiss in this connection. Oberlaender,[2] to whom the credit of working out the dilatation treatment is due, says: "The purpose of instrumental treatment is to stretch or break hard or soft infiltrates, either with superficial or submucous injury to them.[3] Nothing else can be accomplished by the introduction of metallic instruments of small or large calibre. The very frequent disproportion between the meatus and sounds, especially those over 30 F., and the exceedingly disagreeable sensations produced by their insertion, led my thoughts primarily to a dilator. I worked for a number of years with a spring dilator of insufficient strength; accident then brought Otis' instrument into my hands. In the course of time I gradually developed from it a number of instruments suitable for each zone of the urethra. . . . In 1888, about a year after the publication of my instruments, von Planer, of Graz, also made known dilators based upon the same principle. He now (1894) uses my instruments."

Shortly before Oberlaender published his first paper on dilatation in chronic urethritis, James P. Tuttle, of New York, independently took up the method, with, however, not entirely the same purpose in view. He writes me: "My dilator was made for me in December or January, 1886–87. I used it first as an adjuvant to internal urethrotomy, afterward taking up extreme dilatation, as I became more and more convinced that it was this which cured. The first description I ever saw of Oberlaender's instruments was published more than two years after I had been using mine. I do not know how much earlier it had been published in German. I did not publish my instrument until I had sufficient experience to recommend its use and the cases to show." He first described his dilator in the *New York Medical Journal* for October 3, 1891. The illustration shows that it differs in some essential points from the instruments devised by Oberlaender and Kollmann. Tuttle's dilator is best described in the inventor's words: "The special points of interest in the instrument are its parallel separation over a limited space, its powerful mechanism, its applicability to all portions of the urethra, and its protecting rubber cap."

FIG. 1.—Tuttle's Urethral Dilator.

FIG. 2.—Oberlaender's Straight Anterior Dilator.

To attempt to belittle the modest claims of the ingenious inventor would be to earn just condemnation. An honest difference of opinion, however, may lead to discussion which must be of the desired benefit. On this score I beg to submit to Professor Tuttle the following thoughts on his dilator. If the urethra were a rigid tube, giving firm support to the shaft of the instrument, the dilating blade would exercise that equal pressure, in at least two directions, which is the purpose in view. The branches of the Oberlaender and Kollmann dilator separate equally from an imaginary central line, accomplishing the end sought more efficaciously than could be done by the Tuttle instrument. The advantage of separation over a limited space is not evident to me. As the beneficial effects of dilatation are exerted upon the points of greatest resistance, the unaffected parts are spared compression. Assuming that every operator has the skill to locate exactly the diseased points, it seems to me that limiting the dilatation to them implies a greater frequency of and more prolonged treatment than if an instrument able to dilate the entire urethra is employed.

FIG. 3.—Oberlaender's Curved Anterior Dilator.

[1] Read before the genito-urinary section of the Academy of Medicine, on February 9, 1897.

[2] "Klinisches Handbuch der Harn- und Sexualorgane," Leipzig, 1894.

[3] Tuttle, in an exquisite paper on "Extreme Local Dilatation in the Treatment of Urethral Stricture and its Allied Conditions" (New York Medical Journal, April 13, 1895), says: "The cure of stricture by gradual dilatation is based upon the assumption that a retrograde metamorphosis is set up in the connective tissue, which causes its atrophy or absorption, and the coarctation is thus removed."

The powerful mechanism of the Tuttle dilator is gladly conceded and indeed seems to me the most important feature of the instrument. Its applicability to all portions of the urethra is not so patent. It is readily seen that the Tuttle dilator can well be applied to all parts of the pendulous urethra, when the curved tip would prove rather an impediment. But, if used even at the first portion of the *pars fixa*, it cannot disturb the relations of the region; certainly not an advantage in treatment directed primarily to increasing the lumen. These criticisms, made in that same cordial spirit with which Professor Tuttle favors those whose work he discusses, suffer much in force when his brilliant results with this instrument are examined.

FIG. 4.—Oberlaender's Dilator for Posterior Urethra

Discussion of the Tuttle dilator saves repetition and makes unnecessary a detailed description of the other dilators in use to-day, as far as my knowledge extends.

Oberlaender's almost straight dilator for the anterior urethra was his first instrument on this plan. Its resemblance to the one devised by Otis is at once evident.

Oberlaender's curved dilator, intended mainly for dilatation of the bulbous portion, certainly makes a decided advance over its predecessor, in urethral instrumentation.

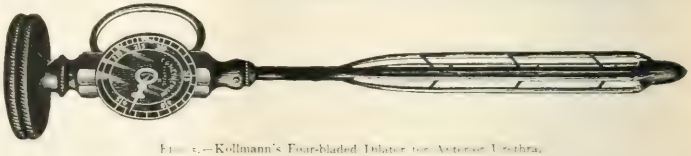

FIG. 5.—Kollmann's Four-bladed Dilator for Anterior Urethra.

Oberlaender's dilator with the Béniqué curve, as its shape shows, is intended for dilatation of the posterior urethra exclusively. The straight blades of the instrument, lying in the anterior urethra, do not expand at all, thus sparing this region unnecessary dilatation.

While the immense therapeutic advance made by these intruments is undeniable, they have their limitations in the fact that they are two-bladed. With a view to hastening the results in the chronic diseases of the urethra, Kollmann devised his four-bladed dilators. His first instrument for that purpose, as its form shows, is intended for the anterior urethra. This was followed, after two years of close study and experiment, by Kollmann's four-bladed dilator for the posterior urethra. But after use of this instrument for some time, it proved to be somewhat clumsy and painful to the patients; at least, so it acted in my hands. This led me to essay designing a better four-bladed instrument for the posterior urethral curve. But before I could even properly formulate my thoughts, Kollmann's genius produced his four-bladed dilator with the Guyon curve, for the posterior and part of the anterior urethra.

This instrument, which I now have the honor of being the first to show in America, has been in daily use for about three months. Experience, covering about two hundred and fifty dilatations during this period, has made me an enthusiast for it. The mechanism is so self-evident that I need only add praise for the ease with which it is inserted, for the exquisite gentleness yet efficacy of its dilatations, for the markedly rapid results it yields, and its surprising painlessness to patients.

The therapeutic value of dilatations, the indications for each instrument, the technique of their employment, have been fully discussed in a paper on "The Treatment of Chronic Urethritis," prepared by me for the Second Pan-American Medical Congress, held at Mexico in November, 1896. I am more than pleased that opportunity still remains to add the description of this instrument to that paper before its publication.

242 West Forty-fifth Street.

FIG. 6.—Kollmann's Four-bladed Dilator for Posterior Urethra.

FIG. 7.—Kollmann's New Four-bladed Anterior Urethral Dilator.

Strangulated Hernia.—The treatment of cases of strangulated hernia after the operation is almost as important as the operation itself. This patient, almost immediately after the operation, was given something by the mouth every hour; only a few teaspoonfuls of stimulant or of fluid food, but still something. These patients suffering from what we may call the asthenic form of strangulated hernia must not be starved after the operation. They are advanced in age, feeble, pulled down by hard work, drink, or chronic organic disease, ill nourished, and now still further exhausted by pain, vomiting, loss of sleep, and fear of death. Often they come to the hospital in the middle of the night, and at once they are subjected to the further shock of the anæsthetic and the operation. Such patients must not be starved, or fed only by the rectum; it is absolutely necessary that we should begin, even a few hours after the operation, to give them small quantities of stimulant and of fluid food by the mouth. —DR. PAGET, *The Clinical Journal*, April 28th.

CHRONIC FOLLICULAR TONSILLITIS.

By W. SCOTT KENNER, M.D.,

BUFFALO, N. Y.,

FELLOW OF THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL SOCIETY; PROFESSOR OF LARYNGOLOGY, MEDICAL DEPARTMENT, NIAGARA UNIVERSITY; SURGEON IN CHARGE OF THROAT DEPARTMENT, BUFFALO EYE AND EAR INFIRMARY; LARYNGOLOGIST TO THE ERIE COUNTY HOSPITAL; LARYNGOLOGIST TO THE ORPHANS' HOME, ETC.; LARYNGOLOGIST TO THE CHILDREN'S HOSPITAL, ETC.

THE conditions which I am about to describe are not correctly defined by the above title; they are more correctly although not fully described by the term chronic lacunar tonsillitis. Therefore, if you will pardon me, I will try to tell you in as few words as possible just what are the classes of cases which I wish to include under the above title. The conditions are simple and well known to every one, but the symptoms vary greatly in individual cases, and the reflex manifestations produced by them are so varied that I hope I shall be excused for calling your attention at this time to so simple a condition. I wish merely to excite discussion and the citation of cases illustrating some of the peculiar phenomena.

Chronic follicular tonsillitis is characterized by the formation of plugs of secretion in the crypts of the chronically inflamed tonsils. These plugs resemble very much the contents of comedones; are usually about the size of a rice kernel, but vary very greatly in size; they are white or yellowish-white in color and have a very offensive odor, which is brought out by crushing them. They are frequently the source of offensive breath; when crushed, they are found to be of a soft cheesy consistence; they consist of the material discharged from the tonsillar crypts, and are made up of leucocytes, epithelium, chalk, mucus, and the various bacteria, etc., which infest the mouth, among which leptothrix frequently plays an important part. The only chronic condition with which, as you know, this can be confounded is mycosis of the tonsil, in which the plugs are of a more dense consistence and project from the crypts beyond the surface of the tonsil like small cockspurs. These spurs are removed with greater difficulty than the simple plugs, and are found when examined under the microscope to be made up entirely of leptothrix or some other form of mycotic growth which develops very rapidly, the spurs replacing themselves very quickly if removed. The tonsils themselves in which the chronic follicular trouble occurs are often more or less hypertrophied, but some of them are considerably atrophied; in fact, some are so small that they cannot be seen on making a pharyngeal examination until the anterior palatine fold is pulled forward and to one side with a probe, when frequently one or two crypts are exposed filled with very large plugs of secretion; these crypts have very little tonsillar tissue about them, and often in tonsils of much larger size the offending crypt is not found until the palatine fold is pulled aside to expose it. The number of crypts which are inflamed or obstructed varies greatly; in large ragged tonsils the gland is often filled with numerous plugs; small tonsils may have but one or two obstructed crypts. The large tonsils with numerous crypts do not often produce so unpleasant or so marked symptoms as those with less secretion, especially if the crypts which are giving trouble are so located that the secretion is not easily expressed from its bed by the ordinary movements of the throat muscles. The larger tonsils when filled with the secretion, unless during an acute exacerbation, produce only a sensation of fulness in the throat; the patients who have more obstruction to the free discharge of the contents of the lacunæ complain of pain in the throat, pain extending to the ear or chest, pain externally in the cervical region, on one or both sides, fatigue of the muscles of the neck, and some complain of severe neuralgia and various other indefinite reflex phenomena. The plugs do not produce symptoms while they are small, and when they are once expressed from the crypts the symptoms usually disappear until another crop has had time to form. As the masses increase in size, they often cause a swelling at the orifices of or about the middle of the duct just external to the offending secretion; this is especially apt to take place after exposure to cold, after the ingestion of hot food, and a sudden increase of the virulence of the streptococci contained in the secretion may set up an acute inflammation; such acute attacks may last for a day or two, or may end in a regular acute follicular tonsillitis involving a part or the whole of the tonsil, or both tonsils, and this may be accompanied by more or less fever, according to the virulence of the bacteria contained in the inflamed tonsil. Should the tonsil at the same time contain some of the Klebs-Loeffler bacilli such a case would be classed by our boards of health as one of true diphtheria. Patients who are subject to frequent attacks of quinsy are usually subject also to chronic follicular tonsillitis, and destruction of the chronic tonsillar disease will do much to prevent the annual return of these unpleasant attacks.

The upper angle of the tonsil, which is often hidden from view between the anterior and posterior palatine folds where they approach each other to unite in the soft palate, often contains one crypt, sometimes two crypts, with their external openings pointing upward. Such a cavity is not so easily emptied as one which is directed downward, and the secretion remains in the follicle for a long time. When you examine a tonsil in which this portion is producing the symptoms, the patient will exclaim, when this portion of the tonsil is touched with a probe, "That is the place," and if in such a case you separate the sides of the crypt located here the pearl-like pellet of secretion will usually pop out or can be easily pressed out of its bed. Such patients, besides complaining of some dysphagia, will complain of otalgia, or a tickling in the external auditory canal of the corresponding side. If this portion of the tonsil is touched with a hot electrode, either when the tonsil is normal or when it is diseased, the patient will complain of pain in the ear. This is a reflex through the auricular branch of the vagus. I have frequently located the cause of an otalgia in an obstructed lacuna in the upper part of the corresponding tonsil. This symptom is usually accompanied by some dysphagia. Such cases were especially instructive when the patients happened to be suffering at the same time from chronic deafness, and when both they and their physicians considered that the otalgia and the deafness were due to the same cause. This pain in the ear is more familiar in cases of severe acute inflammation in this region of the throat, such as a peritonsillar abscess or quinsy. Only the other day I saw a case with severe pruritus in the external auditory canal, which was relieved by applying cocaine to the upper portion of the tonsil. In a climate such as is found in the region of the great lakes, where all parts of the upper air passages may manifest some evidence of catarrhal inflammation, it often becomes difficult to locate exactly the cause of some obscure throat symptoms. It is often very difficult to say whether the symptoms are due to an obstructed nose, a granular pharyngitis, or to some condition of the pharyngeal, lingual, or faucial tonsils.

The following history of a case illustrates such a difficulty, which occurred to me a few months ago, when the trouble proved to be due to an unsuspected condition of one of the faucial tonsils. A general practitioner, a friend of mine, wrote me as follows:

Read May 4, 1897, at the third annual meeting of the American Laryngological, Rhinological, and Otological Society, at Washington, D. C.

"May I encroach upon your kindness and ask your aid in an obscure case of mine. The patient, a married lady of twenty-five, has had a great deal of trouble with her throat: she was in a church choir a long time, and suddenly her voice began troubling her in sustaining tones, and any exertion of singing, or even talking for any length of time, caused her to have a constant ache and acute burning sensation in her throat, which, in fact, is the condition of the patient at the present writing. I have examined her carefully from time to time, and beyond a condition of relaxation and general congestion I can detect nothing pathological. I have thought it was rheumatism, but rheumatic pains elsewhere have entirely disappeared, while this remains, and both she and I are discouraged. It has been a year since it began, and I have exhausted my remedies without result: what about electricity? I would take it very kindly should you help me out." There was, of course, nothing in this history which should make me suspect the tonsil of being the cause of the trouble. I therefore concluded that she probably was not using her voice properly, etc., and suggested that she had probably been improperly trained in the use of her voice, and that she had some nasal obstruction which he might have overlooked, which would increase the fatigue of using her voice, especially if used in an improper manner. I advised him to use the electricity as he had suggested, together with iron and strychnine, and to enjoin rest of the vocal organs until he had treated her nose if necessary, and until she could procure a better vocal instructor. This treatment, of course, did not help her; no one could make a diagnosis without seeing the patient. In a few weeks she came to Buffalo to see me. At first I could find nothing in the throat which seemed sufficient to cause her symptoms, for besides the loss of her singing voice she complained bitterly of intense pain, neuralgic in character, in the right half of her neck. Besides this, she had a feeling of great fatigue in the muscles of the throat, especially after using the voice. I was much puzzled for a cause of the symptoms. I found her throat about as her physician had described it. She had some granular pharyngitis, and I commenced to cauterize the patches on the posterior wall of the pharynx, and was engaged in the third *séance* of the treatment, when her right tonsil, which was small and perfectly smooth, attracted my attention. I noticed a much distended crypt on the upper surface. I at once plunged my electrode into this opening. The tonsil proved to be simply a small crypt-like organ distended with inspissated secretion, and I opened it with the electrode and destroyed it. After thorough destruction of all traces of the tonsil, which was accomplished with the galvano-cautery in two or three sittings, all the symptoms of pain and fatigue disappeared; her voice improved under proper vocal instructions and tonic treatment.

This is only one of the many cases which might be cited of small diseased tonsils which have been the unsuspected cause of distressing symptoms. A paroxysmal cough is frequently caused by some diseased condition of the faucial tonsils. In children the cough is frequently due to very large faucial tonsils, which by touching other parts of the throat set up an irritation, resulting in distressing and prolonged coughing. When in children the faucial tonsils are not enlarged, the cause of the cough can often be found in the presence of a large amount of adenoid tissue in the vault of the pharynx, but enlarged tonsils are not the only tonsils which are productive of cough. It frequently has its origin in an old follicular inflammation, sometimes in tonsils which are very much atrophied. I once sought for a long time for the cause of a very irritating cough which had persisted for eighteen years. This occurred in a patient over fifty years of age. I found the cause in an obstructed crypt on the posterior surface of the right tonsil; the lacuna was prevented from easily discharging its contents by a partial adhesion between the tonsil and the posterior palatine fold.

Treatment.—A paper has already been presented at this meeting on "Surgery of the Faucial Tonsils," therefore it will be superfluous for me to enter into a detailed discussion of the treatment of these cases. I shall merely outline the principal indications for treatment. The first indication is to open and destroy every pocket or crypt which may form a lodging-place for secretion or particles of food, and secondly, if we accept the teaching that the tonsil is simply a diseased mass, especially in adult life, the only indication for treatment is to remove or destroy all of the diseased mass, to eradicate as far as possible every trace of tonsillar tissue; these two objects may be accomplished in various ways, and the individual case will suggest to the experienced operator the best way to attain his object, the destruction of the tonsil. The conditions of which I have spoken are usually found in adult life; the principal trouble caused by hypertrophied tonsils in children is due to the obstruction which they cause to respiration, and this usually is due more to the accompanying adenoids than to the tonsils, unless the tonsils are extremely large. Tonsillotomy has many opponents among the laity, by whom various reasons are given for their belief that it does harm or no good. Most of the reasons which they give are not the real ones for the failure of the operation to benefit the patient. The first reason for the unsatisfactory result is that the tonsils have been removed, while the adenoids, the chief cause of the obstructed breathing, have been left, a mistake which is often made by the general surgeon in treating these cases. The second reason for failure is that the tonsils have not been thoroughly enough removed to destroy all the diseased crypts, and consequently the patient will still be subject to repeated attacks of acute follicular and supurative tonsillitis; in these cases great masses of lymphoid tissue are left attached to the palatine folds, while only the parts of the tonsils have been removed which projected beyond the folds into the isthmus of the fauces. This demonstrates that all adhesions between the palatine folds and the tonsils should be broken down before an attempt is made to remove them by any method. It is also important that the tonsils of children should be more thoroughly removed than they often are, for thereby all diseases of the tonsil which might occur in adult life may be prevented.

I formerly always used the tonsillotome in removing the glands from children's throats, but lately I have found that a much more thorough operation could often be done with a cold snare in many cases, because the loop of the snare could be passed well in between the palatine folds and almost every vestige of the tonsil removed. In adults, when the offending tonsil is large enough to grasp with the snare, I use it to remove the organ, and the ordinary polypus snare is usually sufficient for ordinary hypertrophied tonsils, such as those I have described. When the tonsils are fibroid in character an écraseur or the galvano-cautery snare might be necessary; for very flat tonsils, which cannot be grasped with the tonsillotome or snare, some other method must be followed. I usually either lay open the crypts with a long sharp bistoury and remove the intervening portions of tonsillar tissue with the cold snare or a pair of cutting forceps, or destroy them by means of the galvano-cautery. The cases which give the most trouble are those in which large crypts are situated in the side wall of the pharynx with scarcely any tonsillar tissue

about them; here the only thing that can be done is to change the whole affair into cicatricial tissue by means of the galvano-cautery. The danger of hemorrhage after the removal of tonsils occurs most frequently in hyperplasia of the tonsil, the fibrous tonsils, a class of cases which it has not been my intention to speak of in this paper.

761 Penn. Street.

WHAT ARE THE FUNCTIONS OF THE RODS AND CONES AND THE PIGMENT EPITHELIUM LAYER OF THE HUMAN RETINA?

BY FRANK P. PRATT, M.D.,

JACKSON, MICH.

The human eye has long engaged the attention of students and specialists. Exhaustive research has been made in the field of anatomy, histology, and pathology of the different ocular tissues in man and in the lower orders of vertebrates; yet there are many problems, around which the searchlight of scholarly minds is being thrown, which have not been satisfactorily explained.

The phenomenon of vision is one of these; particularly so when we consider the part played by the retina, or rather the epithelial pigmentary layer and the layer of rods and cones, in this complex act.

The generally accepted theory is that both the rods and cones are the terminal cells of the optic nerve; that the image of external objects is focussed upon this layer, and that here light vibrations are changed into another kind of motion, namely, nerve stimuli; that certain mechanical and perhaps chemical changes take place in the epithelial pigment layer, and that a peculiarly intimate relation exists between this layer and the layer of rods and cones.

Fuchs says that the place in which the conversion of luminous vibrations into nerve exitation occurs is the rods and cones. I wish to present the following hypotheses:

1st. That the cones alone are the terminal cells of the optic fibres in the human retina.

2d. That the rods are supporting tissue to the cones, their outer segments practically forming a part of the pigment epithelial layer.

3d. That the tenth or pigment layer is that in which light vibrations are changed into nerve stimuli.

A full consideration of the microscopical anatomy of the retina would be impossible here, on account of limited space; reference, therefore, must be made to the text-books of anatomy and histology. Piersol's article on "Microscopical Anatomy of the Retina," and May's on "Photo-Chemistry of the Retina," in Norris and Oliver's work, cover the field very fully.

Assuming, then, that this histological knowledge is in mind, we will review only such salient points as are necessary to make clear the foundation for the propositions above presented.

The retina of the old school comprised the nine innermost layers only, or that part which includes the fibres and terminal cells of the optic nerve, together with the internal limiting membrane. Later research has demonstrated that the epithelial pigment layer also belongs to the retina, and constitutes its tenth stratum. This layer is in intimate relation with the ninth, and, together with the seventh and eighth layers, has no blood-vessels of its own, but receives its nourishment from the same source—the choroid vessels. The rods and cones alike pass through the cribriform external limiting membrane, the rods extending to the "base" of the epithelial cells, where they terminate in irregular "gnawed-off" ends; the epithelial cells sending down protoplasmic processes between the rods and cones to various depths; or this epithelial "base" may be considered as a "disc," which is perforated with cylindrical channels for the reception of the external segments of the rods. Thus the outer rod cell is plunged deeply in the pigmented portion of the epithelial cells. This relation of rods and epithelial processes is maintained uninfluenced by the light stimulus.

The cones also pass outward and terminate in gently rounding ends, which reach little more than half-way to the "base" of the epithelial cell. The cone is not a fixed cell, but under the influence of its normal stimulus retracts, so that the whole cell is nearer the external limiting membrane. When this stimulus is removed the whole cell again advances. This is an important difference, and should be given its proper weight in a consideration of the functions of the rods and cones.

Authorities differ as to whether the terminal cell is connected to the nerve fibre by continuity, or simply by contiguity or approximation. Hosch, however, claims that he "finds in the Golgi silver preparations evidence of direct anatomical continuity between the fibrils proceeding from the base of the cone cell and the processes of the nerve cell." No such continuity has been demonstrated or claimed for the rod.

What proofs, then, have we that the cones alone are the terminal cells of the optic nerve in the human retina? Consider in this light the following facts:

1st. That the cones alone have been demonstrated to be connected directly with the filaments of the optic nerve.

2d. That no such claim is made for the rod; in fact, the base of the rod is known to terminate in a bulb, and approximation is its only relation to the nerve filaments.

3d. That the cone is mechanically irritated by converted light stimulus, as shown by its power of contraction and extension under that stimulus.

4th. That converted light stimulus has no mechanical effect upon the rod; that its close relation to the base of the epithelial cell remains unchanged under its influence.

5th. That the only change noted in the rod cell is that which occurs in the bleaching and reproduction of the so-called visual purple, which has its exclusive seat in the outer segment of the rod cell, and this bleaching appears to be effected by the action of the luminous vibrations themselves, and not by the proper nerve stimulus. Light vibrations as such are not excitors to the terminal cells of the optic nerve.

6th. That the cones alone occupy the position of most acute vision.

7th. That the rods are not necessary to acute and perfect vision.

8th. Because in central scotoma the disease involves only that portion of the retina which has to do with acute vision, namely, the macular region; yet a cross-section of the optic nerve, where it enters the bulb, shows an accompanying atrophy of nerve filaments, which occupy a sector-shaped space, with base out and apex toward the centre, and make up nearly or quite one-third of the total nerve filaments (Fuchs). When we consider what a small part of the retinal surface the macular region occupies and how insignificant numerically the cones of this region are compared with the combined rods and cones of the extra-macular region, it not only adds weight to the belief that each cone in this region has an individual nerve fibre, but also to the fact that each cell element of the extra-macular region cannot have an individual nerve fibre; nor one fibre for seven cells, as estimated by Selzer and Krause. These authorities estimate the cones at 7,000,000. Becker estimates 13,000 in the macula lutea. The rods are much more numerous,

being estimated as high as 130,000,000 by Krause. Selzer and Krause estimate the number of measurable fibres of the optic nerve at 425,000. Now, taking out the 13,000 fibres distributed to the macular cells, there remain 412,000 fibres, to be distributed to 137,000,000 extra-macular cells. If these were distributed to both the rods and cones, there would be 1 fibre to 332 cell elements; if to the rods alone, 1 to 301; if to the cones alone, 1 to about 17. These estimates furnish additional evidence that the cone cells alone receive filaments of the nerve.

9th. That the normal position of the cone is at right angles to the external limiting membrane and the pigment epithelial layer.

That this position can be thus maintained, outside of the macular region, only by appropriate supporting tissue.

In the macular region each cone is a support to its neighbor; therefore no rods are necessary. In the extra-macular region the cones become farther and farther apart toward the peripheral portions of the retina; they can no longer support each other; therefore rods appear, and, with the protoplasmic processes of the epithelial layer and the modified lymph, fill in the intervening spaces. The rods, which in the macular region form a single layer around each cone, gradually increase in number, until, in the region of the ora serrata, each cone is surrounded by three or more layers of rods. The outer segment of the supporting rod, as it dips deeply into the pigment processes of the epithelial layer, thus becomes practically a part of that layer.

10th. That in proportion as the cones increase in number over a given area, vision increases, and *vice versa*. Thus the cones within the macula lutea are many times more numerous than in any other equal space on the retina. Therefore, more terminal filaments being irritated, sight is more acute.

The third general proposition is that the tenth retinal layer in that is which light vibrations are changed into nerve stimuli.

Briefly stated, the tenth layer is composed of a single stratum of hexagonal cells, a view of the inner surface of which shows a beautiful mosaic arrangement, deeply pigmented, except in the region of the nucleus. A vertical section shows the cell to be divided into three parts or zones—the outermost containing the nucleus, and being unpigmented; a middle zone deeply pigmented, sometimes known as the "base" of the cell; and an irregular zone of "indefinite protoplasmic processes," extending between the outer segments of the rods and cones. This pigment is special and peculiar to this layer; it differs from the stroma pigment of the choroid in being crystalline and rod-shaped instead of granular. Under the influence of light these pigment crystals advance within the protoplasmic extensions of the "base" of the cell, between the rods, the migration not being accompanied by the protraction and retraction of the processes themselves.

I present the following reasons for believing the third general proposition to be true:

1st. The pigment epithelial cells increase in size from the region of the fovea, where they are the smallest, to the region of the ora serrata, where they reach their maximum size, thus coinciding with the decreasing number of cones from centre to circumference; so that it is probable that when the ninth and tenth layers are in their normal position each cone points to the centre or nucleus of each epithelial cell.

2d. The peculiar yet significant associated action of the epithelial pigment and the cone cell, under the influence of light stimulus: as the pigment advances within the epithelial processes, the cone retracts, and *vice versa*, their relative positions being little changed.

3d. The position of the cone is strong evidence that the image is not formed upon this layer. Nature is a conservator of forces; then why does she not turn the cones toward the source of light, if this layer is the necessary surface upon which the image is cast, instead of turning them in the opposite direction? In the one position the image would fall directly upon the percipient surface; in the other the light rays pass through the nine different retinal layers to accomplish the same purpose, if the accepted theory is true.

Nature has made no mistake. The cones are turned toward the source of their normal stimuli, but this stimulus is not light vibration, as such, and therefore does not come from the object itself; it is another form of energy. "This is, without doubt, simply another sort of motion, of such a nature as to be transmitted within the nerve fibres to the brain—a property which is not possessed by the vibrations of luminous ether" (Fuchs).

Thus it would seem that "vibrations of luminous ether" must pass unobstructed through the various retinal layers, including the cones, until they are focussed upon the tenth layer, which point is a "murky veil" at the focal point of the normal eye, fixed between the delicate terminal cells of the optic nerve and the choroid coat. It is the ground-glass plate of our living camera, upon which the images in our visual field are spread in all their various colors, and in which, in a manner not yet fully understood, light vibrations are transferred into nerve stimuli, and from which comes the normal stimulus of the ocular fibres.

It is well known that the anatomical and histological arrangements of tissues are not the same in different vertebrates—thus, in the frog rods may predominate in the region of most acute vision; or that rods alone, or perhaps modified cones, may alone be present in others; or that a complete decussation of the optic-nerve fibres takes place in some of the lower animals. Yet this does not warrant us in assuming that the above facts do not hold true in man.

In the words of Fuchs, in speaking of the decussation of ocular fibres: "The only mistake that has been made is in assuming the same condition to hold good for the higher vertebrates also."

It is not claimed here that pigment is necessarily present in order that this change from light vibrations to nerve stimuli may take place; for in albinos, in which pigment is absent, the visual act is accomplished, yet always imperfectly. It is therefore probable that in exceptional cases some modification in the pigment substance takes place, yet always at the expense of perfect vision.

Much has been said about the visual purple or rhodopsin of Boll. Yet when all is said, little or nothing is known of its real utility. We know that it exists exclusively in the outer segment of the rod; that even in the cone cell of the extra-macular region it is not present. That it is not essential to perfect vision is evidenced by the fact that it is absent in the region of the fovea. "Animals that have been deprived of visual purple do not act differently from those which possess it. Frogs, without this visual purple, search for their favorite color, green" (May). In fact, it may act, owing to its position, in common with the elements of the pigment layer in absorbing and transforming luminous ether vibrations into normal nerve stimulus.

Ulcer Grafting.—Skin grafting will not succeed upon an unhealthy surface. Cleanse the surface well for a few days with boric fomentations, slightly abrade the granulations, enough to cause oozing, and then apply the grafts to the abraded surface, where they are held in place by green protective.—GILL.

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THE MOSCOW CONGRESS.

THE Twelfth International Medical Congress, of which we publish in this issue the first part of our special cabled report, was successful far beyond the expectations of those who had watched the course of preparation for it during the past two years. The committee on organization had much more to contend with than any similar committee of an international congress, most of its trials being due to the peculiarly paternal character of the government under which its members lived. When it was first announced in Rome that the next congress would be held in Russia it was stated that the committee was not authorized to announce the place of meeting, for the designation of the city to be thus honored must be left to the Tsar. When the preliminaries of the plan of organization were published, the English-speaking world was antagonized by the dropping of English from the list of official languages. This drew forth a vote of protest from the American Medical Association, and may have been the reason why the British Medical Association decided to meet this year in another part of the world, as far as possible from Moscow. No sooner had this error been recognized and corrected than the news came that the efficient and popular secretary-general of the committee, Professor Erismann, had for political reasons been expelled from Russia. At the same time Hebrew physicians began to inquire how they would be treated if they attempted to go to the congress, and it was intimated that they would be turned back at the frontier. After more or less discussion and protest it was finally announced that on this occasion no discrimination would be made against any physician desiring to take part in the proceedings of the congress, because of his race or religious belief. These difficulties and many others which could not have come up elsewhere, and which would seem to have been enough to chill the ardor of the most enthusiastic committeeman, were all met and overcome. And the Moscow congress, in its externals at least, for we cannot judge of its scientific rank until the reports of the section work have been received and studied, has passed into history as one of the most successful of the twelve.

The general addresses were all of a creditable character, although no new facts of serious import were brought forward—nothing, indeed, of the startling and sensational character of Koch's memorable address in Berlin seven years ago. This is perhaps just as well, for true science needs no theatrical setting, and it would have been much better if the German investigator had not been forced by his government superior to make a premature announcement of his discovery in order to add *éclat* to the tenth congress. The orators in Moscow, at least those who did not deal chiefly with orrhotherapy, as a rule contented themselves with restating old facts, some, as Virchow, reiterating the beliefs to which, in somewhat modified form, they still clung despite the assaults of the neopathologists. Virchow's was a touching figure at the congress—this wonderful old man and indefatigable worker in many fields, a physicist, a publicist, a linguist, and a pathologist, equal to the first in each of his chosen spheres of activity. All the world will add with one voice its fervent *No* to those with which the congressists met his suggestion that this was perhaps the last congress at whose deliberations he would be able to assist. The young man of seventy-six summers was well inspired when he chose as his theme "The Continuity of Life," and his hearers did well to remind him that he was wandering too far from his subject.

The entertainments provided for the visitors were on a most lavish scale, and are even yet not at an end. While one party has been taken to see the beautiful scenery of the Caucasus, another has gone to the Crimea, and still another is enjoying a series of fêtes organized in honor of their guests by the hospitable citizens of the northern capital. The method adopted by the municipality of Moscow for showing its appreciation of the honor of harboring the congress was unique. Instead of opening a public building for a reception and spending a large sum for decorations, and for eatables and drinkables, the memory of which would pass away almost as quickly as the headaches they had occasioned, the council determined to establish a prize for medical work, to be awarded at each recurring congress. The sum set aside for this purpose was about 16,000 rubles, and the value of the triennial prize will be $1,000. Thus will the memory of these sober city fathers ever be kept green.

The announcement that the next congress will be held in Paris at the time of the international exposition is only what was anticipated. The French have long contended for the honor of entertaining the congress and it is fitting that they should do so during their year of jubilation.

From the report of the proceedings of the principal sections which our special representative has secured for us, and which will be published in future issues, the readers of the MEDICAL RECORD will learn of the work of the congress and will be able to judge whether it was such as will contribute to the onward progress of scientific medicine.

RECIPROCITY IN MEDICAL PRACTICE.

THE action of some physicians of New York and other large cities who visit the summer resorts of New England and elsewhere and there follow their profession is always severely criticised and gives rise to much

heart-burning among the resident medical men. They contend that these city doctors have no right thus to combine business with pleasure and take the bread out of their mouths. We find in the *Atlantic Medical Weekly* of July 17th some correspondence and editorial comments on this subject, in which the case is presented very fairly. It would appear that the fault lies chiefly in the laxity of the State laws, and that so long as a visiting physician conforms to the law no valid objection can be made to his practising, but that if he does not fulfil the necessary regulations then the authorities, if notified, must act. As to the hardships resulting to the local practitioners from the lack of reciprocity our contemporary says: "Granting all the premises regarding the *raison d'être* of the law, it is notably unfair that one State should admit to all the rights of the profession while barred from gaining an equivalent for its own citizens, unfair that New York men may come to New England and replenish their purses while recuperating their health, while New England men who may spend a few months in the metropolis attending perhaps post-graduate studies are denied the privilege of practising." All this is very true, but surely at least to a certain extent the remedy is in the hands of the resident practitioners. Why should not the doctors of New England follow the example set them by the native medical men in Italy in their present crusade against foreign physicians, and induce their legislatures to debar others from practising medicine in their States unless they can be allowed the same facilities in New York or in the other cities from which the visiting doctors may come? Of course the inequality in the standards in the different States is the chief obstacle in the way of reciprocity, and until a uniform course and a uniform method of conducting examinations are introduced, it would seem that the difficulties are almost insuperable. However, after all the solution of the problem lies in State legislation, and that is where the remedy should be sought.

BICYCLE RIDING A REMEDY FOR ASTHMA.

Dr. Marcet, of London, is strongly of the opinion that bicycle riding is very beneficial in cases of asthma, he even goes further and says that it may act as a cure. If this opinion should receive practical verification, the already popular exercise will gain yet another impetus.

Dr. Marcet says: "If asthma is a form of mountain sickness, and if that distressing affection of high altitudes can be cured by training for the exercise of climbing, why should not asthma also yield to the training of the respiration carried out by practising the respiratory movements wanted to carry the tidal air through the lungs? Of all means of training respiration I think cycling is the best. When a person first takes to cycling exercise it will be found, especially on going uphill, that the breath is wanting, the heart beats uncomfortably, and the legs tire; but after some training these discomforts all disappear; nothing will be thought of hills to ascend, the heart has become perfectly comfortable, all breathlessness has disappeared, and the legs will no longer feel any fatigue. Cycling exercise first of all increases the depth of breathing, and that without fatigue, as the respiratory movements are automatic; at the same time it will accustom the rider instinctively to take in at each respiration the volume of air required to aerate the blood and to eliminate a fixed proportion of CO_2, leaving in the circulation the precise balance of CO_2 compatible with health. Persons who do not care for cycling out of doors can take the same kind of exercise at home by means of a dummy cycle consisting of an iron wheel driven by pedals, the resistance of the wheel being so contrived as to simulate bicycle riding. A strap carried partly round the rim of the wheel can be tightened at will by the rider, thus increasing the labor and recalling the effort of riding uphill. My experience of the results of this treatment is unfortunately limited to only one person; in this case it has proved eminently successful. This person took to bicycle riding about three years ago for pleasure, and in very great moderation for the first two years. He observed last summer that the attacks of asthma to which he was subject had become very much fewer. The tightness and wheezing which occurred every night have now entirely disappeared."

VERMINOUS PERSONS IN ENGLAND.

In England it is proposed to deal by the strong hand of the law with those who are troubled with parasites. The *Hospital* for July 17th has an article under the rather repellent title of "Verminous Persons." It would appear that a bill has lately been introduced into the British House of Commons for the relief of verminous persons, and that in order to avoid discussion of the female-suffrage bill, which was the next on the list, a flood of small wit was let loose upon the bill for the relief of verminous persons, merely to kill time and prevent discussion of the other bill. The *Hospital* gravely rebukes the House of Commons for its unbecoming levity on the subject, and if the accounts given in the *Hospital* are true the matter is certainly past a joke. According to our contemporary, the "verminous persons' bill" is a most necessary measure, and one that would add greatly to the comfort of the poorer classes in the metropolis and in other large towns in Great Britain. It is said that the tenements inhabited by these classes are infested with vermin to such an extent that it is almost impossible to obtain in them a satisfactory night's rest, and in consequence hundreds of men may be seen sleeping on warm days in the parks for the reason that they are unable to sleep in their lodgings on account of the lively pulex and the bloodthirsty cimex. It is difficult to say whether the pest of mosquitoes from which so many people in places outside of New York City suffer is worse than the vermin pest of the English cities. The mosquitoes while they stay are perhaps more venomous and their favors are more impartially distributed, but by way of compensation their season is limited, whereas in Great Britain the "verminous persons" are verminous the year round.

News of the Week.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending August 21, 1897. August 14th.—Assistant Surgeon F. L. Pleadwell detached from the *Texas* August 17th and ordered to the *Nashville* August 19th; Assistant Surgeon W. M. Wheeler detached from the *Oregon* August 23d and ordered to the Mare Island navy yard for duty in connection with the *Marietta*. August 20th.—Assistant Surgeon D. H. Morgan detached from the *Monongahela* and ordered to the *Cincinnati;* Surgeon A. G. Cabell detached from the *Monongahela* and ordered home to be ready for sea.

The Risks of Travel in Far Countries.—The accident-insurance companies in England do not permit their policy holders to run off when they will to wander in the wilds of New York or Montreal. The *British Medical Journal* announces the fact, which it thinks may be of interest to the members of the association who intend to be present at the meeting in Montreal, that though life-insurance companies permit policy holders to travel in Canada and the United States, an extra premium is charged by accident-insurance companies. The impression seems to be that we shoot only to wing and not to kill.

The Fourth Congress for the Study of Tuberculosis will take place in Paris during the week beginning July 25, 1898, under the presidency of M. Nocard, of the Alfort Veterinary School. The following questions will be discussed: The value of sanatoria as prophylactics and as a means of treating tuberculosis; serum and toxins in treating tuberculosis; use of *x*-rays in diagnosing tuberculosis; the *x*-rays in treating tuberculosis; the success of prophylactic measures in combating animal tuberculosis.

The Plague is reported to be increasing again in the district of Poonah and in the city of Bombay.

Typhoid Fever is reported to be epidemic in Milan.

Trouble in Oklahoma.—The new governor of Oklahoma Territory has appointed a homœopathic physician president of the territorial board of health. This action has naturally aroused the regular practitioners of the Territory, and they are endeavoring to have the appointment revoked.

Homœopathy at the University of California.—The directors of the Hahnemann Hospital College in San Francisco have petitioned for affiliation with the University of California, and a counterpetition has been presented to the regents by the regular faculty of the medical department of the university. At a meeting of the regents of the university held August 10th both petitions were heard, but the final vote will not be taken till the next meeting, on September 7th. The main argument of the homœopathic school is that not to allow it to come into the State University would be taxation without representation. The members of the regular faculty were supported at the hearing by several good speakers, including a delegation from the Medical Society of the City and County of San Francisco, by petitions from the surgeons of the army and navy stations in San Francisco, the local medical societies, and the medical societies of Sacramento and of Los Angeles, and by vigorous letters from Dr. Donald McLean, of Detroit, formerly professor of surgery in Ann Arbor, and from Dr. C. L. Bard, president of the California State Medical Society.

The International Congress of Neurology, Psychiatry, Medical Electricity, and Hypnology.—The first session of this congress will be held at Brussels from September 14th to 19th, under the presidentship of Professor Verriest, of Louvain. The general secretary is Dr. Crocq, of the Molenbeek Hospital, Brussels. Among the subjects for discussion will be the surgical treatment of epilepsy; the pathogeny and treatment of exophthalmic goitre; reflexes, muscular rigidity, and contracture; general paralysis; psychosis and dreams; the semeiological value of electrical reactions of muscles and nerves; the therapeutical value of high-frequency currents; the therapeutical value of hypnotism and suggestion; and the question of criminal suggestions, their origin and actual state.

Obituary Notes.—Dr. George R. Kauffman died at Chambersburg, Pa., on August 13th, at the age of fifty-six years, in the sequence of an attack of hemiplegia.—Dr. George Y. Lehr died at Philadelphia on August 18th from carcinoma of the stomach. A surgical operation was performed for the removal of the growth a year ago, but recurrence took place. Dr. Lehr was born at Gratz, Dauphin County, Pa., May 13, 1842, and was graduated from Jefferson Medical College in 1863. He has lived in Philadelphia for thirteen years.—Dr. Edward W. Kitchel, of Newark, N. J., died at the Roosevelt Hospital in this city on August 25th, in consequence, it is said, of injuries received in a railway accident. Dr. Kitchel was twenty-seven years of age. He was assistant instructor in normal histology at the College of Physicians and Surgeons, New York.

The Late Dr. John J. H. Love.—The following minute was adopted at a meeting of the visiting staff of the Mountain Side Hospital, August 16, 1897:

"No words can express the loss which the Mountain Side Hospital has sustained in the death of Dr. Love, nor is it possible so to construe language as to give the measure of our personal loss in the death of our beloved leader.

"Filled with the courage and self-sacrifice that are born of high purpose and unselfish broadmindedness, and always willing to prefer the wellbeing of others to his own, he gave freely of his time and substance to the hospital.

"Its good name was as dear to him as his personal honor, and from his clear and comprehensive mind came most of the suggestions by the adoption of which the enterprise has been successfully carried on. Without Dr. Love it would have failed; with him, it has achieved an enviable measure of success and usefulness.

"We can no longer enjoy his friendship, his guidance, his counsel, or his sympathy, but we have the brilliant example of his noble life and of his devotion to the best interests of this hospital.

"Richard C. Newton,
"E. M. Ward,
"H. B. Whitehorne,
"*Committee.*"

Colored Woman Physicians.—Dr. Cornelia Kahn, of Cleveland Springs, N. C., referring to a statement that Dr. Emma Wakefield, of Louisiana, was the first colored woman to graduate in medicine, says that the Woman's Medical College of Pennsylvania has been graduating colored women for years. "One, the wife of a minister in Philadelphia, has been practising with success for at least fifteen years. This spring, a colored woman physician, Dr. Brown, passed the State examination with more credit than her dark brothers, and better than some of the white candidates. She is now serving as resident in the hospital for colored people in Charleston, where they have also started a training-school for nurses."

The Adelaide Hospital Trouble. — Drs. Leith Napier and Ramsay Smith, formerly of London, who sold their services to the lay managers of the Adelaide (South Australia) Hospital to take the places left vacant by the former medical board, are doubtless rather sorry now that they did not remain at home. They have not been recognized by their colleagues since their arrival in Adelaide and now they have been cast out at home through a sentence of expulsion from the British Medical Association. While one may be permitted to look with equanimity upon the infliction of punishment for dishonorable actions, it is yet difficult to see how the culprits in this case have committed an actual crime or have done anything legally "infamous." The scramble for hospital appointments which have been vacated by colleagues under pressure from their lay masters is not regarded with pleasure by disinterested onlookers, but if every man who had gleefully taken a brother's place were expelled from his medical society there would be a sad thinning out indeed.

German University Students.—The number of matriculated students in twenty-one German universities during the summer semester of 1897 was 30,932, and of hearers 1,519, of whom 207 were women; students of theology, 4,326; of law, 8,368; of medicine, 8,232; of philosophy, 10,006. There was a marked decrease in the number of students of theology and medicine, and an increase in that of students in the philosophical department, especially in philology and natural science.

A Department of Public Health in Great Britain.—The announcement has been made that when Parliament reassembles it will be moved in the House of Commons "That in the opinion of the house it is desirable that a department of public health be constituted, and that the same be under the charge of a responsible minister having a seat in Parliament."

Secretary of the Interior Ullóa of Costa Rica.—The present secretary of the interior of Costa Rica is Dr. Juan J. Ullóa, who studied medicine in this city and served upon the house staff of St. Vincent's Hospital. As a member of the international executive commission of the first Pan-American Medical Congress, he was the author of the resolution creating the sub-commission on Pan-American quarantine. He is not only a leading medical practitioner of that country but one of its most potent political factors.

"A Cheerful Fact for New York City."—Under this heading an esteemed but somewhat east-winded contemporary remarks that "a statistician catering for the good-will of the Greater New York says that for the six deaths every fifteen minutes there are seven births. Unfortunately, however, the births are largely from that class in the community which is of least benefit to the city." And so, we would apologetically add, are the deaths.

Dr. Max Einhorn has been requested by the faculty of the Post-Graduate School to give special courses next autumn and spring on the newer methods of diagnosis and treatment of diseases of the stomach.

A Town Without a Doctor.—The wonderful discovery has been made that only a short distance from New York City exists a town which has no resident physician. This town is North Bergen in New Jersey. The township authorities had been notified by the State board of health to appoint a town physician, and when they set about doing so they found there was no medical man, except a veterinary surgeon, living in the place. The salary attached to this important office is $50 per annum.

Hospital Enterprise.—A hospital in Omaha is distributing broadcast a catchy circular, which reads in part as follows: "Accident insurance is a good thing. Insurance against ordinary sickness is a better thing. Both in one is the best thing. Do not wait until sickness or accidents come to you before taking out a membership certificate entitling you to free admission, bed, board, nursing, medical and surgical care in case of accident or sickness in the Methodist Hospital of the Omaha Hospital and Deaconess Home Association of the Methodist Episcopal Church. A two-edged sword cuts both ways, and accomplishes its mission in either direction. So does your membership fee. If you have occasion to use the hospital as a member, you have the first right to accommodations, above any other class of patients, and you will be most tenderly cared for. If the Lord spares you in perfect health, your money will assist the institution in caring for some one else not able to pay. It thus becomes a sweet charity whose fragrant memory will follow you all your life." The cost of membership is $10 a year in advance. The payment of $250 in advance makes one a life member entitled to continuous free treatment for himself or, "if the Lord spares him in perfect health," for some one else of whom Providence is not so careful.

Clinical Department.

EIGHT INTESTINAL PERFORMATIONS FROM PISTOL BULLET; OPERATION; RECOVERY.

By J. F. BALDWIN, A.M., M.D.,

COLUMBUS, OHIO,

PROFESSOR OF SURGICAL GYNÆCOLOGY, OHIO MEDICAL UNIVERSITY, GYNÆCOLOGIST TO PROTESTANT HOSPITAL, ETC.

THE following case is worthy of report, since few cases of more extensive injury to the intestines with recovery have been recorded:

April 25, 1897, T. W., aged twenty-one, a student at Delaware College, accidentally shot himself in the abdomen with his revolver. The bullet, of thirty-two calibre, entered the abdomen four inches below the umbilicus and two inches to the right of the median line. As nearly as he could tell, the bullet entered at right angles to the surface. The accident occurred at five o'clock in the afternoon, and he was seen within a few minutes by two physicians. At this time he was suffering from the effects of a good deal of shock. He was at once given a hypodermic injection of one-quarter grain of morphine with atropine, and whiskey was given internally. At eight o'clock the injection of morphine was repeated. I saw him at 11 P.M., in conjunction with his physicians, Drs. Seamans, Murray, and Vogt. At this time his general condition was excellent. His pulse was somewhat accelerated, varying from 84 to 108 per minute, but of good strength and volume. He was free from pain and expressed himself as feeling entirely well.

Notwithstanding his excellent condition, I took the ground at the consultation which followed the examination that from the direction apparently taken by the bullet we could scarcely imagine the bowels to have escaped injury. Even if there were no injury to the intestine, an exploratory incision would not materially increase the risk, while if a perforation existed it would almost certainly prove fatal if left alone. The other physicians present concurred in this opinion, and when our view was explained to the patient he promptly acquiesced. The young man was the son of a surgeon, Dr. J. L. Wylie, of Ripley, Ohio, and had himself studied medicine one year.

With the aid of my assistant, Dr. Chapman, and the physicians above mentioned, the operation was commenced as soon as the preparations could be completed. The incision was made so as to include the wound. The first loop of bowel noticed was brought up into the incision and passed through the fingers until a perforation was found. This was carefully closed with a double row of Czerny-Lembert sutures, fine iron-dyed silk being used. The surrounding area was carefully cleansed and the bowel returned, while more was brought into view. In this way eight perforations of the small intestines were found and closed, and three perforations of the mesentery. There had been no hemorrhage of any moment. The perforations were all within about three feet of the ileo-cæcal valve, the last being about an inch and a half above the colon. The peritoneal cavity was carefully cleaned and the incision closed except at a point where a gauze drain was inserted, so as to give drainage in case an opening had been overlooked or a leak should occur at any point. The operation was completed at 2 A.M., and the patient put to bed in good condition.

The after-treatment of the case was attended to by Drs. Murray and Seamans until the arrival of Dr. Wylie, twelve hours after the completion of the operation. Thirty-six hours after the operation I changed the gauze drain for a small piece inserted just through the incision; this was allowed to remain forty-eight hours longer, when it was removed and the opening closed. The bowels were opened by cathartics on the fourth day. Convalescence was absolutely uninterrupted, the highest pulse rate being 88 and temperature 100° F. At the end of three weeks the patient resumed his college work, and a week later called on me at Columbus.

No attempt was made to find the bullet, which was doubtless lodged somewhere in the muscles of the back. In case its presence should ever make trouble, it can be located by the *x*-rays and easily removed.

The presence of the drain necessarily left a somewhat weak place in the abdominal wall, but if a hernial protrusion should occur at this point a secondary operation would be a very simple matter.

The case is of interest as emphasizing the importance of making exploratory incision in cases of abdominal injury from gunshot wounds, without waiting for symptoms of hemorrhage or of peritonitis to develop. It also shows that with care in the technique even most extensive injuries of the intestines may be recovered from.

SUBMAXILLARY ADENITIS WITH APPARENT INCIPIENT LYMPHADENOMA.[1]

By EDWIN R. MANSON, A.M., M.D., LL.D.,

SYRACUSE, N. Y.

ADENITIS, or inflammation of a gland, with or without suppuration or caseation in scrofulous subjects, has long been fairly well understood. But lymphadenoma, which consists in its first stage of "a mere hyperplasia," and "subsequently of fibroid induration" (Gowers), when not arrested in its incipiency, though described by many, from Malpighi (1669) to Murchison (1870) and later, appears even now to be but imperfectly understood. And a complication of the two conditions, as apparently occurred in a case that recently fell under my care, must, I think, be very rare. I have seen only two other cases, and they were not apparently complicated with submaxillary adenitis; in neither case did the patient live long enough for the process to pass on to induration, suppuration, or caseation.

The subject in this case is a man, sixty-two years of age, farmer, who in childhood had some sort of abscess or swelling about the face or neck, left side, leaving no visible scar that I could discover. Two or three near relatives are said to have died from wasting abscesses. He chewed and smoked tobacco, but was otherwise temperate. After a slight attack of grippe, lasting about a week, during which he was seen by two physicians, neither of whom appeared to have defined his disease, there appeared an almost painless swelling which commenced with slight tenderness in the left submaxillary gland; this swelling rapidly extended to the sublingual and lymphatic glands, and all the structures and tissues of the left side of the face and the entire neck from ear to ear, so as to produce an enormous distention devoid of noticeable pain or tenderness. It was at this stage, after one week of illness, that I was called to attend him, the swelling having increased, I was assured, one-half during the preceding twenty-four hours, almost obstructing respiration, deglutition, and speech, thus presenting the gravest possible symptoms, with the fearful prospect of speedy dissolution, but attended by little or no pain or tenderness.

Called at such a crisis, my first inquiry was as to the possibility of any poison having been taken into

[1] Read before the Syracuse Academy of Medicine, June 22, 1897.

the mouth that might have irritated the left submaxillary gland, which was slightly tender from the first, I learned. But this elicited only the fact that tobacco had been used quite freely, by chewing and smoking; and this fact, together with the evidence of a light attack of influenza attended by a loss of appetite, coated tongue, a bounding pulse, such as I have rarely if ever witnessed before, led me to the conclusion, in the absence of other causes, that nicotine had poisoned the left submaxillary gland and irritated the adjacent lymphatic glands and tissues, and together with the poison of the grippe had led to the apparent incipient lymphadenoma, which was threatening a rapidly fatal termination by apnœa from pressure upon the larynx, trachea, or respiratory passages.

The prominent symptoms in this case were the enormous distention from ear to ear, under the jaws, in front of the neck, and of the left side of the face, with difficult respiration, a bounding pulse, difficult speech, an anxious expression of countenance, and slight tenderness of the left submaxillary gland on pressure under the lower jaw. The remaining symptoms, catarrhal, coated tongue, loss of appetite, lame neck, and slight cephalalgia, were apparently from the grippe, as I viewed the case.

From erysipelas it differed in not being attended by redness; from an ordinary inflammation, in the absence of pain and tenderness, which were slight and manifest only in the left submaxillary gland under the jaw, and from all other conditions, except perhaps snake or septic poisoning, in the rapid extension and development of the swelling.

From all the facts connected with this case, it was my opinion that the grippe predisposed to the hyperplasia which followed, the submaxillary gland being poisoned, inflamed, and narcotized by nicotine, so as to deaden the pain, as it passed on to inflammation and suppuration without pain, all the tissues being thus relaxed, accounting for this supervening apparent incipient lymphadenoma with the attendant threatened suspension of respiration, deglutition, etc. For while under the treatment which I adopted and followed out, no more distention or swelling occurred, at one time, the tenth day of my treatment, while the respiration and speech appeared improved, the patient declared himself unable to swallow for about twenty hours, the sublingual glands became tense, and the surface assumed from the chin to the sternum an erysipelatous appearance. This I attributed to the passage of pus from the submaxillary toward the surface. And this was probably the case, for two days later, the twelfth day of my treatment, the pus made for itself a painless opening nearly opposite the middle of the lower jaw of the left side. The pus came out in a stream, materially lessening the swelling and distention of the parts. The pus was thick, yellowish, and had a slight odor, as might have been anticipated in such a case.

The prognosis in simple uncomplicated adenitis, attended or not by caseation or suppuration, may not be very unfavorable when properly treated, though liable to be of protracted duration. But when complicated with incipient lymphadenoma, as it appeared to be in this case, the danger is very great at best, and especially if not attended to in season. In all cases of lymphadenoma, even in the incipiency if involving the neck, and later, if passing on to induration, involving the spleen, attended or not by caseation, or possibly in scrofulous subjects suppuration, a fatal termination is to be feared. Strangely enough the two cases that I had seen in consultation before this, already referred to, both of which terminated fatally very soon, were clearly produced by nicotine, as was verified by the physicians attending them.

The treatment I pursued in this case was general and local, the general consisting of sulphide of calcium, two grains, morning and evening, to lessen pus formation; one or two cathartic pills daily to clean the tongue; sulphocarbolate of sodium, a grain and a half, with three drops of tincture of nux vomica every six hours; and alternating with this a grain and a half of cinchonidine for the antiseptic and tonic effect, with such liquid nourishment as could be swallowed, and a warm foot bath at evening to favor perspiration.

Locally, removing a cold bread-and-milk poultice, I had a clean white flannel brought under the swelling and up over the sides of the face so as to cover it, tied with tapes over the head so as to make pressure on the swollen parts. Under this I had applied every six hours a strong solution of chloride of ammonium (tepid), except over the region of the submaxillary gland, where I substituted ichthyol, one part to about three of glycerin. And this was continued till the erysipelatous appearance occurred under the chin, when a folded linen, wet in a tepid solution of sulphate of iron, about an ounce to a pint of water, was kept on that part under the flannel and a solution of iodide of potassium over the gland, about two drachms to the ounce of water, till the pus discharged two days later, the fourteenth day of my treatment and twenty-first of the disease. Then the ichthyol was again applied over the region of the gland about the opening, and a poultice of bread and milk was applied and renewed every six hours.

While it is claimed that of "two-thirds of the cases of lymphadenoma no cause can be traced" (Gowers), it is said that it may commence with an "irritation in the submaxillary gland," as in this case, and, extending, may "encircle the neck beneath the lower jaw." But I do not find a parallel to this case in the painless suppuration of a submaxillary gland attended by a rapid hyperplasia, filling the neck from ear to ear, devoid of both pain and tenderness. And yet this case, with almost painless submaxillary adenitis, with suppuration, was apparently one of hyperplasia, constituting the incipient stage of lymphadenoma, while the two fatal cases referred to were without submaxillary adenitis, as appeared.

Finally it remains to be seen whether this case of apparent incipient lymphadenoma complicated with submaxillary adenitis must necessarily pass on from the hyperplasia to the formation in the lymphatics of "tissues similar to those observed in the glands," enlargement, induration, etc. (Roberts), or if the submaxillary adenitis with the drainage of suppuration, early treatment, and no very strong predisposition may not perhaps temporarily and possibly permanently stay or avert the consequences of this semimalignant disease. The abscess healed in about a week, and the fulness and induration have diminished up to the present, it being now the eighth week.

318 Madison Street, Paterson, N. J.

Cholelithiasis.—In considering the question when to operate Dr. Carl Beck (*New York Medical Journal*, May 8th) says: "In summing up, I would therefore advise the operation as follows: 1. Whenever the diagnosis of acute cholecystitis is made, cholecystotomy should be performed without delay. 2. Cholecystotomy should also be performed in chronic hydrops of the gall bladder. 3. Whenever acute colicky attacks in the region of the gall bladder, combined with fever, return for a second or third time. 4. Whenever jaundice is present for more than four weeks. 5. In gallstone ileus. 6. In all obscure cases when inflammatory symptoms resembling peritonitis turn up in the region of the gall bladder, exploratory laparatomy is indicated."

THE TREATMENT OF TAPEWORM, WITH REPORT OF CASES.

BY J. C. CHAMBERLIN, M.D.,

Any one who is privileged to examine and prescribe for a large number of people daily will not infrequently meet with a case of tapeworm. This distressing affection seems to be almost entirely confined to womankind. In fact I have not seen a single case of tænia saginata or solium in a man and my histories are all furnished by women. This is not strange, when the report of the military surgeons of the French army for ten years showed only one case in every thirty-six thousand men. I will not attempt to discuss the natural history of tænia or describe the familiar ribbon-like shape of the worm.

The diagnosis is often made by the patient before she presents herself; and again cases exist which have been treated for dyspepsia, anæmia, and many other disorders for a long time.

The symptoms are not well defined, though intestinal disorders, with or without pain, salivation, vertigo, loss of flesh with great increase of appetite, are the most common ones. The imagination in woman may vary the symptoms in many ways after once the presence of the worm is known.

The treatment pursued in the following cases I have found to give much satisfaction. It contains nothing new except in the combination.

Case I.—Miss A—— had complained of pains in abdomen with attacks of nausea and vomiting for the past two months. Emaciation and loss of strength had been rapid. She had been taking iron for her blood. After a brisk cathartic several links of tænia were found in the stools. Strict orders as to diet were then given. For one and a half days she was allowed only two cups of tea with toast. At the end of her fast she received a half-ounce of magnesium sulphate with two glasses of water; early the next day half an ounce of castor oil; about two hours later, after numerous stools, she took the first dose of the following mixture, followed by another an hour later, until all had been taken:

℞ Spir. chloroformi . . ℥ j
Ol. terebinthinæ,
Oleoresinæ aspidii . . . . . ℥ ss
Glycerini . . . . . q.s. ad ℥ ij
M. S. ℥ iij. q. h.

The stools after the administration of the castor oil contained several links of the worm, but not until the above mixture had blinded him did he let go of the lining of the intestine with his suckers, when the head and twelve feet of the worm were captured. This was no doubt a tænia solium.

Case II.—Mrs. B—— had had dull pains in the abdomen, constipation, and diarrhœa at intervals for the past six months, with increased appetite. She imagined all sorts of things after the discovery of her tapeworm, which she made herself. After the same treatment as outlined in Case I. she passed a worm exactly twenty-one feet in length. There had been no return of her trouble for over a year.

Case III.—Baby, two years old. The mother said that when the child was one year old it passed several feet of a worm. When I saw the child at its home in March, 1896, I gave it castor oil. Latter it passed ten feet of worm connected. In the morning I gave:

℞ Ol. terebinthinæ,
Spir. chloroformi,
Aspidii . . . . . ℥ ss
Glycerini . . . . . ℥ ss
Sig. ℥ i. q. h.

In the evening the child passed eleven feet more, as was ascertained by careful measurement. If the child had not been a strong one the above dose might be considered large. Again I anticipated that much would be vomited up, which was the case. There has been no return of trouble as yet.

Case IV.—Miss G——, December, 1896. For the past three months she had had nausea and vomiting at times. A physician had washed out her stomach, which gave temporary relief. She had vertigo, much nervousness, lumbar pains, frequent urination, and many other reflex symptoms. She was very fond of rare meat and had for some time past eaten a good deal of it. When first seen she said she had worms and that they were always dropping from the rectum. These worms proved to be the joints of the tænia. I gave fifteen minims of oleoresin aspidium every two hours, with the result that a large number of segments were passed. Two weeks later after another dose of aspidium she passed one worm exactly 5.3 metres (or 16¼ feet). Three months later she applied again for treatment. This time I used the mixture as prescribed in Case I., with the satisfaction of recovering the entire worm. By careful measurement it was found to be 8.2 metres (26½ feet) in length and almost intact. There has been no return of trouble for past seven months.

In the preparation of the patient there are certain things, as described in Case I., which must not be overlooked, for on these depends the success of the medicine. In order to find the head and smaller portions, a good deal of care must be exercised in the manner in which the stools are received and examined. A good routine practice is to have ready several pieces of cheesecloth, one of which is to be stretched over a receptacle. As soon as one evacuation has taken place, put another cloth in its place, spreading these cloths with contents on sheets of newpapers for examination. It is only thus with great care that all parts may be washed and saved, and the head may then often be discovered.

[illegible]

A CASE OF HODGKIN'S DISEASE COMPLICATED BY PULMONARY TUBERCULOSIS.

BY CHARLES H. LEWIS, M.D.,

[illegible]

The disease of many names, but perhaps best known to-day, in English-speaking countries at least, as Hodgkin's disease, was first systematically described by Richard Hodgkins[1] in 1832. His data were drawn from seven cases, extending over a period of nearly six years. Three or perhaps four of these cases in clinical history and autopsy closely resemble tuberculous adenitis; in two there seems no doubt that tuberculosis was the etiological factor.

A quarter of a century later Samuel Wilks[2] described five cases with the characteristic appearance of glands and spleen. Two of these cases presented such marked evidence of pulmonary tuberculosis at autopsy, that the diagnosis admits of considerable doubt. He classed the five, however, in the same category with Hodgkin's cases, and christened them all with Hodgkin's name. Wunderlich, Billroth, and Trousseau later described the morbid conditions, and each dubbed the disease differently—all appellations, however, being more or less descriptive of the dominant lesions. The course of the disease since its recognition in 1832 has run suspiciously close to tuberculosis, and the lines of differential diagnosis in many cases have been invisible to the naked eye of any but the reporter. Leukæmia is excluded by the

[1] Medico-Chirurg. Transac., London, 1832.
[2] Guy's Hospital Reports, Series 3, vols. ii. and ix.

microscope, and to that instrument it seems to me we must occasionally appeal in order to exclude a tuberculous gland infection.

In 1892 Professor Duplay[1] presented a case of Hodgkin's disease, complicated or associated with tuberculous adenitis. So far as I am aware this is the only case recorded as combining both diseases, although some histories might justify a diagnosis of either or both, according to the predilection of the reporter. The following case appears worthy of record, mainly on the ground of differential diagnosis.

L. P——, female, married, of Italian birth, was admitted to Columbus Hospital, August 20, 1896. She had been in this country sixteen years. Family history irrelevant, except that a brother is said to have died of "bronchitis." The previous history discloses no syphilitic, tuberculous, or malignant tendency, and is otherwise immaterial up to six months prior to admission, at which time, while pregnant, the patient noticed "some swellings in the neck." These swellings appeared soon after moving into a new house, the walls and floors of which were quite damp. Later she suffered some abdominal and back pains. Two or three months subsequent to the neck swellings similar swellings appeared in the axillary and inguinal regions. About this time she gave birth to a seven-months' child. After her confinement the swellings took on a very rapid growth, the back and abdominal pains increased; she says she became very pale and lost flesh and strength. A persistent and exhausting cough appeared about three weeks before admission; expectoration was scanty and from description without significance.

On admission the patient was weak, emaciated, rather anæmic, and complained chiefly of abdominal pains with more or less general tenderness. The cervical glands in front and behind, while not greatly swollen, on account of the emaciated condition stood out prominently. They were quite uniformly enlarged, about the size of a chestnut, symmetrically arranged, and extended along the sterno-cleido muscles from the lower jaw to the clavicles. The parotid and submaxillary glands partook of the general enlargement. The suboccipital glands, somewhat smaller, ran from the scalp to the ribs behind. Some of these glands were rather soft, but by far the greater number had a hard, smooth feel; they were not adherent to the skin or to each other; none seemed cheesy and none contained pus.

The axillary, epitrochlear, inguinal, and apparently the mesenteric glands adhered to this general description, except that all appeared of hard consistence. None was sensitive.

The spleen was enlarged, not painful.

The heart appeared healthy, rather rapid in action.

Lungs: Prolonged expiration over left apex; no râles or other abnormal physical signs were detected. Temperature, 102.4° F.; pulse, 120. Urine turbid; specific gravity, 1.012; acid; albumin one per cent. by volume; quantity normal. Microscopical examination negative. Blood count showed some diminution of red corpuscles and no leucocytosis; hæmoglobin, eighty per cent. Sputum scanty, muco-purulent; no tubercle bacilli found.

I ordered arsenious acid, one-thirtieth grain, t.i.d., to be gradually increased.

Repeated examinations of sputum were negative until August 28th, when tubercle bacilli were detected. At this time more of the neck glands had a softer feel —some almost cheesy, and one fluctuated. The other glands were apparently unchanged. Legs œdematous; abdomen distended, somewhat tympanitic, and containing a moderate amount of fluid.

September 1st, general condition progressively failing. An epitrochlear gland removed for examination.

September 9th, still more of the cervical glands had rapidly softened and appeared tuberculous. Bacilli in sputum. The epitrochlear gland removed on the 1st inst. showed no bacilli or tuberculous structure, but proliferation of lymph cells with increase of connective tissue. No marked leucocytosis.

On September 10th death took place by gradual exhaustion.

Temperature ranged from 100° to 120° F. during stay at hospital.

Autopsy by Dr. Farquhar Ferguson, twenty-four hours after death: Rigor mortis not marked. Poorly nourished. Œdema of lower extremities. Thorax: No adhesions; one ounce of dark-colored fluid in right pleural cavity. Heart shows cloudy swelling. The left lung is œdematous; has a small tuberculous nodule at apex; localized pleurisy in lower lobe due to a small infarction. Right lung œdematous, otherwise normal. Bronchial glands enlarged and cheesy. Liver, nutmeg. Spleen greatly enlarged. The gastric, hepatic, retroperitoneal, and mesenteric glands are all enlarged, from the size of a pea to a horse-chestnut, and of hard consistence. The mesenteric glands alone are fused together and form irregular masses, varying in size from a hen's egg to a large orange. A large mass of agglutinated glands partially covers the intestines in front. Right kidney shows cloudy swelling. Left kidney has capsule somewhat adherent, is contracted, and contains bands of connective tissue with evidences of chronic diffuse nephritis.

Microscopical examination of the lymph nodes shows proliferation of round cells. No invasion of other tissues. The cells seem to be crowded out by redundant new connective tissue, thus agreeing with Snow's[1] description. Spleen shows same condition. Kidneys present clusters of round cells throughout cortical portion.

I have recorded the autopsy notes rather literally and included all points in them which seem to bear directly or indirectly upon the disease. I have done this because cases of Hodgkin's disease are not frequently met with and autopsies still less. According to the reports for the past year of eighteen hospitals in this city, out of over seventeen thousand cases strictly medical there were but six cases of Hodgkin's disease. Of these six cases three were discharged "improved," one "unimproved," one has no record, and one, reported above, died. Stephen Mackenzie[2] has reported two cases with autopsy.

In the clinical history exposure to a damp atmosphere is the only apparent etiologial factor. The disease seemed to receive fresh impetus after the confinement, thus resembling a case mentioned by Gowers,[3] where the malady lay dormant during a pregnancy, but advanced with redoubled speed after delivery. The association of Hodgkin's disease with the tuberculous infection is chiefly interesting as duplicating Duplay's case, which, so far as I know, is unique in the literature of the subject. It is to be regretted that the cervical glands, which in their later manifestations, to the eye at least, certainly resembled tuberculous structures, were not examined for bacilli. The tuberculous nodule in the lung, however, with the bacillary infection of the sputum, makes the tuberculous element of the case positive. The other symptoms with the autopsy findings clinch the diagnosis of Hodgkin's disease.

Arsenic in increasing doses seems to be the only remedy available. Karenski[4] reports four cases, with

[1] La France Méd., 1892, p. .

[1] British Medical Journal, 1886, p. 133.
[2] The Lancet, January 4, 1896.
[3] Reynolds' "System of Medicine."
[4] Berlin. klin. Wochensch., 1884.

three recoveries; one of the latter subsequently died of phthisis, a fact which may throw doubt upon the diagnosis. Rosenberg[1] followed a case six years without finding any curative effect in arsenic. Dreshfield[2] reports two incipient cases cured by arsenic. Mackenzie's cases were uninfluenced by arsenic and suprarenal extract. In the case reported not the slightest temporary benefit from the arsenic was noted.

28 West Sixty-First Street.

Society Reports.

TWELFTH INTERNATIONAL MEDICAL CONGRESS.

Held in Moscow, August 19, 20, 21, 22, 23, 24, 25, and 26, 1897.

(Special Report by Direct U. S. Cable to the Medical Record.)

GENERAL SESSIONS.

First Day—Thursday, August 19th.

The opening session of the congress was not held in the Grand Theatre, as was originally intended, since it was feared that the hall would be too small to accommodate the immense assemblage, and accordingly the meeting was called together in the Military Manœuvre Hall, a large armory, over five hundred feet in length, which serves excellently for the reunions. All the various bureaus of the congress have also been established in the same building. The Chamber of Commerce, an almost equally large building, is to be utilized for all the public functions of a strictly social character, and is admirably adapted to this purpose. Moscow is crowded with physicians and their families, conservative estimates placing the entire number of visitors, physicians with their wives and daughters, at fully ten thousand. The fears which had been entertained and freely expressed that the railroads would be unable to transport the great crowds converging to Moscow from all points on the frontier were found to be groundless, for the accommodations were ample. The customs regulations were found to be no more vexatious than they are everywhere; the officials on the frontier and everywhere on the route were most obliging, and the passport formalities caused no trouble to any one. Indeed, there is no word but of praise for Russian courtesy and Russian hospitality. Shortly after one o'clock the Grand Duke Sergius stepped forward, and in a few formal words declared the Twelfth International Medical Congress opened.

Address of Welcome.—After the applause following this announcement had died away, Hospodin Dylanov, the minister of public instruction, delivered a brief address of welcome, couched in what Virchow and others of his hearers, who were competent to judge, pronounced most classical and finished Latin. He spoke of the great obligation of all the members of the congress, the Russians especially, to the Tsar, whose unbounded liberality alone had made it possible to bring together this great assemblage in the heart of Russia, for without not only his consent, but his active and personal support and aid, this congress could not have been held in this place. He bade all his hearers welcome to Moscow and to Russia, and expressed the earnest hope not only that the scientific labors of the meeting would be productive of great good to humanity and of added renown to the distinguished men who assisted at the congress, but that all here assembled would enjoy to the utmost the moments of relaxation between the meetings; if they did not, it would, he was sure, not be the fault of the citizens of Moscow and of Russia, lay and medical.

President's Address.—Professor Sklifosovsky, the president of the committee of organization, then spoke. Moscow, he said, greeted joyfully this brilliant assembly of most eminent medical authorities who had gathered there from all parts of the civilized world, even from Eastern Asia and from distant America, North and South. There was no longer, he continued, a wall between Russia and the rest of Europe, but the former was as open as the plains which his hearers had seen after crossing the frontier. To-day Europe is united as it never was before; the east and the west are drawing together and becoming as one in the bonds of a common civilization. It is only now that Europe is beginning to recognize its debt of obligation to Russia for protecting it from the incursions of the barbarians. For ages the Slavs stood on the outskirts of civilization with their faces turned to the hordes pouring toward the west and threatening the very existence not only of the Slavs themselves but of the peoples of the western lands as well. In this long conflict Russia, in order to face the foe, stood with her back to the rest of Europe, and so the latter came to regard her as a race apart and not as of the family of nations. In consequence of her isolation and of the necessity she was under of first redeeming her land from the Tartars and then reuniting its severed parts, Russia had long remained behind the rest of Europe in culture and the arts of peace, but she was now hastening with giant strides to take her place in the front ranks, shoulder to shoulder with the other nations of Europe and America. With the strength of an unexhausted race she had been able to accomplish in a portion of a century what it had taken other nations three centuries to perform. This was not said in a spirit of boastfulness but in one of confidence and of dignified assertion. The medical men of Russia were now ready to co-operate with those of all the world in furthering the uplifting of their beloved science.

An International Language.—Continuing, Professor Sklifosovsky said that the one great obstacle to medical progress was the want of a common medium of communication between the men of science of different nationalities. Nowhere was this almost fatal lack so fully realized as in Russia. The great mass of Russian medical literature was a sealed book to western peoples, and few outside of the country had any conception of the enormous amount of scientific work that was being done there. Russians recognized that their language was too difficult ever to become universally known to westerners, and they were therefore the more keenly alive to the necessity of the adoption of some international speech. He hoped that this would be one of the useful works of the present congress. He would suggest the appointment of a committee to draft a preliminary agreement which should be laid before the next congress for consideration.

Report of the Secretary-General.—Prof. W. K. Roth, of Moscow, the secretary-general of the executive committee of the congress, then presented his report. His first and most pleasing duty, he said, was to thank in the name of the congress, His Imperial Majesty, the Tsar of Russia, the "High Protector" of the congress. Without his magnificent liberality the meeting would have been impossible. The Russian members of the congress, he continued, have withdrawn, wherever necessary, to yield their places on the programme of the sections to the foreigners. In the name of the committee he would crave the indulgent pardon of all for the delay there

[1] Berlin. klin. Wochensch., 1895.
[2] Med. Chron., 1895–96, vol. iv.

had been in the distribution of railway tickets and in publishing details concerning matters of interest to intending visitors. Their only excuse was that they feared to promise too much and were therefore obliged to wait for the necessary authorization, and, as everybody knew, the unwinding of red tape is a slow process. He was able to report the attendance of 7,300 members in Moscow. Of this number more than 3,500 were from Russia, 800 from Germany, as many from Austria, 400 from France, 300 from Italy, 300 from England, 120 from the United States, 30 from Mexico, 10 from Japan, 4 from China, and the rest from the less populous countries of Europe, South America, and the East.

The Moscow International Prize.—Prince Gallitzin, the mayor of Moscow, then greeted the members of the congress on behalf of the great municipality which it was his honor to represent. He announced that the city of Moscow had desired to express in some appropriate manner its appreciation of the great honor that had been bestowed upon it by its selection as the place of meeting of this greatest of congresses, and it had decided to establish a prize of 5,000 francs, to be awarded at each international congress, for all time to come, to the person who in the interval since the preceding congress shall have done that medical work which shall be deemed of the greatest benefit to humanity.

Addresses from National Delegates.—Short addresses were then delivered by delegates from the various countries represented at the congress. General Kohler, surgeon in the German army, said he brought greetings from his gracious master, the German emperor. Peace was the watchword of the times, peace in order that mankind, under the leadership of the medical profession, might wage war against the common enemy, disease. The enormous strides that medicine has made in recent times is shown by the fact that morbidity and mortality from disease are now less than one-half what they were only two decades ago. This address had something of a political turn, and whenever the names of the two emperors were mentioned the speaker was interrupted by the cheers which he evidently expected. He concluded with "God bless the Tsar," and his words brought the audience to their feet with a thunder of cheers. Other representatives who spoke were von Ziemssen for Bavaria, Gussenbauer for Austria, Sir William MacCormac for Great Britain, Thayer of the Johns Hopkins' University for the United States, Dujardin-Beaumetz for France, Hlawa for Bohemia, Kocher for Switzerland, and Haga for Japan. The latter said that he had been authorized to invite the next congress to assemble in Tokio, and he could assure his hearers that they would meet with a warm welcome should they consent to honor Japanese medicine by an acceptance of the invitation which it was his pleasure to extend to them. Professor Hlawa, of Prague, spoke in Bohemian and was loudly and enthusiastically cheered by all those present of Slavic stock. Dr. Dujardin-Beaumetz, medical inspector of the French army and director of the sanitary service under the minister of war, received the greatest ovation from the Russians present, exceeding that given the German representative, in recognition doubtless of the popularity of the Franco-Russian alliance. Hearty cheers also greeted Professor Kocher, of Berne, but this was of course devoid of political significance and was an evidence simply of his personal popularity.

Invitation to St. Petersburg.—The Mayor of St. Petersburg then spoke briefly, saying that he had come from his own city to Moscow expressly to invite all the members of the congress to visit the northern capital after the labors of the meeting were over. Moscow was, indeed, the heart of Russia, but Russian hospitality could not be confined to the heart alone; it extended to the head as well. If his hearers would come they should come as guests of the government and of the municipality. The railway transportation would be free of all charge, and many fêtes in honor of the congress had been arranged for.

Honorary Presidents.—The announcement was then made of the honorary presidents of the congress. These were: Germany—Virchow, Leyden, Ziemssen, and Waldeyer; Austria—Gussenbauer, Hlawa, and Rudiger; Great Britain—Stokes, MacCormac, and Simpson; United States—Senn and Thayer (Billings, it was announced, would have been one of this number had he not been absent); Spain—Robert; France—Lannelongue, Le Dentu, Grasset, and Pinard; Italy—D'Antona, Bottini, and Lombroso. The name of the latter was greeted with prolonged cheers. A recess of five minutes was then taken before the beginning of the scientific work of the congress.

The Continuity of Life.—Prof. Rudolph Virchow, of Berlin, delivered the opening address, taking for his subject the continuity of living matter. Life, he said, has no other origin than from life itself, and this is one of the truths which the labors of pathologists and biologists of the present century have established beyond the possibility of doubt. For long many men of acumen and true scientific minds were inclined to doubt the unbroken continuity of life and to regard spontaneous generation as possible if not actually probable. This theory is, however, dead, and dead beyond the possibility of resurrection—a result which we owe to the labors of many earnest investigators, conspicuous among whom stands the grand figure of Louis Pasteur. The rôle of chemical action in the processes of life or of its continuity has also been found to be less important than it was at one time supposed to be. Life is in the cell. He who speaks of serum as a vital force apart from cells is wrong. The grand truth of cellular succession may be assailed in the future as it has been in the past, but it will never be thrown to earth: it will shine through all the long years of the twentieth century, few if any of which, the venerable speaker said in a half-regretful voice, it would be his privilege to see. This might be his last congress (cries of "No, no!"), but whether it was or not, his earnest hope was that the final mystery of life might be solved and its solution proclaimed at some future congress. If it ever is to be solved, solved it will be by the united labors of the biologist and the pathologist; it is in their laboratory that the key will be forged which shall unlock the door that still holds us back from a full knowledge of the processes of life.

The Sclerogenic Treatment of Surgical Tuberculosis.—Professor Lannelongue, of Paris, delivered the second general address, in which he developed at length the method for some time advocated by him for the cure of local tuberculosis. Resection of tuberculous joints was, he said, a measure of much utility and for a long time was the best we had for the arrest of this destructive process, but at best it was a makeshift. It was a mutilation and in so far a confession of defeat by the surgeon. Furthermore, it was not always possible to embrace all the diseased tissue in the area operated upon, and then relapses were almost sure to take place. Injections of antiseptic substances had been suggested and had been actively urged by some enthusiasts, but practical and extensive trials had demonstrated their inefficiency. Theoretically they ought to destroy the tubercle bacilli and put an end to the disease, but practically they did no such thing. He had conceived the idea of building a wall within the tissues, enclosing on every side the diseased part, and so shutting off the pathological focus from any communication with the healthy structures in the neighborhood. Very numerous clinical and experi-

mental facts had been gathered to demonstrate the value of this method. By injecting irritating substances deeply into the parts surrounding the diseased centre on every side he was able to cause the production of an envelope of fibrous tissue enclosing the tuberculous focus. These irritating injections, besides leading to the production of fibrous tissue, excited an afflux of leucocytes to the part, whose phagocytic action contributed powerfully to the destruction of the pathogenic agents of the disease. The speaker referred to the careful and convincing experiments of Nocard, who had demonstrated by them that the tubercle bacilli, when enclosed by this artificially produced sclerotic zone, were all killed in from six to eight weeks.

Relationship of Physiology, Pharmacology, Pathology, and Practical Medicine.—Dr. T. Lauder Brunton, of London, delivered an address with this title (see page 296).

Reception to the Congress.—In the evening a reception was given to the members of the congress and their ladies by the medical men of the city. It was held in the Chamber of Commerce, the immense galleries of which were thronged by a concourse of more than ten thousand people.

Second Day—Sunday, August 22d.

The second general session was opened at 2 P.M. on Sunday.

The Next Congress.—The announcement was made that the next international congress would be held in Paris in the summer of 1900. Professor Lannelongue was appointed president of the organization committee, and Dr. Chauffard, professeur agrégé in the Faculty of Paris, honorary secretary-general. This announcement was received with prolonged cheers.

Etiology of Progressive General Paralysis.—Prof. v. Krafft-Ebing, of Vienna, then delivered an address, taking as his subject a consideration of certain of the etiological factors of general paresis of the insane. In order to obtain a clear understanding of these factors, he said, it would be necessary to review the conditions of life in the latter half of the century which is now so rapidly drawing to a close. Unless we pause a minute in our onward rush and look back fifty or a hundred years, we cannot realize the change that has occurred. The struggle for existence has become much more severe than it was; competition is becoming more and more active, and this competition is not only between the individuals in one community, one country, or one continent, but all the world is engaged in the struggle. The steamship, the railway, the telegraph, have brought distant countries in contact with each other and made them rivals in the fight for existence. One result of this is that people are being driven more and more from the country into the crowded centres of population, individual effort is vain, and success comes only by means of combinations of capital and of labor. The vital tension has become extreme, and the mass of mankind is struggling now, not for ease and comfort, but for very existence. This strain has become so exhausting in its effects that men are driven to artificial means of relief, to nerve stimulants such as alcohol, tea, coffee, and tobacco. The result of all this overwork and worry and stimulation is seen in the nervous heredity with which so many of our time are cursed. General paralysis is an end-of-the-century disease, the predisposing cause of which is this nervous overtension, the exciting cause of which is syphilis.

The undoubted etiological rôle played by this disease is shown by many facts. In the first place we see that the proportion between the sexes is the same for sufferers from syphilis as it is for general paralytics, namely four men to one woman. General paresis is more common among men of the upper classes, such as army officers, well-to-do merchants, bankers, and the like, who are among the least circumspect in their sexual relations, while it is very rare among the clergy and among women of the upper classes. The principal objection thus far urged against this theory has been that it is not possible always to obtain a history of syphilis in cases of general paralysis. But the rich statistics of the Vienna General Hospital show a still greater proportion of patients with unmistakable tertiary lesions from whom absolutely no history of syphilis could be obtained than of general paralytics from whom no syphilitic history could be obtained. Nine general paralytics in Vienna, who were without any syphilitic history, were recently inoculated with syphilitic virus, and although they were under daily observation for a period of six months not one presented the slightest syphilitic manifestation. It is highly improbable, if not actually impossible, that these nine persons would have shown themselves refractory to the action of the syphilitic virus had they not acquired an immunity through a previous attack. The modern struggle for existence contributes to the frequency of general paralysis not only by predisposing the nervous centres, but also by making syphilis a more common disease. The necessities of modern life cause late marriages, and this enforced celibacy of the younger generation leads to an increase in prostitution. Indeed, civilization and syphilization have come to be correlative terms. The remedy for this deplorable condition is to be found in education, moral as well as mental. Young people must be warned in season, and their teachers must not be content with preaching abstract morality—it is the concrete that appeals to youth. The young must be told of the dangers, proximate and remote, of an unbridled indulgence of their appetites; they must be counselled to moderation in work, to the avoidance of worry, and the consumption of alcohol should be limited as far as practicable. Especially during the growing period our boys and our girls should be watched over and trained up to lives of sobriety—it is at this time that the foundation of a sound constitution, bodily and mental, must be laid.

Classification and Surgical Treatment of Acute Peritonitis.—Dr. N. Senn, of Chicago, then delivered an address with this title (see p. 289).

The Plague.—Dr. Metchnikoff, of Paris, had selected this as a timely subject for discussion at the present time. He described Yersin's plague bacillus, and said that the existence of spores could not be doubted, for an explanation of the many cases of infection through clothes and other fomites after months of desiccation was otherwise impossible. The bacillus itself is extremely delicate and is most easily destroyed. The speaker then described the method of antitoxin manufacture as employed by Roux at the Pasteur Institute in Paris, and explained why this serum when practically tried in India had proved inefficacious. Because of the fear of causing a spread of the disease in Europe, the thirty horses inoculated in Paris in order to procure antitoxic serum for use in India were inoculated with dead cultures. That this was the true reason for the failure of Yersin's tests was shown by the fact that the serum employed in China, which was obtained after inoculation with living cultures, was curative. Thus the mortality of the Chinese cases in which the serum was employed was only seven per cent., while that of the Indian cases was forty-nine per cent. After Yersin arrived in India he made use of living cultures in the manufacture of antitoxin, but his ill luck pursued him, for no sooner had he got everything well started, and had

gone away again, than the chief veterinarian of the laboratory died of pernicious malaria, and those who were left in charge did not conduct all the stages of the manufacture properly. Nevertheless, the serum, poor as it was, was better than nothing. The mortality of plague when untreated is eighty per cent., so that its reduction to forty-nine per cent. was a decided gain even if not a perfect result and not what was anticipated. There is now being made, however, an antitoxic serum of great strength from living cultures which is undoubtedly efficacious in conferring immunity and in curing the disease in its early stages. Recent reports from India declare that the protective immunizing power of this serum is now greater than is that of the serum prepared after Haffkine's method. Inoculations with this serum are devoid of all danger, and produce absolutely no reaction, and the protective influence of the antitoxin is fully as lasting as is that of Haffkine's serum. This, the speaker continued, is an undoubted triumph of orrhotherapy, and establishes the principle of preventive inoculation on a foundation which can never be shaken. That at least some specific diseases can be prevented and cured is a fact that cannot be gainsaid at the present day by any but the most blindly sceptical. A general employment of this protective serum would guarantee the civilized world against an invasion of the plague. It would be too much to hope for the stamping out of the disease among the millions in Asia, where the pest has its habitat, but it would be feasible to inoculate every one coming from infected regions to Europe and other parts of the world and so prevent the spread of the disease.

The speaker closed with an eloquent peroration, recounting the obligations of the peoples of all lands to men of science. The contentions of scientists, one with another, sometimes excited the scorn and contempt of the ignorant, but there is going on here as everywhere a struggle for existence, and the law of the survival of the fittest is as inexorable in its action here as elsewhere throughout the universe. Medical selection, indeed, exerts a most powerful influence over natural selection. It is through rivalry, through criticism, perhaps even through the aspersions of the jealous and the envious, that truth is brought to light and firmly established. The discoveries of recent years in medicine have increased the span of life, and the therapeutic secrets which have been wrested from nature herself are now finding wider and wider employment to the advantage of all, of the poor as well as of the rich, of the millions in distant India and China, as well as of the more cultured inhabitants in Europe and America. This science of the closing years of the nineteenth century is greater in its humanitarian aims than was dreamed of by its early votaries, and who can tell what the twentieth century will reveal? The one desire of the speaker, his earnest hope, was that this work for humanity would continue and would prosper, as it must in these times of union and mutual encouragement of medical men and scientists in all the countries of the world.

The Mutual Relations of Pathology and Therapeutics.—Dr. Robert, of Barcelona, delivered the next address. The cell, he said, is the unit of being. Every function is dependent upon the integrity of the cell, upon its condition of nutrition, and upon its power of reaction against external influences. Pathology consists in the study of disturbed cellular life, of the disturbed relations between the nucleus and the protoplasm of the cell body. The more we study cellular pathology and the greater reliance we place upon its teachings, the more certain is our progress toward the goal of a rational and effective therapy. The treatment of disease must have for its object a rearrangement and a rectification of the disturbed relations between the cells and between the different parts of each cell.

Man, however, is more than a mere cellular congeries; he is a being endowed with certain powers of resistance against influences which threaten his well-being or his very existence. Disease is not dependent so directly upon the action of any specific micro-organism as it is upon an increased organic susceptibility. The mystery of disease is still a mystery, and it has not been solved as yet by any of the facts of bacteriology or pathology. One man is affected by disease, another exposed to the same influences escapes unscathed. A neoplasm which is to-day benign in its appearances may to-morrow assume an entirely different aspect and take on all the characters of malignancy. Why is this? We cannot yet answer. The human organism reacts as a whole to the assaults of disease, and not by the isolated action of any individual cell or group of cells. A specific infectious disease is warded off or overcome, not by phagocytosis alone and not by the special chemical properties of the blood serum alone, but it is conquered by the organism considered as an entity.

Our therapeutic efforts must be directed in a way to furnish aid to the entire organism in its struggle against disease, to strengthen its innate powers of resistance, and not merely to fortify one of the approaches, leaving the others unguarded. The indications of a rational treatment of disease are to combat the influences which have weakened the body and so have predisposed it to yield to the assaults of the morbific agents; to support and increase the cellular energies; to strengthen and stimulate the function of those organs whose office it is to preside over metabolism and furnish a suitable pabulum to the rest of the body; and to protect the sensitive nervous system, upon whose integrity so much depends, against injury.

The so-called causal treatment of disease is not always effective and its advantages are often illusory. In our well-meant efforts to repress and expel the causes of disease, we may easily go too far and injure the already weakened organism in its resistant powers. It will be of little avail to annihilate the greater part of the attacking force if we thereby so weaken the defence that it is unable to resist the small remnant of the enemy which has escaped the action of our destructive agents.

We must rather imitate nature in her therapeutic efforts, which, after all, are so often effective. The modern treatment of diphtheria by means of injections of a specially prepared antitoxic serum is an imitation of nature and is a brilliant exemplification, the orator maintained, of the wisdom of this course. The triumphs of orrhotherapy in the management of diphtheria have been great and indisputable.

In health as in disease all the organs work together, and it is in a disregard of this great truth that the chief danger of specialism exists. The specialist is too wont to consider the needs of one system or of one organ in a system, separating it from the body as a whole. This danger is an imminent one at the present day, and it is one against which the true scientific physician must never be weary of protesting. The therapist must be a man of broad views, and, however small and apparently circumscribed is the lesion he is called upon to treat, he must keep ever before him the sufferings of the entire organism, and must recognize and act upon the unquestionable fact that man is a unit and that we cannot hope to treat with success a part while ignoring the whole.

Finally, the speaker said, the nervous system must be strengthened and enabled to act its part in the struggle against disease. This most vital part of the human organism is not influenced by medication alone, but there is here room for that imponderable

therapeutic agent which is personal to each physician and which finds expression in his moral influence over the patient. To fulfil in the highest degree his divine mission the true therapeutist must be a physician of the mind as well as of the body, he must be able to inspire in his patient that confidence in himself and that hope in the efficacy of his remedies without which his best directed efforts will scarcely avail.

The second general session was then declared adjourned.

(To be Continued.)

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, March 24, 1897.

WARREN COLEMAN, M.D., VICE-PRESIDENT, IN THE CHAIR.

DR. E. P. SHELBY, JR., presented a specimen of

Rupture of the Heart.—The lesion occurred in a woman, sixty-six years of age, who had been treated for heart disease ten years before. She was confined in an insane asylum for some time, but was discharged as harmless three years ago. During the past few months she had lived in constant fear of being poisoned, and had refused every article of diet except eggs. Three days before death she began to suffer from diarrhœa and nausea. These symptoms grew worse until the third day, when she died suddenly after a violent paroxysm of vomiting. An autopsy was held forty-eight hours after death, by Dr. E. J. Donlin, who had kindly sent him the specimen and the history of the case. The body was greatly emaciated. The brain was anæmic, but showed no other gross change. The left pleural cavity was filled with clotted blood. The right pleural cavity was normal. Both lungs were anæmic. There was a distinct tear in the left side of the pericardium, and the sac contained several ounces of blood. The heart was covered with blood, and on its posterior surface presented a rupture in the wall of the left ventricle, about one-half inch long, running parallel to and one-half inch from the ventricular septum, about midway between the apex and base. Around the point of rupture there was an extravasation of blood under the pericardium. On the inner surface of the ventricle was an L-shaped tear, whose long side ran from above downward, and measured one and one-half inches. The short side extended three-fourths of an inch to the left. The heart wall at the point of rupture was rather thin, and somewhat paler and softer than normal, but there was no indication of ulceration. Minute examination revealed a thrombus in the right coronary artery, which had started in a calcareous area about one inch from the aortic orifice. There were also two calcareous patches in the left coronary artery, which greatly diminished its lumen. As the thrombosed vessel was the one which nourished that part of the wall in which the rupture occurred, it was probably the predisposing cause. The heart weighed thirteen ounces. There was no valvular change except a slight thickening of the mitral valve. The stomach contained a small quantity of yellowish mucus and several pieces of hard-boiled egg. The mucous membrane was congested. The small intestine showed marked congestion in places. The kidneys, liver, and spleen were anæmic, but no pathological changes were noted. The violent effort at vomiting, which was probably due to the irritation of the hard-boiled eggs, seemed to have caused the rupture in the heart wall; and the fact that the pericardial sac was also ruptured would indicate that the heart had continued to contract after the initial rupture had occurred.

DR. WARREN COLEMAN said that it was the first case of rupture of the heart that had ever come within his observation, and it was exceedingly interesting from the fact that from the gross examination there was no evidence of any change in the heart at the location of the rupture. But in these cases of rupture of the heart there was almost always some lesion which appeared to have impaired the integrity of the wall.

Pertussis; Punctate Hemorrhages in the Brain.—DR. ROWLAND G. FREEMAN presented a brain which was the seat of punctate hemorrhages following whooping-cough. The specimen had been removed from a colored child, two and one-half years old, who had been admitted to the Foundling Hospital in a moribund condition. It had had, at the time, a temperature of 101.5° F. and a pulse of 180. There were general convulsions, with attacks of coughing, and these attacks were followed by some strabismus. The child died twenty-four hours after admission, and the autopsy was made forty-eight hours after death. There was no rigor mortis. There was one ounce of serum in the right pleural cavity together with a small amount of fibrinous exudate. The right lower and middle lobes of the lung, and the posterior fourth of the upper lobe, showed marked lobular pneumonia. In the left pleural cavity were four ounces of serum. The pericardium contained one ounce of serum. The right auricle was distended with a firm clot, which passed into the right ventricle and up into the pulmonary artery. The liver was considerably enlarged. The spleen was enlarged below the free border of the ribs. The stomach was distended with gas. The brain showed punctate hemorrhages throughout the cerebrum, but none in the cerebellum or in the pons. These hemorrhages were confined to the white matter.

The speaker said that in cases of pertussis, hemorrhages were common in many places, but were noticed most often, perhaps, in the conjunctiva. Epistaxis, hæmoptysis, hemorrhage from the ears, and purpuric eruptions were also not infrequent. Trousseau had reported a case in which a child was said to have cried "tears of blood." The occurrence of cerebral hemorrhage in connection with pertussis had been reported by Marshall, in 1885.

Dr. Freeman also presented specimens from two cases of

Large Waxy Liver in Children.—The first was that of a child of six years, who died at the Foundling Hospital, on March 21st. It had been under observation in the hospital for a number of years. In July, 1896, it was noted that the child had an upper lumbar and a lower dorsal kyphosis, with a sinus draining below the right hip. In September the child had gastro-enteritis, with a temperature of 103° F. In October an abscess developed in the lumbar region and the old sinus reopened. In November the liver was first noticed to be enlarged. There was no cough nor were there any signs in the chest. Examination on March 1, 1897, showed the liver to be very large and firm, and the spleen also increased in size. The urine contained twenty-five per cent. of albumin. On March 10th there was fluid in the abdomen, the extremities were swollen, there were signs of fluid in both sides of the chest, and the liver extended to the umbilicus. On March 21st the child died. The autopsy was made twelve hours after death. There was no rigor mortis. The body was very markedly emaciated. The peritoneal cavity contained twenty-five hundred cubic centimetres of clear serum. The lungs and large bronchi contained some mucus. The bronchial lymph nodes were enlarged, and one contained some fibrous tissue, looking somewhat like an old phthisical process; there was, however, no active tuberculosis found in these nodes. The diaphragm was at the fourth space on both sides. The liver extended from the fourth space to the level of the umbilicus; it was very hard and waxy. The spleen extended below the free border of the ribs and was also waxy.

The pancreas was large. The adrenals were enlarged, and apparently both were tuberculous. The kidneys were pale and waxy. The mesenteric lymph nodes were enlarged. There was a bone abscess connecting with the spine.

Dr. Freeman said that this was the first case of waxy liver that he had ever seen at the Foundling Hospital, an institution in which, for the most part, the children are under five years of age.

The second case of waxy liver occurred in a child of ten years. This child had had a persistent and progressive anæmia for very nearly a year. In September the hæmoglobin was only 27.5 per cent., but there was no leucocytosis. The cause of the trouble was not suspected. At the autopsy the examination of the lungs and heart was negative. The liver extended from the fourth space to the umbilicus, and was hard and waxy. The spleen extended to a line drawn from the umbilicus to the left anterior superior spine of the ilium. The left kidney was the seat of a very large abscess, and the capsule was hard and thick. The right kidney was pale and waxy. In this case the right adrenal, or the one on the side opposite to the kidney lesion, was tuberculous. There were also two tuberculous mesenteric lymph nodes. No other tuberculous lesions were found. The speaker remarked that, so far as he had been able to ascertain, tuberculosis of the adrenals is very rare in children. There was no pigmentation of the skin or other evidence of Addison's disease.

Dr. Coleman said that he had carefully examined the suprarenals in all autopsies that he had made during the past five years, yet he had found them infected in only three cases—all adults. From some experiments that he had made on animals he had been led to believe that there was something about the suprarenals that tended to protect them in large measure from infection.

Dr. Shelby asked if tubercle bacilli had been found in the pus from the abscess in the kidney.

Dr. Freeman replied that, owing to a misunderstanding, such an examination had not been made. The appearance was that of a tuberculous abscess, but microscopical examination of the wall did not give evidence of any tuberculous process.

Dr. David Bovaird said that the second child had come under his care first for a tuberculous process of the spine, and had been treated with a brace. After a year a psoas abscess developed, and after a while this ruptured. The discharge continued for some time, and then the sinus closed. Following that, a lumbar abscess appeared and steadily increased in size. The enlargement of the liver and spleen was apparently secondary to the lumbar abscess. It was interesting to note that, although the disease in the vertebral canal was apparently in process of healing, the lumbar abscess developed.

The society then adjourned.

Stated Meeting, April 14, 1897.

Warren Coleman, M.D., Vice-President, in the Chair.

Dr. John H. Larkin presented an

Aneurism of the Thoracic and Abdominal Aorta, which had been taken from a man, forty-five years of age, who had a pronounced syphilitic history. For a number of years a pulsating tumor had been noticed in the epigastric region, but it had never caused any distress. He entered the hospital about one year ago, and after remaining there for one and one-half months went out again. About two months ago he was readmitted for a severe pain in the back. It was found that the pulsation was much more marked than on his first entrance to the hospital; he suffered much from dyspnœa, and the heart was displaced laterally. The breath sounds were very indistinct in the left chest. One night while in the hospital he got up and walked across the ward, and then fell down dead. It was found that the aneurism had ruptured posterior to the peritoneum and had discharged downward toward the kidney. The case was interesting on account of the large size of the aneurism and the comparative absence of urgent symptoms. The seventh and eighth and ninth vertebræ were eroded.

Aneurism at Apex of Heart.—Dr. Larkin then presented a rather large heart, removed from a woman, eighty-six years of age. She had never complained of any cardiac trouble, and death resulted from apoplexy. The autopsy showed a small aneurism at the apex of the heart, with complete absence of cardiac muscle at the apex of the left ventricle. There was a replacement fibrosis at this point. Some parts were quite calcareous, and there was also slight interstitial myocarditis. The coronary artery was the seat of atheroma.

Aneurism of the Sinus of Valsalva.—Dr. Larkin presented still another heart. It had been taken from a man, thirty-five years of age, who died from chronic Bright's disease. There was a history of marked syphilitic disease. At the autopsy, in addition to marked chronic diffuse nephritis, there was a large aneurism of the sinus of Valsalva. The posterior coronary artery was found only with some difficulty, and it was markedly atheromatous. It could be traced up to the aneurism, but the opening into the aneurism could not be detected. The coronary artery contained a little semifluid blood.

Dr. Larkin said that Sibbs had made a collection of 860 cases of aneurism. Of this number 87 were at the sinus of Valsalva, 480 were of the whole arch, 140 of the ascending portion, 120 of the transverse portion of the arch, 112 of the ascending and transverse portions together, 72 of the descending portion, 20 of the transverse and descending portions of the arch. There were 71 aneurisms of the thoracic aorta, 131 of the abdominal aorta with the cœliac axis, and 26 of the lower portion of the abdominal aorta.

Dr. Shelby asked if in the case of aneurism of the sinus of Valvsalva, examination had been made of the muscular fibre; and, if so, if any fatty degeneration had been found in the region which should have been supplied by the coronary artery.

Dr. Larkin replied that the heart muscle was not fatty. If the coronary artery really had been occluded, there should have been an important lesion of the heart muscle itself. In this case there had been no symptoms at all referable to the heart.

Dr. Coleman said, regarding the question of the occlusion of the coronary artery, that in this connection the researches of Porter, of the Harvard Medical School, were of special interest. His experiments on the heart of the dog showed that the coronary arteries were terminal, and if one portion were occluded the part supplied by it became infarcted. Even though there were an anastomosis, there was no passage of blood from one coronary artery to the other by reason of the difference in pressure. If these experiments were correct, then we must assume that this coronary was open; otherwise there would have been a degeneration of at least a large part of the heart wall supplied by this artery.

Dr. Larkin said that a number of French pathologists had gone over this ground experimentally, and had come to practically the same conclusions. He now had in his possession a specimen from a case in which vegetations from the valve had gotten into the coronary artery and completely occluded it. In this heart there was a distinct softening of the heart muscle, and also a globular thrombus.

Peruvian Heads — Savage War Trophies.—Dr. Oscar A. Holder exhibited one of the Peruvian heads or trophies so highly prized by certain tribes near the head waters of the Amazon. He said that these tribes were almost constantly at warfare with one another, and instead of scalping a victim it was their custom to decapitate him and put the head through some secret process by which the features were wonderfully well preserved, appearing like a diminutive of the original. Fine metallic crystals could be discerned in some portions of the specimen.

Dr. Shelby said that he had just been speaking with a man who travels extensively in Brazil, and who had brought one of these heads to the Metropolitan Museum within the last few days. This gentleman had told him that the process consisted in skinning the head and packing the integumental covering with the bark of a certain tree. It was then hung up and smoked, after which it was dried in the sun.

Thrombosis of the Pulmonary Artery.—Dr. Warren Coleman presented a specimen of thrombosis of the pulmonary artery, removed from a woman, twenty-seven years of age, who about a month previous to her death had given birth to a child at full term in the emergency department of Bellevue Hospital. She was discharged at the usual time, the ninth day. About two weeks later she entered the general hospital with a moderate temperature, complaining of slight pain in the infra-axillary region on the right side. The presence of pus was suspected in the pleural cavity, since the uterus was free from sepsis. The patient was confined to bed. During the three or four days immediately preceding her death she suffered from slight shortness of breath, and the night nurse reported that after twelve o'clock on the night she died she had been very restless, tossing from one side of the bed to the other. A little before six o'clock that morning she had sat up in bed to bathe her face, and a few minutes later, while taking a cup of coffee, fell back upon the pillow. The house physician, Dr. R. E. Brown, was called, and he found the patient cyanotic and gasping for breath. The pulse was rapid, small, feeble, irregular, intermittent, and at last imperceptible. Stimulants were administered, but without avail, and the patient died in a few minutes.

The autopsy was not made until four days after death, but the body had been kept on ice and was in good condition. The pericardium, endocardium, and valves were normal. The right ventricle was markedly dilated and contained a large amount of dark, imperfectly coagulated blood. The walls of the heart were soft and light colored, presenting evidences of parenchymatous changes. The weight of the heart after the blood had been washed out was thirteen ounces. Part of this hypertrophy, at least, might be accounted for by the recent pregnancy. Both pleural cavities contained a moderate amount of liquid, though there was no pleurisy. The cut surfaces of the lungs were congested and œdematous. The lower first divisions of the pulmonary artery to both lower lobes contained thrombi which were intimately adherent to the walls of the vessels. This union did not extend entirely around the lumina of the vessels, and elsewhere the clots were simply in contact with the endothelium. When the thrombi were forcibly torn from their attachments, a rough, ragged surface was left, leading to the opinion that the arterial walls had suffered actual change at these points. This opinion was subsequently confirmed by microscopic examination. From the sections presented it was evident that the thrombi were at first parietal and partial, and that the vessels were subsequently occluded by further coagulation within their lumina. The arterial wall and clot merged into each other at the point of adherence, so that it was difficult to determine their respective limits. From the presence of cell elements, some of them fusiform, in the outer margin of the clot, it was believed that organization of this first-formed portion of the thrombus had begun. Evidences of infarctions were carefully sought for in both lungs, but without success. The pulmonary arteries beyond the thrombi were dissected as far as could be done with small scissors, without finding an embolus. The uterus was subinvoluted. The walls were thickened and the cavity was enlarged. The length of the uterus was sixteen centimetres; the breadth at the fundus was ten centimetres; the depth of the cavity from the internal os to the fundus was eight centimetres. The cavity of the uterus contained a small amount of dark brownish material, which did not appear or smell septic. The spleen was enlarged and dark. The kidneys were swollen, pale, and moderately congested. Sections showed moderate acute parenchymatous changes. Smear preparations of the clot contained numerous large bacilli, a few small bacilli, and a very few organisms apparently encapsulated and resembling the diplococcus lanceolatus. Cultures from the clot (unavoidably delayed for twenty-four hours) gave nothing but a large, rapidly spreading, foul-smelling, putrefactive bacillus. The incompleteness of the bacteriological examination was, of course, to be regretted.

Dr. Coleman said that the chief interest in this case centred around the etiology of the thrombosis. The occurrence of pulmonary thrombosis had been explained, he said, upon two theories—primary coagulation through changes in the constituents of the blood (Barker and Playfair), or as the result of embolism from the heart or a peripheral thrombus. There was no thrombosis of the iliac, femoral, or ovarian veins from which an embolus might have been dislodged, and the right heart contained only imperfectly coagulated blood, so that the dislodgement of an embolus large enough to have been arrested at the site of the thrombosis might be excluded. The theory of primary coagulation from changes in the constituents of the blood was scarcely tenable in the light of existing knowledge as to the causes of thrombosis. The changes which had been noted as present in the wall of the pulmonary artery rendered it probable that some injury was inflicted to the endothelial lining and that upon this site coagulation began. How this injury was inflicted would be merely a matter of speculation; he would suggest, however, that it was in some manner connected with a septic condition of the woman. In phlegmasia alba dolens coagulation sometimes takes place from causes within the vessel without a pre-existing phlebitis, and the inflammation afterward extends to the vessel wall and perivascular structures. From the researches of Prudden upon the localization of inflammatory processes after the intravenous inoculation of pyogenic organisms, it was known that such localization was determined by a lowering of local resistance, as by traumatism. That the traumatism might at times be slight, was shown by the occurrence of endocarditis during a septic puerperium, in which the only cause of injury which could be assumed was the normal closing of the valves or the impact of an embolus against them. In the present case, though no thrombus was found in the larger peripheral veins, it seemed not unlikely that an embolus was detached from a thrombus in a smaller vessel, which was not discovered, and, striking the wall of the pulmonary artery, determined the occurrence and location of the thrombosis. The shortness of breath which preceded death for several days might be explained by the gradual formation of the thrombus.

Dr. Larkin said that the shortness of breath for several days before death was an unusual symptom in these cases of pulmonary thrombosis, and would appear to indicate that the obstruction had formed slowly.

Dr. Coleman said that he believed the coagulation had first occurred at the side of the vessel, and that the lumen had been gradually encroached upon and finally completely occluded. In another case, in which death had occurred in five minutes, a large embolus had been dislodged from a thrombus in the right ventricle and had immediately closed one of the large branches of the pulmonary artery, causing almost instant death.

Dr. Larkin said that some months ago he had presented a specimen of thrombosis of the pulmonary artery. In this case a woman had done well for eight or ten days after confinement, and had then suddenly dropped dead. Here he had been unable to find any change in the endothelial lining which would account for the thrombosis. Unquestionably the specimen just exhibited under the microscope showed that the primary changes in this instance had occurred in the endothelium.

The society then adjourned.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE HOSPITAL FUNDS: THE AMERICAN, THE PRINCE'S, THE SUNDAY—THE SPECIAL HOSPITAL GRIEVANCE AS TO THE SUNDAY FUND—INCREASE OF DIPHTHERIA; HOSPITALS CROWDED—EXPERT ASSESSORS—A MUNIFICENT POOR-LAW SALARY.

London, August 13, 1897.

The American jubilee fund for endowing beds in our hospitals amounts to above £4,300. The surplus will be given to the Prince of Wales' fund. This latter it was yesterday announced amounts to over £180,000.

The Sunday fund this year reached £40,000, being less than last year by £2,124, but this deficiency is less than might have been expected considering the large amounts which have been collected for analogous purposes in celebration of the Queen's reign of sixty years. The distribution committee's report has passed the council and above £39,700 is in course of being distributed to one hundred and thirty-two hospitals and fifty-six dispensaries. Some £2,000 of this goes toward the purchase of surgical appliances in monthly proportions. Any further sums that may come in will be credited to next year's account.

The committee plumes itself on having received thirty deputations for conference or explanations, but this work is not so important as it seems to imagine; for nothing could surpass the partiality displayed at these conferences and the absurd adherence to certain fixed rules. As to the latter it is remarkable that St. Thomas' Hospital gets nothing because its accounts are not in the stereotyped form adopted by the committee. As to the former the chairman and others have always been hostile to special hospitals and sometimes discourteous to their representatives. Taking his cue from this, the secretary has "gone one better" and, as some one said, "made a hole in his manners." He told one person that his hospital had no right to exist—although it was older than the fund and had given up its separate collections for the general one, and therefore in common honesty was entitled to some share. He returned the accounts of a hospital duly audited by a chartered accountant on the system of the fund because the secretary had not added up for him the pages of contributions by subscribers. Many declare that there are only two courses for the special institutions to adopt. They must either unite and appeal to the public on the unfairness and prejudice, or else resume separate collections in the churches of their localities. Either course might do more harm to the general fund than good to the specialists—and it is to be hoped the managers of the fund will reform their proceedings and the secretary be told that his office does not give him liberty to pronounce in the name of the distribution committee his private and ill-informed opinions. *The Lancet* has done such splendid work for the fund and is so interested in it that little help can be expected from your contemporary in case of an appeal to the public against the committee; apart from that I should deprecate such an appeal even from the united special institutions, which, in spite of opposition, are still flourishing.

Although the general health of London has been very good of late, diphtheria has continued to spread and there is some difficulty in accounting for this disquieting fact. As I have reported, there will shortly be five hundred and forty-eight additional beds at the new Park Hospital, but in the mean time the pressure on the hospitals of the asylums board is so great that more beds have been crowded into the wards than were intended. This reduction of the air space calculated for the patients is recognized as an evil and to be tolerated only during a temporary emergency. Nor is overcrowding confined to the board's hospitals. The outbreak of beriberi in the Richmond Asylum, Dublin, has brought to the public's knowledge a condition of overcrowding there which has again and again been impressed on the authorities. A similar state has just been reported at Brookwood Asylum, where 1,085 to 1,190 patients occupy the accommodation provided for 1,050. The Surrey County Council seems to receive patients from the London Council, which is said to be in a still worse condition.

Mr. Justice Williams at a recent trial advocated the employment of medical experts as assessors, to be selected for their acquirements and not to be advocates for either plaintiffs or defendants. The plan has often been recommended by medical and scientific authorities, but hitherto our legal luminaries have been opposed to it. Now that a judge has spoken in its favor there is more hope of a reform.

The Hampstead board of guardians proposed to appoint a medical officer to the workhouse and infirmary at the princely salary of £40 per annum with rooms and rations. He was to have the double qualification, and in addition to his medical work was to do all the dispensing. The local government board has pronounced the salary inadequate and yesterday informed the local gentlemen that it must be at least £60, or if dispensing be included £80.

OUR BERLIN LETTER.

(From our Special Correspondent.)

MIDSUMMER DULNESS—THE TWELFTH INTERNATIONAL MEDICAL CONGRESS—ABSENCE OF UTERUS AND OVARIES—COITUS PER URETHRAM—CEREBRAL DISEASE IN THE NEW-BORN—LEUKÆMIC APOPLEXY—A TOOTH IN THE NASAL FOSSA—THE GONOCOCCUS TOXIN.

Berlin, August 15, 1897.

When at the end of July the university closes its doors and the professors with their families go off to the various resorts, then the medical societies also lapse into quiet, and their members have time to gain from their rest renewed strength for their labors in the autumn.

The coming events of the medical congress are casting their shadows before, even as far as Berlin. There will be a very large representation from this city, and as nearly all will start at the same time it is easy to

see that the railways, especially those in Russia, will be taxed to their utmost to provide transportation. It will evidently be impossible to provide for all without the putting on of extra trains, for, in addition to our own contingent, almost all the congress members from northern Europe and America will pass through Berlin *en route*. All the available sleeping-car accommodations have already been engaged, and the prospect for the majority is that they will be shipped to Moscow like a ton of herring, and arrive there half suffocated after a thirty-hour car ride. The Russian express trains creep along at a delightfully easy jog at just about half the speed of an ordinary accommodation train in America. We, of course, have reason to be grateful to the Russian government for the gift of free railway tickets; but the Russian is not so stupid or so generous as he might seem to be. In the first place the price of railroad transportation in Russia is very low, and in the next place the offer of anything free will attract a very much greater concourse and all of these "guests" will leave a goodly amount of gold in holy Russia. The Prussian railway officials are also wise in their own way. While almost all the other European railways and steamship companies have made very substantial reductions in the price of tickets to members of the congress, the Prussian minister of railways says simply: "*Non possumus;* the great congress is our sponge, let us squeeze it." In this action he is in direct opposition to his colleague, the minister of instruction, for in few countries is so much done for science as in Prussia with her numerous universities.

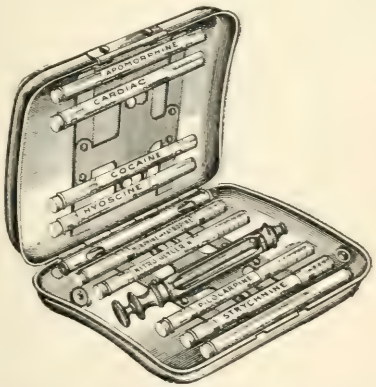
At the session of the Gesellschaft für Psychiatrie und Nervenkrankheiten held just before the vacation season, Dr. Grauck presented a patient in whom the vagina consisted of nothing but a shallow cul-de-sac, and no trace of uterus or ovaries could be discovered. The appearance of the patient was thoroughly feminine, but she had never menstruated. She suffered much from hysterical attacks, the first of which appeared soon after her marriage, and were perhaps excited by the attempts at coitus, which were always painful and the occasion of great excitement. The urethra was widely dilated and it was doubtless in this direction that penetration took place during the sexual act. At the same meeting Dr. Köppen read a paper on diseases of the brain in very young children. These affections have been hitherto but little studied; the brain has been examined macroscopically only, and in consequence of some superficial resemblances to that of an animal the various departures from the normal in conformation have been ascribed to atavism. In two cases examined carefully by the author, he was able to demonstrate that the changes were not at all due to an arrest of development, but rather to a true pathological process. Dr. Benda reported the case of a patient suffering from leukæmia who died with the symptoms of apoplexy. A careful examination of many sections of the central nervous system showed no lymphomatous disease anywhere except in the region where the apoplexy had taken place. One ought always to bear the possibility of such a complication in mind when in the presence of a sufferer from leukæmia.

At the last meeting of the Berlin Medical Society, Dr. Fränkel showed a patient having an inverted tooth in the left nasal fossa. The patient, a child, suffered from hereditary syphilis with resulting caries and necrosis of various portions of the nasal bones. During the attempt to extract the sequestra the operator came across a bony projection which it was impossible to remove, even with the saw. Closer examination showed that it was a tooth which apparently had been reversed, its crown projecting from the floor of the left nasal fossa. Dr. Wassermann then read a paper on the gonococcus toxin. He had made many experiments to discover a culture medium for gonococci which could be made use of in general practice. Up to the present time it had been possible to conduct culture experiments, which called for the use of sterile human serum-albumin, only in institutions where such a fluid could be readily obtained. The speaker had found that hog's serum was an efficient substitute for that of man, and he had succeeded in cultivating the gonococcus in a medium composed of hog's serum, casein-sodium phosphate, and peptone-bouillon. From such cultures he had been able to obtain a very potent toxin which caused fever and swelling of the glands, joints, and muscles. He had been unable to produce any immunity against the action of this toxin. These experiments offered a ready explanation of the occurrence of rheumatism after gonorrhœal infection. The gonococci die speedily indeed, in the inflammatory exudate, when deprived of oxygen, but this only the more readily sets free the inflammation-exciting poison, so that the destruction of the gonococci leads to no improvement in the disease, since there is no free discharge of the toxins. Dr. Wassermann advised, therefore, that all foci of inflammation due to the presence of the gonococcus-toxin should be opened up widely in order to give exit to it, for he maintained that there is no remedy which can oppose the action of this poison, and the only hope of relief is in getting rid of it.

New Instruments.

AN IMPROVED HYPODERMIC SYRINGE.

THE accompanying illustration shows the newest improvements in hypodermic syringes. This instrument is unique from the fact that it embodies very desirable features in both syringe and case. It is the outcome of many years of experience in this line of work. The case is made of aluminium and is curved to fit the body when carried in the vest pocket. It permits of



sterilization by boiling. The piston packing is made of improved vulcanized rubber. This is so disposed that by simply turning the piston head to the right the packing is adjusted at any point in the barrel. No lubricant is needed, the fluid to be injected furnishing all that is necessary. The packing does not shred, as is the case with asbestos, nor become hard and unyielding, as does leather. On the other hand, when it is found necessary to renew the packing it is not necessary to send the syringe to the manufacturer, since the physician can insert a new washer by following the written directions. The syringe was designed by the H. K. Mulford Company, of Philadelphia.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 21, 1897:

	Cases.	Deaths.
Tuberculosis	153	98
Typhoid fever	20	1
Scarlet fever	80	2
Cerebro-spinal meningitis	0	3
Measles	78	5
Diphtheria	138	10
Laryngeal diphtheria (croup)	4	0
Chicken-pox	2	0

Long Survival with Incised Wound of the Heart.—It is reported that a Hungarian, stabbed during a quarrel at Easton, Pa., on August 3d, survived for twenty-six hours an incised wound of the heart, found upon post-mortem examination to be three-eighths of an inch long.

A Novel Method of Arresting Hemorrhage in a Case of Hæmophilia.—Dr. Bienwald describes, in the *Semaine Médicale*, an ingenious method employed by him to control the bleeding from a small wound of the face in a case of hæmophilia in a child two years old. Having failed to arrest the hemorrhage by the application of ferric chloride, some blood was obtained by aspiration from a healthy subject and deposited upon the wound. In a few minutes coagulation took place and the hemorrhage at once ceased.

Becquerel Rays.—The rays of Becquerel, observed also independently by Prof. Silvanus Thompson, have been further experimented with, and the observations carried forward by Dr. Russell. It is found that not only uranium but many ordinary substances emit radiations, which although invisible to the human eye can penetrate opaque bodies. Such various substances as, *e.g.*, the section of a young larch tree, printers' ink, cardboard, lead, and tin, when placed for a certain length of time near a sensitive plate in a dark room, leave a distinct impression on the plate. It is stated, however, that while the radiations from the uranium compounds pass readily through glass, the latter completely stops the radiations from the substances in question. Whatever be the "mysterious force" emanating from such bodies, it is certain that increased temperature of the body which emits it greatly increases its activity, and also that aqueous vapor does not assist its action. According to Mr. Lewis Wright, Becquerel rays are "invisible light rays of an extremely ultraviolet character, *i.e.*, transverse vibrations in the ether, of extremely short period and wave length." And he continues: "It is now generally held that the Roentgen rays are ether waves of the same character, but still higher frequency; certainly not less and possibly much more than a hundred times that of green light. The absence of sensible refraction, polarization, and regular reflection is exactly what would then occur. The waves are probably simply too small to be reflected from any polish at present attainable, or polarized by any ordinary structure in a sensible degree.—*Treatment.*

A Moving Tale.—The Chicago mind is as fertile of imagination as Chicago water of typhoid bacilli. The *Inter Ocean* of that city recently described a wonderful invention, which it justly remarks cannot fail to be of great value in the study of diseases. "A micromotoscope has been invented which is a kinetoscope for photographing cell life in motion as seen in the microscopic field. The pictures are taken by the gelatin film at from five thousand to fifteen thousand magnifications, and at the rate of sixteen hundred to twenty-five hundred per minute. The images being magnified thousands of times when projected upon a screen, the views of some of the families of microbes are very realistic. It has been learned that some of them possess great intelligence. The photographs of blood in circulation in the thinnest part of the ears and webs of the fingers, showing its capillary or arterial motion and the changes going on in the white cells, are of great interest. They indicate something of the nature of life and disease. The stream of circulating human blood is so swift that the eye cannot keep pace with it, and the changes in the white blood cells are correspondingly rapid. Some of the pictures show a white cell on the fast-moving stream, like a white cap on the sea, constantly changing its shape. It throws out or takes in its arms like an octopus, seizing the microbes in its path. In disease this movement of the arms takes place with much less energy than in health." We have long believed in the superior intelligence of many of the schizomycetes, and we are glad to find our suspicions confirmed by the revelations of the micromotoscope.

A Quarantine against Consumption.—Californians are rebelling against the use of their State as a sanatorium for consumptives. There was a time when the salubrity of the climate and the consequent advantages to people of weak lungs were held out as an inducement to immigration. But too many have accepted the invitation, and there is a feeling now among the unafflicted that the incursion is dangerous to them. Just what they can do about the matter, however, is a puzzling question. Directors of the State board of trade have decided that some measures should be taken, and they have in mind a quarantine against the health seekers. Lawyers tell them that this may not be feasible, although no great difference would seem to exist between the right to isolate people ill with a contagious disease and the right to prevent the entrance of such people into the State.

Health Reports.—The following statistics concerning yellow fever, cholera, small-pox, and plague have been received in the office of the United States Marine Hospital service during the week ended August 21, 1897:

		Cases.	Deaths.
Small-Pox—United States.			
Birmingham, Ala.	May 16th to Aug. 14th	76	1
Montgomery, Ala.	August 7th to 14th	28	
Small-Pox—Foreign.			
Nagasaki, Japan	July 13th to 19th	10	2
Cardenas, Cuba	July 31st to August 7th	2	2
Singapore, India	June 1st to 30th	7	7
London, England	July 24th to August 7th	2	2
Glasgow, Scotland	July 24th to 31st	1	
Sagua la Grande, Cuba	July 24th to August 5th	5	10
Montreal, Canada	July 2d to 24th	14	5
Rotterdam, Holland	August 1st to 7th	1	
St. Petersburg, Russia	July 24th to July 31st	6	
Cholera.			
Bombay, India	July 13th to 20th	2	2
Singapore, India	June 1st to 30th	1	1
Kioto Fu, Japan	July 11th to 24th	1	1
Osaka Fu, Japan	July 11th to 24th	2	2
Tokio Fu, Japan	July 11th to 24th	5	5
Fukuioka Ken, Japan	July 11th to 24th	2	2
Kanagawa Ken, Japan	July 16th to 25th	4	2
Saitam Ken, Japan	July 11th to 24th	1	1
Calcutta, India	July 2d to 14th	3	3
Colombo, Ceylon	July 2d to 24th	5	5
Yellow Fever.			
Cienfuegas, Cuba	August 1st to 5th	1	1
Cardenas, Cuba	July 31st to 7th	2	2
Matanzas, Cuba	July 26th to August 4th	4	4
Sagua la Grande, Cuba	August 1st to 7th	5	5
Manzanillo, Cuba	June 27th to 31st	2	2
Kingston, Jamaica	July 17th to 31st	1	
Plague.			
Kanagawa Ken, Japan	July 11th to 24th	1	1
Formosa, Japan	June 11th to 24th	4	
Bombay, India	July 13th to 20th	2	

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Original Articles.

BRITISH MEDICAL ASSOCIATION—ADDRESS OF THE PRESIDENT.[1]

BY T. G. RODDICK, M.D., M.P.,

MONTREAL, CANADA.

You have been welcomed to the Dominion of Canada by the noble earl who is the worthy representative of our beloved Queen; you have been welcomed to the Province of Quebec, to which this city belongs, by our eloquent and justly esteemed lieutenant governor; the chief magistrate of our city has given you "*Cead mille failthe*" in a manner in which only an Irishman with such a great sympathetic heart as he possesses can give; and now I rise to welcome you on behalf of the medical profession in Canada, and to thank you for the honor conferred on this city and country by your presence here to-day. Would that I could find suitable language in which to thank you also for the high honor you have done me in electing me to preside at this great meeting of the British Medical Association, an honor which is appreciated none the less by the consciousness that it is not a personal matter but a compliment to Canadian medicine.

This meeting of the British Medical Association in Canada is an event which will serve still more to impress upon the memory of our people the year 1897, the year of the diamond jubilee of our beloved sovereign, Queen Victoria. In no part of her vast empire did her subjects celebrate the great event with more enthusiastic loyalty and devotion than in Canada, especially in this province, the home of the French-Canadians. We Canadians of both tongues love and honor our Queen. Long may she live! Deeply, too, have we appreciated here the splendid reception accorded in the old home to our premier, the Right Hon. Sir Wilfred Laurier, whose distinguished bearing and grace of manner eminently fitted him for the important part it was his peculiar privilege to play in the magnificent ceremonies of the jubilee. A French-Canadian, Sir Wilfred's presence in England as the chosen representative of the dominion was an object lesson to the empire and to the world in the harmony existing between the two nationalities which comprise the Canadian people.

And here let me express on behalf of every representative from the British Isles, and on behalf of every Canadian present, the genuine pleasure we feel in having among us on this memorable occasion so many of our brethren from the United States. This only proves the cosmopolitan character of our profession; this is only another recognition of the unity of medicine. Legislators may squabble, the air may be filled with wild alarms, and war may appear imminent day by day, but our relations are not disturbed in the slightest degree; our interests are common—we are kinsmen in science; we go forward hand-in-hand, irrespective of race or creed or color, having one intent only: the advancement of our noble profession, and through that the amelioration of the ills of mankind.

It is my privilege also to welcome the representative of another republic, La Belle France, to whose gifted men of science our profession is so greatly indebted. This gentleman, who bears the credentials of his government and officially represents the great nation of which he is so bright an ornament, is known far and wide as the professor of physiology in the University of France. Dr. Charles Richet. In coming to Canada it cannot be said, nor will he feel, that he comes to a foreign country, for in the Province of Quebec he will find another France, with a delightful mingling of the old and the new: his own beautiful language spoken with all the grace and purity of the old *régime*.

But we are further honored by the presence among us to-day of the most illustrious surgeon of our generation, Lord Lister, who stands for the rise and zenith of modern surgery. It has been well and truly said that as long as surgery is scientifically discussed Lord Lister's name cannot fail to be mentioned. We have only to compare the surgery of the time before 1873 with the surgery as practised to-day to appreciate all that he has done for the science. Can it be for a moment questioned that Lord Lister has made operative proceedings possible which only twenty-five years ago would have been considered criminal? Undoubtedly the most powerful agency in the development of surgery in this century has been the introduction of the antiseptic and aseptic methods of wound treatment which he initiated. It is due to his efforts that surgical wards have been freed from pyæmia, and the mortality of lying-in hospitals reduced to the limits of normal parturition. For the past twenty years honors many and great have been showered upon him. Oxford, Cambridge, Edinburgh, Glasgow, Dublin, Toronto, and now McGill, have vied with one another in hastening to do him homage. Our sovereign in conferring upon him the richly deserved distinctions which he bears with such gracious dignity only gives expression to the general feeling of his countrymen throughout the empire and his admirers the world over. We are glad, I say, to have him with us to-day: his presence is an intellectual stimulus and an energizing force in our deliberations.

It is, I understand, an unwritten law of the association that the president shall not in his address encroach upon the topics which belong by right and usage to the readers of the main addresses and to the presidents of the various sections. I have observed that the majority of my predecessors have contented themselves with discoursing on objects and circumstances of local interest: they describe the town or city in which the meeting is held, or perhaps they discuss questions of a public character. In the absence of an address on public medicine, others have taken that for their theme. It has been my unhappy lot to select and consider subjects only to find in quick succession that they had already been appropriated, either by the association *Journal*, in describing so fully Montreal and its surroundings, or by the editors of the official guide or souvenir, who have given a very

[1] Delivered at Montreal, August 31, 1897.

comprehensive description of Canada, or by some of the gentlemen who preside over the sections, who, I have been led to understand, purpose discussing questions of medical education. I fear therefore that what I have to say this afternoon will fall far short of the brilliant presidential addresses which members of this association have been accustomed to in other years. Indeed when I look at the long roll of eminent men who have been my predecessors in this high office—men oftentimes distinguished for their literary gifts as well as for their exalted position in the medical world—I confess that I marvel at my temerity in accepting so great a responsibility. In speaking of my predecessors allow me specially to refer to the retiring president, Dr. Henry Barnes, whose courteous and kindly manners, together with his sterling ability, makes us all glad to know that his election as a vice-president for life insures his continued official and active connection with the association. Here might I also be permitted to say how greatly I appreciated the many kindnesses and courtesies extended to me by the president (Dr. Saundby) and members of the council when in London last winter, making the initial arrangements for this meeting.

With respect to the other addresses which it is customary to deliver on these occasions, medicine will be dealt with by one whose reputation is now world-wide—by our Osler—whose professional education was in great part received in this city, and who, I am happy to say, is still a Canadian. How he has been able to escape the alien law is a puzzle to many; but he has really only been borrowed for a time; he is merely passing through the United States in bond. We are only waiting until we can find a place large enough to hold him, when we shall coax him back. Sorry am I that his old colleagues in his own department of medicine, Howard and Ross and Macdonnell, are not here to share with us the genuine pleasure we experience in finding him in the position which he occupies to-day. One of these, the late lamented Howard, had much to do with moulding his career and setting him to the task which he has so ably accomplished.

You will hear addresses in surgery and public medicine, delivered by gentlemen who have devoted their lives to their special subjects.

Before proceeding farther, however, allow me, for the benefit of those who may not be acquainted with the work of the British Medical Association, to give in as few words as possible a general idea of its organization.

The British Medical Association.—When, in 1832, Sir Charles Hastings, of Worcester, communicated to a few of his personal friends the idea he had conceived of a medical association which should bring the whole provincial profession of England into a common brotherhood, it may be safely affirmed that he did not dream that he was laying the foundation of an association which would ultimately not only embrace the whole of the British Isles, but extend to that Greater Britain beyond the seas, and become an association of imperial magnitude and of imperial importance and significance. I have no hesitation in expressing my belief that the British Medical Association will be an important factor in bringing to a successful issue that great scheme of imperial federation which now exercises the minds, and, let me add, the hearts, of the leading statesmen of the empire. Sir Charles Hastings' aim was to bring town into professional union with town, county with county; now it has become the aim of the society he called into being to add State to State and may I not say continent to continent?—until all the nations and peoples who live under the British flag are brought within the beneficent influence of the Association.

With respect to the objects of the association, as set forth on its foundation, they may briefly be stated to be:

1st. The collection of speculative and practical information through essays, hospital reports, infirmaries, dispensaries, or private practice.

2d. Increase of knowledge of the medical topography of England through statistical, meteorological, geological, and botanical inquiries; the investigation of the modification of endemic and epidemic diseases in different situations and at various periods, so as to trace, as far as the recent state of the art would permit, their connection with peculiarities of soil and climate or with the localities, habits, and occupations of the people.

4th. The advancement of medico-legal science through succinct reports of cases occurring in courts of judicature.

5th. The maintenance of the honor and respectability of the profession generally in the provinces by promoting friendly intercourse and free communication of its members, and by establishing among them the harmony and good feeling which ought ever to characterize a liberal profession.

During its earliest years the movements and proceedings of the association were quiet and unostentatious, the meetings simple in their arrangements; but it was not long before medical societies began to join the newer body, and towns in all parts of the kingdom soon came to regard it as an honor to entertain the association. Gradually the best men of each district enrolled their names, and the membership increased so greatly that subdivisions into branches became a necessity. Each branch, with its own ordinary and annual meetings, was practically a replica of the parent society, possessing its own president, vice-president, secretary, treasurer, council, and by-laws, subject to the approval of the council of the association, to which, besides, each branch sent representatives according to its numerical strength. In 1837, five years after the foundation of the association, there were three of these branches formed, namely, the East Anglian, the Bath and Bristol, and the Lancashire and Cheshire. By the end of 1878 the association had spread over the whole United Kingdom, the total number of branches at that date being thirty—one of the thirty, it is interesting to note, being Jamaica, the first colonial branch to be formed. It was organized in 1878. Two years later we find that Australia appears for the first time, contributing three branches to the association. Since then thirty-six more branches have been added, making a grand total of sixty-five, with a collective membership of nearly seventeen thousand. Of the branches twenty-seven are Indian and colonial. Doubtless before long those portions of Africa which are now becoming rapidly civilized will also add their quota, so that it is possible that within the lifetime of all present the British Medical Association will be represented wherever the British flag flies. As Nova Scotia is always to the fore in matters intellectual, it is not surprising that the first Canadian branch of the association should have been formed in Halifax. It was started in 1887, four years ahead of Montreal, Toronto, Manitoba, and British Columbia. Canada has now seven branches, the Ottawa and Quebec branches having been formed within the last year. The formation of the Manitoba, Toronto, and Montreal branches was the immediate result of the visit to this country of Mr. Ernest Hart. In 1891, Mr. Hart, who has been editor of the *British Medical Journal* since 1867, and who has been well and truly described as the pivot on which the machinery of the whole association revolves, passed through Canada in that year and addressed *en route* the members of the profession in

Winnipeg, Toronto, and Montreal. Of the Manitoba branch, which began with twenty-five members, Dr. Ferguson was nominated as president and Drs. Thornton and Lamont as vice-presidents. In Toronto the branch also began with twenty-five members, Dr. Macallum being nominated president and Dr. Thistle honorary secretary. In Montreal the meeting was largely representative in spite of the short notice given, and twenty-six members of the profession at once signed applications for membership. The officers nominated were: President, Dr. (now Sir William) Hingston; first vice-president, the late Dr. George Ross; second vice-president, Dr. James Perrigo. The members of the council were: Drs. Roddick, F. W. Campbell, and George Wilkins. In the course of a very happy speech made on this occasion by Mr. Hart he remarked that he looked forward to the time when the Canadian membership would be large enough to invite the association to hold a meeting in Canada; and he hoped that the first meeting held outside the limits of the British Isles might be held in this country. Little did we think at the time that Mr. Hart's hopes would be so quickly realized. But the idea has ever been present with us, and those who subsequently attended meetings of the British Medical Association in England have lost no opportunity of advocating the claims of Canada, and especially of this the metropolitan city of Canada, as a place of meeting for the association.

One of the secrets of success of the British Medical Association is that it makes no distinction in the treatment of its members. Colonial members have all the privileges of the British members, and are always warmly welcomed at the headquarters in the Strand and at the annual meetings. The association has a large reserve fund of £40,000 sterling, which is the joint property of the members, to be used for public and professional purposes, and any suitable applications for grants for medical research, whether from British or colonial members, always receive attention.

A gentleman to whom the association is greatly indebted is Mr. Francis Fowke, who was appointed secretary and general manager in 1872. At that time the association was in rather a precarious condition financially, owing to its deficient organization; but shortly after Mr. Fowke took up the reins of office matters were found steadily to improve. About the time he was appointed the subscriptions amounted to £4,677. Ten years later they had nearly doubled, the amount being £9,147; and in 1891 they had reached the very respectable sum of £14,759. It is interesting to note how closely the advertisements in the *Journal* kept pace with the increase in membership. In 1876 the amount received for advertisements was £1,992; in 1881, £6,089; and in 1891, £14,568. The head office, which had been in Birmingham, was moved to London in 1872, where, after two removals, the present commodious premises in the Strand were taken. In 1879 the association began the printing as well as the publishing of its *Journal*. The library, which now contains ten thousand volumes, and which includes nearly every modern medical work of note, and many valuable books of reference, has developed in that time. That the British Medical Association is the largest and most influential guild in the world cannot be questioned. Moreover, the good it accomplishes increases from year to year, and more than keeps pace with the expansion of the association. Imagine the mighty power of the collective action of seventeen thousand earnest men pitted against false dogmas and ever battling for the truth! It is not, however, by the greatness of numbers that the association will be judged—it is by the diversity and quality of results. It is impossible to imagine any combination of circumstances which would render this great association any less necessary or useful than it is to-day. It will undoubtedly continue to grow in numbers, to increase in importance, and to be ever more and more an influence making for the amelioration and elevation of mankind.

The Canadian people, and especially the citizens of Montreal, are highly flattered and gratified that Canada should be the first country without the United Kingdom to be honored by a meeting of the British Medical Association; and, while they hope that it will not be long before the honor is repeated, our people are not insensible to the claims of other portions of the empire, more especially the great island continent of the antipodes, Australia. Either Sydney or Melbourne would be a fit meeting-place for such an imperial organization as this, and should the next meeting which is held outside the British Isles be held under the Southern Cross our hospitable Australian kinsmen may count on a large contingent from the Dominion of Canada.

Climatic Conditions.—As it may be presumed that to the majority of those present here to-day Canada is almost an unknown country, I have thought that among one or two other subjects a few remarks on the atmospheric conditions and health resorts of the Dominion would not be without interest.

The best way to understand the atmospheric conditions of a country is first to understand its physical features. The physical features of Canada are very remarkable. Broadly speaking, the country is separable by climatic and physical conditions into three great regions, the eastern, central, and western regions, which approximately run north and south in the general trend of the continent. The eastern region, which includes the older provinces of the dominion—Ontario, Quebec, Nova Scotia, New Brunswick, and Prince Edward Island—besides the great fur territory stretching far to the east and northeast of James Bay, extends from the Atlantic to Lake Superior and the chain of great lakes running in a northerly direction from Lake Superior to the Arctic Ocean. Between this great chain of lakes and the eastern base of the Rocky Mountains is the immense interior continental plain which constitutes the central region of Canada, its southern part consisting of open prairie, its northern part of forest lands. The third part of the division, the western region, is naturally very well defined, consisting of the wide and wild mountainous border of the continent on the Pacific side—the Rocky, Selkirk, and Gold ranges, which form the great Cordilleran belt, whose average width in Canada is four hundred miles.

Eastern Canada, our first and largest region, is geologically of very ancient origin. Here geologists have placed the nucleus of the continent—the broad belt of crystalline rock of great antiquity called the Laurentian plateau. This region is remarkable for its immense number of lakes large and small, and for its irregular and winding rivers with numerous rapids and falls. Between the Laurentian plateau on the north and the Appalachian mountain system on the south, lies the great Valley of the River St. Lawrence. The basin of this majestic river covers 530,000 square miles, of which 460,000 are in Canada. Above the city of Quebec, the base of the Laurentian highlands and the ridges of the Appalachian system diverge, and the mighty river flows through an extensive low country of notable fertility, in earlier days the great granary of Canada.

It may be added, *en passant*, that Mount Royal, which gives such distinction and character to our city, represents the basal remnants of a volcanic vent of great antiquity. From its picturesque summit may be seen similar abrupt elevations far off toward the east and

south—Montarville, Belœil or St. Hilaire, Mt. Rougemont, with Mt. Yamaska behind it, Mt. Shefford, and the conical Mt. Johnson or Monnoir. The Adirondacks are visible in the distance to the southwest, and the Green Mountains to the southeast.

Included in the eastern region is one of the most remarkable geographical features of Canada—the great fresh-water lakes or inland seas, Superior, Huron, Erie, and Ontario, which form the perennial reservoirs of the St. Lawrence. Together with Lake Michigan, which is wholly in the United States, they have an aggregate area of 94,750 square miles, an area larger than that of Great Britain. They stand at four distinct levels above the sea—Ontario, 247 feet; Erie, 573; Huron, 581; and Superior, 602. The Niagara Falls, the greatest and most impressive of the natural wonders of our continent, are the direct result of the great height of Lake Erie above Lake Ontario, the river connecting the lakes being only a few miles long. Besides the St. Lawrence, eastern Canada has several other great rivers, notably the Ottawa, which has a course of 1,800 miles and a basin of nearly 1,000,000 square miles; the St. Maurice, the Saguenay, and the St. John, the glory of New Brunswick, which, together with the Atlantic slope, has a basin of 50,214 square miles. The central and western regions also have their abundant share of large and small lakes and great rivers, an account of which would fill reams of paper. It should be noted that the Canadian rivers and lakes collectively cover an area of 130,000 square miles, and contain one-half the fresh water on the globe.

I draw special attention to this series of vast lakes and rivers because it exerts an immense and beneficent influence on the climate of Canada. It preserves the mean temperature while the land experiences the extremes. In summer the water is cooler and in winter warmer than the land conditions, which tends to modify the differences and to favor uniformity of climate. Without these waters, too, we should have vast regions of comparatively little value, as in Africa, Asia, and in the United States west of the Mississippi River, where large tracts of land far from water are nothing more than arid wastes. Our climate is more uniform than that of Europe; the meterorological differences are produced by position alone, but Europe has a higher mean temperature, and the extremes there are not so marked or so wide apart as in Canada. Owing to the great area of Canada, extending over twenty degrees latitude, or from the latitude of Constantinople to that of North Cape in Norway, the range of temperature is naturally very wide. The southern boundary stretches over fully four thousand miles, along which line we find that southern Ontario has the latitude of Central Italy, Nova Scotia that of Northern Italy, Manitoba and Vancouver that of central Germany. Speaking generally, the Canadian summer may be stated at 60° F. to 70° F.

From its vast and varied extent, Canada may be said to be the possessor of several climates. Taking Solly's classification as to position, we have in Canada all the three land climates, the low, the medium, and the high. The first has an elevation up to 2,500 feet, the second up to 4,500, and the third from 4,500 upward. As to temperature and humidity, Canada comes under the category of "cold, moderate, and dry."

Health Resorts.—In the eastern region of the dominion there are at least two localities which have been proved to possess many of the qualities which constitute a climate for convalescents from fevers and other depressing diseases, and also for consumption in the incipient stage. I refer to the region in the Province of Quebec among the Laurentians north of this city, of which the village of Ste. Agathe is the centre, the other being the Muskoka district in Ontario.

The first has been called the Adirondacks of Canada, having many of the features, physical and climatic, of that now celebrated plateau situated in the northeastern part of New York State, and stretching from the Mohawk Valley in the south one hundred and fifty miles north, almost to the frontier line. The average elevation of the two regions is about the same, being from sixteen hundred to eighteen hundred feet. The immense pine forests, together with the moderate temperature, constitute the chief characteristics of the Canadian district, from the medical point of view. No very systematic meteorological observations have yet been taken of the Ste. Agathe region, but the indications will probably prove to be very similar to those of the American resort. It is in contemplation to erect a sanatorium on Trembling Mountain, overlooking the village of Ste. Agathe, which will doubtless in time rival the Adirondack Cottage Sanatorium near Saranac Lake Village, which has proved such a marked success under the able management of Dr. E. L. Trudeau. The elevation of the sanatorium will be twenty-five hundred feet, thus having an altitude of nearly seven hundred feet greater than the establishment at Saranac. It is the intention of the Quebec government to set apart a sufficient portion of the crown lands to form a natural park in that part of the province. It will be called the Trembling Mountain Park, and will cover an area of one hundred thousand acres of land, in which are several beautiful lakes. Within the boundaries of this park the sanatorium will be constructed. There is therefore no reason to doubt that we will shortly have within our own lines a health resort possessing all the advantages of the Adirondacks region, and capable of affecting for good the same class of patients now so decidedly benefited by a residence in those mountains.

One hundred miles north of Toronto, in the highlands of Ontario, is the Muskoka Lake region, an area of about ten thousand square miles, perhaps the most picturesque portion of the whole province. Within this district, which has a mean altitude above the sea of about eight hundred feet (two hundred feet above Lake Huron), there are nearly a thousand lakes and ponds, connected by innumerable streams. The chief lakes are Muskoka, Rosseau, and Joseph. These contain about four hundred islands. It is a region abounding in pine forests; the climate is dry, and the air pure and invigorating. The Muskoka region has been found undoubtedly to possess remarkable climatic advantages for those with phthisical tendencies. The death rate from phthisis in this section of Ontario is proved to be less than one-tenth the rate which obtains in other parts of the province. At Gravenhurst the Muskoka Cottage Sanatorium for the cure of incipient phthisis has recently been founded, under the best auspices, with accommodation for forty patients. The present sanatorium consists of a large and well-planned main building, surrounded within easy distance by a number of small cottages. The grounds, which embrace seventy-five acres, are situated on Lake Muskoka. Pine forests and rocky ridges protect the buildings on the north and west sides, whence come the colder winds in winter. Like the Adirondacks sanatorium, the intention is to occupy it all the year round. The progress of this institution, at present in the experimental stage, will be watched with much interest.

In the central region of Canada, that section of the Northwest Territories known as southern Alberta—the home of the cowboy—has much to recommend it as a health resort. This strip of prairie and hill

country is bounded on the north by the Canadian Pacific Railway, and on the south by the international boundary line; its eastern boundary extends as far as Medicine Hat; its western boundary to the summit line of the Rockies and British Columbia, comprising in all an area of about twenty thousand square miles. The plain here has an elevation above sea level of twenty-seven hundred feet, which gradually increases up to the entrance of the Crow's Nest Pass, where the elevation is forty-five hundred feet. Calgary, the capital of Alberta, is itself thirty-five hundred feet above sea level. With this gradual incline from a low to a high level altitude the patient can choose the locality which suits his particular case. In a long experience Kennedy knew of only two cases of phthisis originating in that country—one of acute tuberculosis with a strong hereditary taint, which proved fatal; the other, of the ordinary type, recovered without leaving the place. He claims for the climate of southern Alberta a dry aseptic atmosphere and a dry soil, the greatest possible number of sunshiny days (ninety per cent.), with cool nights. Patients can live there all the year round, and with the exception of an occasional snowstorm, which may cover the prairie to a varying depth, nothing need interfere with their practically living in the saddle. The so-called chinook wind has a remarkable influence over all this western section of Canada. It is a warm wind which blows with varying intensity from west to southwest. McCaul, who describes it very graphically, speaks of its approach being heralded by the massing of dark clouds above the mountain tops, and a distinct wailing and rumbling from the passes and gorges. Its effect in winter is little short of miraculous. When the real chinook blows the temperature often rises in a few hours from 20° below to 40° above zero. The snow, which in the morning may have been a foot deep, disappears, and before night everything is dripping. But in the space of a single day all the water is lapped up by the thirsty wind, and the prairie is so dry that a horse's hoof hardly makes an impression.

The cases which have been most especially benefited by Alberta's climate are pulmonary tuberculosis in the earliest stage, although neurasthenics and anæmic women are likewise favorably affected to a marked degree. It is well known that delicate lads sent from the British Isles to this section of the Northwest to work on the cattle ranches become in a year or two healthy and vigorous men, and are scarcely recognized on their return.

Still farther west, and nearly midway between Calgary and the Pacific coast, is the beautiful Valley of Kamloops, another all-the-year-round resort which has much to commend it to those suffering from many forms of tuberculous disease. This picturesque valley, which lies between the Rocky Mountains and the Cascade Range, has a low altitude climate of eleven hundred feet, but is exceedingly dry, showing an annual rainfall of only 11.05 inches, with an average of about seventy-five rainy days in the year. The rain soon disappears, the soil being light and gravelly. In this region we have an illustration of the local variability of climate recently pointed out by Bryce, who, in referring to the two not very distant localities of Vancouver and Kamloops, showed that, whereas the former has an annual rainfall of thirty-five inches, the latter records but eleven inches and a decimal. The mean annual temperature of the Valley of Kamloops is 46.03 F., the annual range being only 22.8°. The tuberculous patients who appear to be most benefited by a residence in Kamloops are those in whom there is a tendency to chronic congestion. Cases of bronchitis are likewise said to do well there. The climate can also be recommended for consumptives in whom cardiac disease exists as a complication. That Canada is an exceptionally healthful country is the general testimony of the army and navy surgeons who have been stationed in Canada with the different regiments from the time of the conquest to the present day. Crawford, who was attached to one of the regiments stationed in Montreal many years ago, and who subsequently left the army and practised in this city, published elaborate and carefully collected statistics to prove that few portions of the British Empire have a climate equal to that of Canada. In fact his statistics prove conclusively that, out of every one thousand of the troops stationed at the various garrisons throughout the empire, the percentage constantly ineffective from sickness was smaller in this country by seven per cent. than at Gibraltar, which was then taken as the type. I think it can be satisfactorily proved that Canada is expressly fitted to develop a hardy race capable of great endurance. The races of the British Isles and the French race have certainly not degenerated here. Hingston proved this very conclusively some years ago by observations made upon the medical students attending the various schools in this city. He found that the lumbar strength of the British Canadian of the third generation exceeded by twenty pounds that of the recently arrived English and Scotch students. But the French Canadian of the tenth generation did better than all by nearly thirty pounds. Not only has the French Canadian increased in strength but also in height and weight over the original Normandy stock.

Has the intellectual improvement in our people kept pace with the physical? We are a modest people, but I think we can say with truth it has. We have a very respectable literature of our own, but the best intellect of the country is as yet absorbed in the practical affairs of life, and has too seldom found expression in art and literature. It is not very long since a distinguished American litterateur, Charles Dudley Warner, gravely attributed what he called the literary inactivity of Canada to the coldness of the climate. He said, in short, that the cold benumbed our intellectual faculties, and we had to spend so much of our energy in trying to keep warm that none was left for any other purpose. It must be admitted that if we measure the intellectual capacity of our people by the number of books produced in Canada the result is not all we might desire; but the climate is not to blame. Especially is it not the cold, for the winter is the season devoted pre-eminently to intellectual effort and intellectual amusements. If Mr. Warner had said that the heat of our summer was an unfavorable factor in our intellectual life he would not have shot quite so wide of the mark; he would not have been right, but he would not have been quite so wrong. The very vicissitudes of our climate, by training the system to endure severe physical conditions, must react favorably upon the mental attitude.

Canadian Spas.—We have in Canada several mineral springs of undoubted therapeutic value, and they are pretty generally distributed all over the dominion, although differing materially in temperature and composition. The best known Canadian spas are the Caledonia, the St. Leon, and the Plantagenet Springs, in the Province of Quebec, and the Banff Springs in Alberta. Other springs in the Province of Quebec are the Abenakis and the Caxton. Besides these there are at least three or four artesian wells or springs. Of these the chief are the Laurentian Spring, in the east end of this city (a mild alkaline water with sodium bicarbonate as its predominating ingredient), and the Radnor, a well of some considerable repute situated in the county of Champlain. This was discovered a very few years ago when boring for water to supply the workpeople engaged at the well-known Radnor Forges. The well is over four hundred feet in depth. In the Prov-

ince of Ontario the chief springs are the Winchester and the Preston, and those in the town of St. Catharines, near Niagara Falls. The best known and the most popular are the Caledonia Springs, situated on the line of the Canadian Pacific Railway about midway between Montreal and Ottawa, and about nine miles from the Ottawa River. They consist of four springs—the gas, the saline, the white sulphur, and the intermitting or Duncan spring. The first three are situated within a distance of three or four rods of each other, and the mouths of the latter two are not more than four feet apart. The intermitting spring is situated about two miles from the others. This is so named because the discharge of gas is not regular, some minutes elapsing between the periods of quiescence and disturbance. The average temperature of these springs is about 46° F. The intermitting spring has the largest percentage of chloride of sodium, and differs from all the others in possessing a greater portion of chlorides of calcium and magnesium. It has also nearly twice the proportion of carbonate of magnesium that the others contain. It has been found that taken judiciously and under advice these waters have a remarkable effect in subacute and chronic rheumatic conditions. People suffering thus are found flocking to Caledonia from all parts of this continent and even South America, especially during the months of July and August. Gouty conditions depending upon liver disturbances also yield very readily to these waters. The waters of St. Leon and Plantagenet are similar in many respects to those just described, and as a rule suit the same class of patients.

All the springs so far mentioned yield cold waters, but Canada also possesses the most famous thermal springs on this continent.

Banff, now a picturesque town magnificently situated in the heart of the Rocky Mountains, yet within the limits of that division of the Northwest Territories known as Alberta, has become one of our noted health resorts, although frequented more on account of its remarkable thermal springs than for its climatic advantages. The town is built on the banks of the Bow and Spray rivers, two large glacier streams, and is surrounded by mountains towering many thousands of feet above the level of the sea. The winter is short, beginning in December and ending in February, and is much milder than in Ontario. Very little rain falls, and the days as a rule are bright and cloudless. Prolonged periods of warm weather are experienced during winter. March and April are variable: May is warm and bright; June is the month in which the greatest rainfall occurs; July, August, September, and October are very warm and very dry, with cold nights. At all seasons with the exceptions perhaps of June the air is dry and notably aseptic. It is positively stated that no case of malaria or tuberculosis has ever been known to originate at Banff. Independently of the springs, then, Banff has much to recommend it from a climatological standpoint.

The far-famed Thermal Springs of Banff were discovered some fifteen years ago during the construction of the Canadian Pacific Railway. At its source in the mountain side it has a temperature of 127° F. and the air is charged for some distance around with the steam emitted from the pool to which the water flows. The most recent analysis shows it to contain the following ingredients:

Calcium sulphate	[illegible]
Magnesium sulphate	[illegible]
Calcium carbonate	3.29
Sodium sulphate	[illegible]
Sodium carbonate	[illegible]
Silica	traces.
Organic matter	traces.

The waters of Banff have been used with great benefit in rheumatism, gout, sciatica, and glandular affections, in certain forms of skin disease, and especially, it is thought, in tuberculous affections of the skin and mucous membrane. Aided by the admirable climatic conditions the waters have also been found to benefit in a marked manner functional diseases of the liver, stomach, and kidneys, and tuberculous joint affections. In debilitated constitutions from any cause the activity of the skin is noticed to be increased, the heart and vascular system are strengthened, and the muscular and nervous systems much improved in tone. Rachitic and delicate children are much benefited by the Thermal Springs. This seems a larger order; but the therapeutic effects of these springs have been carefully studied by competent medical men who have been stationed there for some years. The climate doubtless assists materially the action of the waters in very many cases.

I doubt if the Canadian profession sets a sufficiently high value on the therapeutic properties of our own mineral springs. When visiting the Spas of Great Britain and Europe, one is impressed by the caution exercised by patients in the method of using the waters which have been prescribed. There, competent local medical men are always to be found who can give the proper advice regarding the water to be taken for the ailment from which the patient suffers and the judicious use of baths. Here, unfortunately, in many places no professional advice is available, and the patient consequently does very much as he pleases, or as the hotel proprietor may advise, and in consequence more harm than good constantly follows the use of the waters.

Medical Education in Canada.—The general question of medical education is one of great importance and of unceasing interest, nor is this interest confined to the profession: it is becoming universal. The needs of medical education are fortunately being more fully realized by those who on accouunt of their wealth and influence are in a position to render that substantial assistance which is so requisite. The time was when every medical school was a purely proprietary concern "run" for the money that was in it. We feel in Canada, and I think I can speak for the profession in the neighboring republic, that this day is passed, that high-minded philanthropists like the Right Hon. Lord Strathcona and Mount Royal, the late John Henry Molson, the McDonalds, the Drakes, and others with us, and the Johns Hopkins, the Stanfords, the Vanderbilts, the Rockefellers, the Miss Garretts, and others with them are beginning to realize that unendowed instruction in medicine must lead to imperfect results, and that private endowment, in the absence of State aid, has become an absolute necessity to a proper medical training. I am not an advocate for State aid to universities, and I rejoice that the university to which I have the honor to belong is not so dependent, as it might thus be deprived of those gifts of private munificence to which I have just referred. All honor to those far-seeing, open-handed men and women who are giving of their abundance in order to elevate the standard of medical education and by so doing benefit their kind. As Gould very tersely puts it in one of his clever articles: "I think our reliance must be upon private bequests, and these can be secured only as we interest the rich. We must never weary in showing the neglect of the greatest, most palpable, most certain means of doing good. There is a strange fatality in men, an unaccountable inability of seeing the need that lies nearest the good that is dearest. There is more money to-day devoted to astronomy than to the prevention of disease. It is positively wonderful to think that men should be more interested in stars and constellations than in their bodies and their physiological life."

A question which is nowadays agitating the minds of those especially interested in medical education is the kind of groundwork which is likely to bear the most direct relation to the future studies of the medical student. I think it is now conceded by all that he is placed at a greater advantage who first passes through an arts or a science course. I am happy to be able to report that from fifteen to twenty per cent. of those who are studying medicine in this country today have had a collegiate training in either arts or science. Which of the two should the parent or guardian choose? Had I a son whose instincts were in the direction of medicine I think I should choose for him the science course. The late Professor Huxley thought it was a most self-evident proposition that the educational training for persons who proposed to enter the medical profession should be largely scientific; not merely or even principally because an acquaintance with the elements of physical and biological science is absolutely essential to the comprehension of human physiology and pathology; but still more because of the value of the discipline afforded by practical work in these departments in the process of observation and experiment, in inductive reasoning and in manipulation.

The subjects in the science curriculum might be specially selected for the future medical student. Of course it may be said in favor of the arts course that many of the subjects, such as physics and chemistry, constitute part of the curriculum; but then calculate the loss to the future surgeon of that training of the hand and eye which would lead him up to be a skilled operator; or to the scientific physician whose complicated instruments of precision employed in the diagnosis of disease need some mechanical knowledge for both their use and repair—besides the number of those has been increasing in number and complexity with the increase of scientific knowledge.

But can we not make a new departure, can we not urge that a special scientific education be arranged by the universities for those who desire to enter the medical profession? Such a course would embrace elementary Latin and Greek, French and German, physics, chemistry, biology, psychology, elementary mechanics, a practical laboratory course on electricity and drawing. After two years' study this might entitle the successful candidate to the degree of licentiate in science.

Something of this kind has been recently attempted in the University of McGill. By a special arrangement with the faculty of arts it is now possible for students to obtain the degree of B.A. along with M.D., C.M., after only six years of study. It has been decided to allow the primary subjects (anatomy, physiology, and chemistry) in medicine to count as subjects of the third and fourth years in arts. It follows, then, that at the end of four years' study a student may obtain his B.A. degree and have two years of his medical course completed. The last two years of study are of course devoted to the third and fourth year subjects in medicine. A certificate of licentiate in arts will be given along with the professional degree in medicine to those who previous to entrance upon their professional studies proper have completed two years in the faculty of arts, and have fully passed the prescribed examinations therein. By this plan also during the first two years of the arts course the medical student practically completes his studies in physics, chemistry, botany, and elementary psychology. This scheme is still in the experimental stage, but there is every reason to believe that it will result satisfactorily. What deters so many from taking a full course in arts or science before entering medicine is the length of time consumed before the doctorate degree is reached, although I hope the time is not far distant when every graduate in medicine in Canada shall of necessity be also a graduate in arts or science. I might state that the standard for the ordinary matriculation examination for entrance to medicine exacted by all universities and licensing boards in this country is, with one or two exceptions, very high. I doubt if the requirements in this way of the Medical Council of Great Britain are any higher.

Now as to the purely professional portion of medicine, I might state that we have in the Dominion of Canada no fewer than eleven medical schools, including one for women only, all having the power of granting degrees and all connected directly or by affiliation with university bodies. To enumerate them: Beginning with the Atlantic provinces, we have in Halifax the medical school attached to Dalhousie University, the only medical school in the Maritime Provinces; in this province there are four schools, Laval in Quebec, Laval in Montreal, McGill and Bishop's in Montreal; in Ontario, four schools, namely, the Royal College of Physicians and Surgeons, Kingston; the University of Toronto Medical Faculty, Trinity Medical College, and the Ontario Women's Medical College, in Toronto; in London, Ontario, the Western University Medical Faculty; and lastly, in Winnipeg, the Manitoba University Faculty of Medicine. All told, we had in Canada, during the last winter session, two hundred and eighty-six teachers, including professors, lecturers, and demonstrators, and seventeen hundred and thirty-six students. The tendency for the past two years has been to increase the teaching staff quite out of proportion to the increased number of students. Taking McGill, we find that there are in the present year fifty-three teachers for three hundred and eighty-eight students, being a proportion of nearly one to eight. Laval, in Montreal, has thirty-six teachers and one hundred and ninety-seven students, a still greater proportion. The Toronto School of Medicine had during the past year forty-one teachers and two hundred and ninety-three students. We find that this proportion compares well with the larger schools in the United States; thus, in 1893, there were in Harvard Medical School seventy-one teachers to look after four hundred and seventy-one students; at the Columbia Medical College in New York with six hundred and sixty-one students there were one hundred and five teachers (one to six); in the University of Pennsylvania the teaching staff in the same year comprised only eighty-four members with eight hundred and twenty-five students, being a little over one to ten. What does this mean? Ten years ago, when McGill had two hundred and thirty-seven students, a staff of twenty-three professors and demonstrators was considered sufficient. Why are so many more thought necessary nowadays? The number of subjects taught has not increased very much. The answer is that the subjects are differently taught; the old-fashioned daily didactic lectures are now given two or three times a week only; although I should be sorry to see them further reduced in number, I believe that so many are absolutely necessary. It is in the dissecting-room, the chemical, physiological, therapeutical, and pathological laboratories, that we see the change. These which before were for the most part only "side shows" are now made to hum with the practical work which is done within them, while demonstrators are moving about busily engaged in examining and instructing.

In clinical teaching also we have made marked advances. A creation of the last few years is the clinical demonstrator, who takes small classes of students into the wards or the out-door departments of our hospitals and gives them that "bedside instruction" which is so essential, leaving the clinical professor to deal with the full classes in the lecture or operating

room. Thus each student is enabled personally to examine the case, to study the physiognomy of disease, and to make deliberate, thorough, and systematic examinations. He thus learns to use his special senses and gets into careful habits of observation, which, once thoroughly acquired, will be found to contribute largely to future success. With this in view we encourage students to attend the out-patient department of the hospitals as early as the second year.

In order to make the clinical instruction more complete and more thorough, chemical and bacteriological laboratories have been added to the pathological departments of our hospitals. Thus it will be seen that laboratory methods everywhere prevail, all with the idea of developing the scientific spirit in students and of cultivating methods of thought with observation.

The question sometimes arises, however: May the student not be getting too much of a good thing? Is it not possible that laboratory teaching may be overdone?—because, as Welsh very truly says: "The student whose knowledge of a subject is derived exclusively from laboratory courses is likely to lose his perspective in details, to acquire only a fragmentary knowledge of the subject, to fail to comprehend the general bearing of observed facts; and not to acquire the general principles and systematic conceptions which are essential. Laboratory work should be accompanied and supplemented by the reading of textbooks and by lectures." I am convinced that with us in Canada laboratory work is not overdone, but, on the contrary, in some departments needs and deserves further encouragement. I hope every laboratory teacher in the country realizes that the object of a college is to give a good general education, and not to make experts in various branches. I have long felt myself, however, that the didactic lectures were being unfairly dealt with. There is a feeling abroad that they should be practically elbowed out of sight. I think the didactic lecture has its place in the medical course; and while I quite feel that the old plan of compelling students to listen to five didactic lectures a week in all of the great subjects was a mistake, I still feel that a good lecturer can teach in this way a certain something which cannot be imparted by practical instruction or by recitations. The personal influence of a good lecturer very often makes an impression which nothing else can make; and if such lectures are made also demonstrative, as by the use of diagrams, the lantern, experiments, etc., they must of necessity fill a very important place in the medical course.

Hygiene is at last receiving in this country the attention which its importance demands: all medical schools in Canada have facilities for teaching it. In McGill University the scope of the teaching of hygiene has been vastly extended, thanks to the generous endowment of that department recently by the chancellor, the Right Hon. Lord Strathcona and Mount Royal. The subject can now be taught in a scientific and, at the same time, eminently practical manner. There will be three teachers associated with the professor himself, viz., the heads of the departments of practical chemistry, of pathology, and of bacteriology.

This is following very much the German system, also adopted by the University of Pennsylvania, the chemical and bacteriological aspects of the subject being regarded as really the most important. An extensive working museum, with sanitary apparatus of every kind, forms part of the scheme, and will doubtless add greatly to the efficiency of the course when it is completed. Should the experiment succeed you will be rejoiced to hear at no distant date that the other schools in Canada have followed the lead of their elder sister.

I fear I have given you a very imperfect idea of medical education in Canada; and it may be charged against me that I have been partial in my description to my own university; but I assure you that such was farthest from my thoughts. The medical faculty of McGill University has the right of seniority and might fairly, I think, be taken as a type of Canadian medical schools. Be assured there is no mean spirit of rivalry abroad. We are all working with one object only, the advancement of medicine in Canada. The teaching facilities of some medical schools in this country may be, and are actually greater than others, owing to the munificence of citizens, and the school attached to McGill is, I am happy to say, in that position; but, although assistance has been rendered in a general way, with two exceptions the chairs are still unendowed. Yet we have great expectations which we hope will be realized in the near future. Let us hope that our sister universities throughout Canada will be equally fortunate; so that before long we shall be able to report that we are all marching abreast equally equipped.

The facilities for clinical teaching in the larger cities of Canada are admirable. Speaking for the city of Montreal, we have in the five general hospitals, the Hôtel Dieu, Montreal General, Notre Dame, Royal Victoria, and Western Hospitals nearly eight hundred beds. The number of students attending the three medical schools was, last session, six hundred and forty-six; and considering that only about half—those of the third and fourth years—have access to the wards, there will be at least two beds for each student. The number of outdoor patients attending the five hospitals daily would aggregate at least three hundred, so that there could be no possible cause for complaint regarding both the quantity and quality of clinical material available in this city.

While on the subject of hospitals, I would take this opportunity of saying that the training-schools attached to the larger English hospitals are in a very flourishing condition and are found to contribute not a little toward the thoroughness of the practical teaching. It was my intention to have referred at some length to the whole question of nurses and nursing, but the limits of this address forbid. I might say, however, while as a profession we feel the absolute necessity for the training-school, and thoroughly appreciate the services of the well-trained nurse, both in hospital and in private practice, there is the fear that the supply may soon exceed the demand. A project is on foot now, however, which may delay, if not actually prevent, such a result. I refer to the recent establishment by that most estimable and charitable woman, the Countess of Aberdeen, of the Victorian Order of Nurses—another outcome of the jubilee of our beloved Queen. Her Excellency's idea in establishing this order is to supply the sparsely settled parts of our great Northwest, the outlying districts of Canada generally, and the poor in towns and cities with nursing aid. In this great work hundreds of nurses will in time be employed. The scheme, which is purely non-sectarian, and appeals to all, irrespective of nationality, when thoroughly worked out and more generally understood will become one of our national institutions. Let us wish it every success.

Medical Legislation in Canada.—Time will not permit of my discussing the subject of medical legislation in Canada at any length; and besides you will find it very fully treated in the excellent official guide or souvenir, prepared for you by the executive committee. In addition I might explain, however, that when the British American provinces became confederated in 1867, under the British North America act, the governance of educational matters was taken away from the federal authorities and handed over to the provinces, each to look after them in its own way. In con-

sequence we have since had a curious complexity of medical legislation, there being practically no uniformity among the provinces in regard to standard of study or qualification for practice. Each province has its own medical board or medical council, as the case may be, which has the power to grant license to practise either after examination or on simply presenting the diploma of certain recognized universities. In the provinces of Ontario and British Columbia an examination is exacted; in the others the license is given under certain restrictions on presentation of the degree, although in the Maritime Provinces an examining-board is now about to be established. In this way, as can readily be seen, a Chinese wall is built round each province, and the frontier is carefully guarded, so that it is unsafe for a medical man to pass from one to the other unarmed with a license, because of the risk of fine or even imprisonment. Such a condition of affairs is hardly credible and probably exists nowhere else to the same extent. What is the remedy? Two remedies have been suggested—either the establishment of a central examining-board in each province, with a uniform standard of matriculation and a uniformly high standard of curriculum, which shall in time lead up to a general scheme of reciprocity; or, secondly, a dominion examining-board. The first scheme is at present under serious consideration, although there are many difficulties in the way of its accomplishment, none of which is insuperable, however, providing a spirit of conciliation prevails. The second alternative (a dominion examining-board) would in many respects be more desirable, because not only could the licentiate practise in any part of the dominion, but he could register in Great Britain, and thus receive recognition all over the empire. As you are doubtless aware, we, as a profession, suffer in this country from being inhabitants of provinces which are confederated. In an enactment, now of some twelve years' standing, the British Medical Council decided, in effect, to recognize the degrees of universities situated in autonomous provinces only. As a consequence, Australians obtain privileges which are denied to us, they being permitted to register in Great Britain without examination. We are being punished for belonging to a colony whose form of government is recognized to be in advance of theirs and likely to be imitated by them. Let me give our Australian brethren a hint: if the confederation of your provinces be in contemplation, see to it that all matters of professional education are left in the hands of the central government, at least as far as qualification for registration is concerned. By so doing you will avoid the almost inextricable tangle in which we in Canada find ourselves. Let common-school education go to the various provinces if you will, but for the profession of medicine (and doubtless law also) there should be a uniform standard of matriculation, a uniform curriculum of medical studies, and one central examining and registering board, composed of the best men from all the universities. We hope in Canada to reach that ideal at no distant date; in fact I have the very best authority for stating that it is not impossible of accomplishment. Some scheme of reciprocity first arranged would doubtless make the task less difficult, but, failing that, our duty is to arrange for some legislation which shall give our better and more ambitious students an opportunity of passing a dominion licensing-board (or whatever it may be called) which shall give the privilege of practising their profession not only in any part of their native country, but in any part of the world over which the British flag flies. Such a scheme need not interfere in any way with the autonomy of the provinces. Each may still retain its provincial board for the purpose of examining and issuing licenses to those candidates who are satisfied to practise their profession in the limited sphere of their own provinces. I think the legislators of this country will some day (and not far distant either) be induced to see that the system which at present obtains is unworthy of a great and growing country.

In conclusion, allow me to express the hope that the arrangements made by the executive committee for the entertainment of our guests may meet with appreciation and approval, and that the memories of the brief sojourn here may be all that is bright and happy. The loyalty and unanimity with which the profession throughout the dominion has co-operated with us in Montreal to make this meeting of the British Medical Association a success from every point of view, deserve and receive our heartiest thanks. We are also greatly indebted for the kind and ready assistance of the dominion government, the Quebec government, and the civic government of Montreal. Our hands have been strengthened and the cause we have so much at heart has been furthered by the active good will of the country's official representatives.

One word more: It is a good thing to be here to-day, in the midst of this great gathering so full of power and vigor. The fruits of such a gathering should be tangible, enduring, not ephemeral, not for to-day, but for all time. To our kinsmen from beyond the great seas let me express the earnest hope that in the future our kinship will be a more real and living thing than in the past. We are members of one great family, members one of another, in a peculiar and very real sense. Let that once be recognized, and the statesman's task will be an easy one. In more than words has Canada shown herself worthy of her high heritage, worthy of a part in the empire, worthy to share in its trials and its triumphs. We, who know her history, can say with well-founded confidence:

"So in the long hereafter this Canada shall be
The worthy heir of British power and British liberty;
Spreading the blessings of her sway to her remotest bounds,
While with the fame of her fair name a continent resounds.
True to her high traditions, to Britain's ancient glory,
Of patient saint and martyr, alive in deathless story;
Strong in their liberty and truth to shed from shore to shore
A light among the nations till nations are no more."

BRITISH MEDICINE IN GREATER BRITAIN.[1]

By WILLIAM OSLER, M.D., F.R.C.P.
PROFESSOR OF MEDICINE, JOHNS HOPKINS UNIVERSITY.

The Making of Greater Britain.—To trace successfully the evolution of any one of the learned professions would require the hand of a master, of one who, like Darwin, could combine the capacity for patient observation with philosophic vision. In the case of medicine the difficulties are enormously increased by the extraordinary development which belongs to the history of the present century. The rate of progress has been too rapid for us to appreciate, and we stand bewildered, and, as it were, in a state of intellectual giddiness, when we attempt to obtain a broad, comprehensive view of the subject. In a safer "middle flight" it is my purpose to dwell on certain of the factors which have moulded the profession in English-speaking lands beyond the narrow seas—of British medicine in Greater Britain. Even for this lesser task (though my affiliations are wide and my sympathies deep) I recognize the limitations of my fitness, and am not unaware that in my ignorance I shall overlook much which might have rendered less sketchy a sketch necessarily imperfect.

[1] The address in medicine delivered at the annual meeting of the British Medical Association, Montreal, September 1, 1897.

Evolution advances by such slow and imperceptible degrees that to those who are part of it the finger of time scarcely seems to move. Even the great epochs are seldom apparent to the participators. During the last century neither the colonists nor the mother country appreciated the thrilling interest of the long-fought duel for the possession of this continent. The acts and scenes of the drama, to them detached, isolated, and independent, now glide like dissolving views into each other, and in the vitascope of history we can see the true sequence of events. That we can meet here to-day, Britons on British soil in a French province, is one of the far-off results of that struggle. This was but a prelude to the other great event of the eighteenth century, the revolt of the colonies and the founding of a second great English-speaking nation—in the words of Bishop Berkeley's prophecy, "Time's noblest offspring."

Surely a unique spectacle, that a century later descendants of the actors of these two great dramas should meet in an English city in New France. Here the American may forget Yorktown in Louisberg, the Englishman Bunker Hill in Quebec, and the Frenchman both Louisberg and Quebec in Chataquay; while we Canadians, English and French, in a forgiving spirit, overlooking your unseemly quarrels, are only too happy to welcome you to our country, this land on which, and for which, you have so often fought. Once and only once before in the history of the world could such a gathering as this have taken place. Divided though the Greeks were, a Hellenic sentiment of extraordinary strength united them in certain assemblies and festivals. No great flight of imagination is required to picture a notable representation of our profession in the fifth century B.C. meeting in such a colonial town as Agrigentum under the presidency of Empedocles. Delegates from the mother cities, brilliant predecessors of Hippocrates of the stamp of Damocedes and Herodicus, delegates from the sister colonies of Syracuse and other Sicilian towns, from neighboring Italy, from far distant Massilia, and from still more distant Pauticapæum and Istria. And in such an assemblage there would have been men capable of discussing problems of life and mind more brilliantly than in many subsequent periods, in proportion as the pre-Hippocratic philosophers in things medical had thought more deeply than many of those who came after them.

We English are the modern Greeks, and we alone have colonized as they did, as free people. There have been other great colonial empires, Phœnician, Roman, Spanish, Dutch, and French, but in civil liberty and in intellectual freedom Magna Græcia and Greater Britain stand alone. The parallel so often drawn between them is of particular interest with reference to the similarity between the Greek settlements in Sicily and the English plantations on the Atlantic coast. Indeed, Freeman says, "I can never think of America without something suggesting Sicily, or of Sicily without something suggesting America." I wish to use the parallel only to emphasize two points, one of difference and one of resemblance. The Greek colonist took Greece with him. Hellas had no geographical bounds. "Massilia and Obia were cities of Hellas in as full a sense as Athens or Sparta." While the emigrant Britons changed their sky, not their character, in crossing the great sea, yet the home stayers had never the same feelings toward the plantations as the Greeks had toward the colonial cities of Magna Græcia. If, as has been shrewdly surmised, Professor Seely was Herodotus reincarnate, how grieved the spirit of the "Father of History" must have been to say of Englishmen, "Nor have we even now ceased to think of ourselves as simply a race inhabiting an island off the northern coast of the continent of Europe." The assumption of gracious superiority which, unless carefully cloaked, smacks just a little of our national arrogance, is apt to jar on sensitive colonial nerves. With the expansion of the empire, and the supplanting of a national by an imperial spirit, this will become impossible. That this sentiment never prevailed in Hellas, as it did later in the Roman empire, was due largely to the fact that in literature, in science, and in art the colonial cities of Greece early overshadowed the mother cities. It may be because the settlements of Greater Britain were things of slower growth that it took several generations and several bitter trials to teach a lesson the Greeks never had to learn.

The Greek spirit was the leaven of the old world, the workings of which no nationality could resist. Thrice it saved Western civilization, for it had the magic power of leading captivity captive, and making even captive conquerors the missionaries of culture. What modern medicine owes to it will appear later. "The love of science, the love of art, the love of freedom, vitally correlated to each other and brought into organic union," were the essential attributes of the Greek genius (Butcher). While we cannot claim for the Anglo-Saxon race all of these distinctions, it has in a high degree that one which in practical life is the most valuable, and which has been the most precious gift of the race to the world—the love of freedom—

> "Of freedom in her regal seat
> Of England."

It would carry one too far afield to discuss the difference between the native Briton and his children scattered so widely up and down the earth. In Canada, South Africa, Australia, and New Zealand types of the Anglo-Saxon race are developing which will differ as much from each other and from the English as the American does to-day from the original stock; but amid these differences can everywhere be seen those race qualities which have made us what we are—"courage, national integrity, steady good sense, and energy in work." At a future meeting of the association, perhaps in Australia, a professional Sir Charles Dilke, with a firm grasp on the subject, may deal with the medical problems of Greater Britain in a manner worthy of the address in medicine. My task, as I mentioned at the outset, is much less ambitious.

The Influence of Greece on Britain.—Could some one with full knowledge patiently analyze the characteristics of British medicine he would find certain national traits, sufficiently distinct for recognition. Three centuries cannot do very much—and that period has only just passed since the revival of medicine in England—but the local conditions of isolation, which have been singularly favorable to the development of special peculiarities in the national character, have not been without effect on the medical profession. I cannot do more than touch upon a few features, not distinctive but illustrative—features which will be useful as indicating the sources of influence upon Greater Britain in the past, and which may, perhaps, be suggestive as to lines of progress in the future.

Above the fireplace in Sir Henry Acland's study are three panelled portraits of Linacre, Sydenham, and Harvey; the scroll upon them reads: "*Literæ, Praxis, Scientia.*" To this great triumvirate, as to the fountainheads, we may trace the streams of inspiration which have made British medicine what it is to-day.

Linacre, the type of the literary physician, must ever hold a unique place in the annals of our profession. To him was due in great measure the revival of Greek thought in the sixteenth century in England, and in the last Harveian oration Dr. Payne has pointed out his importance as a forerunner of Harvey. He made Greek methods available; through him the art

of Hippocrates and the science of Galen became once more the subject of careful, first-hand study. Linacre, as Dr. Payne remarks, "was possessed from his youth till his death by the enthusiasm of learning. He was an idealist, devoted to objects which the world thought of little use." Painstaking, accurate, critical, hypercritical, perhaps, he remains to-day the chief literary representative of British medicine. Neither in Britain nor in Greater Britain have we maintained the place in the world of letters created for us by Linacre's noble start. It is true that in no generation since has the profession lacked a man who might stand unabashed in the temple at Delos; but, judged by the fruits of learning, scholars of his type have been more common in France and Germany. Nor is it to our credit that so little provision is made for the encouragement of these studies. For years the reputation of Great Britain in this matter was sustained almost alone by the great Deeside scholar, the surgeon of Banchory, Francis Adams, the interpreter of Hippocrates to English students. In this century he and Greenhill have well maintained the traditions of Linacre. Their work, and that of a few of our contemporaries, among whom Ogle must be specially mentioned, has kept us in touch with the ancients. But by the neglect of the study of the humanities, which has been far too general, the profession loses a very precious quality.

While in critical scholarship and in accurate historical studies British medicine must take a second place, the influence of Linacre, exerted through the Royal College of Physicians and the old universities, has given to the humanities an important part in education, so that they have moulded a larger section of the profession than in any other country. A physician may possess the science of Harvey and the art of Sydenham, and yet there may be lacking in him those finer qualities of heart and head which count for so much in life. Pasture is not everything, and that indefinable, though well understood, something which we know as breeding is not always an accompaniment of great professional skill. Medicine is seen at its best in men whose faculties have had the highest and most harmonious culture. The Lathams, the Watsons, the Pagets, the Jenners, and the Gairdners have influenced the profession less by their special work than by exemplifying those graces of life and refinements of heart which make up character. And the men of this stamp in Greater Britain have left the most enduring mark: Beaumont, Bovell, and Hodder in Toronto; Holmes, Campbell, and Howard in this city; the Warrens, the Jacksons, the Bigelows, the Bowditches, and the Shattucks in Boston; Bard, Hossack, Francis, Clark, and Flint in New York; Morgan, Shippen, Redman, Rush, Coxe, the elder Wood, the elder Pepper, and the elder Mitchell in Philadelphia —Brahmins all, in the language of the greatest Brahmin among them—Oliver Wendell Holmes—these, and men like unto them, have been the leaven which has raised our profession above the dead level of a business. The *literæ humaniores*, represented by Linacre, revived Greek methods, but the faculty at the end of the sixteenth and the beginning of the seventeenth centuries was in a slough of ignorance and self-conceit, and not to be aroused even by Moses and the prophets in the form of Hippocrates and the fathers of medicine.

In the pictures referred to Sydenham is placed between Linacre and Harvey, but science preceded practice, and Harvey's great Lumleian lectures were delivered before Sydenham was born. Linacre has been well called by Payne Harvey's intellectual grandfather. "The discovery of the circulation of the blood was the climax of that movement which began a century and a half before with the revival of Greek medical classics and especially of Galen" (Payne). Harvey returned to Greek methods and became the founder of modern experimental physiology and the great glory of British scientific medicine. The demonstration of the circulation of the blood remains in every detail a model research. I shall not repeat the ofttold tale of Harvey's great and enduring influence, but I must refer to one feature which, until lately, has been also a special characteristic of his direct successors in Great Britain. Harvey was a practitioner and a hospital physician. There are gossiping statements by Aubrey to the effect that "he fell mightily in his practice" after the publication of the "De Motu Cordis," and that his "therapeutic way" was not admired; but to these his practical success is the best answer. It is remarkable that a large proportion of all the physiological work of Great Britain has been done by men who have become successful hospital physicians and surgeons. I was much impressed by a conversation with Professor Ludwig in 1884. Speaking of the state of English physiology, he lamented the lapse of a favorite English pupil from science to practice; but he added, "while sorry for him, I am glad for the profession in England." He held that the clinical physicians of that country had received a very positive impress from the work of their early years in physiology and the natural sciences. I was surprised at the list of names which he cited—among them I remember Bowman, Paget, Savory, and Lister. Ludwig attributed this feature in part to the independent character of the schools in England, to the absence of the university element, so important in medical life in Germany, but, above all, to the practical character of the English mind, the better men preferring an active life in practice to a secluded laboratory career.

Thucydides it was who said of the Greeks that they possessed "the power of thinking before they acted and of acting too." The same is true in a high degree of the English race. To know first what has to be done, then to do it, comprises the whole philosophy of practical life. Sydenham (*Angliæ lumen*, as he has been well called) is the model practical physician of modern times. Linacre led Harvey back to Galen, Sydenham to Hippocrates. The one took Greek science, the other not so much Greek medicine as Greek methods, particularly intellectual fearlessness, and a certain knack of looking at things. Sydenham broke with authority and went to nature. It is an extraordinary fact that he could have been so emancipated from dogmas and theories of all sorts. He laid down the fundamental proposition, and acted upon it, that "all diseases should be described as objects of natural history." To do him justice we must remember, as Dr. John Brown says, "in the midst of what a mass of errors and prejudices, of theories actively mischievous, he was placed, at a time when the mania of hypothesis was at its height, and when the practical part of his art was overrun and stultified by vile and silly nostrums."

Sydenham led us back to Hippocrates; I would that we could be led oftener to Sydenham. How necessary to bear in mind what he says about the method of the study of medicine. "In writing, therefore, such a natural history of diseases, every merely philosophical hypothesis should be set aside, and the manifest and natural phenomena, however minute, should be noted with the utmost exactness. The usefulenss of this procedure cannot be easily overrated as compared with the subtle inquiries and trifling notions of modern writers, nor can there be a shorter, or, indeed, any other way of coming at the morbific causes, or of discovering the curative indications, than by a certain perception of the peculiar symptoms? By these steps and helps it was that the father of physic, the great Hippocrates, came to excel, his theory being no more than an exact description or view of nature. He found

that nature alone terminates diseases, and works a cure with a few simple medicines, and often enough with no medicine at all." Well, indeed, has a recent writer remarked: "Sydenham is unlike every previous teacher of the principles and practice of medicine in the modern world."

Sydenham—not Linacre or Harvey—is the model British physician, in whom were concentrated all these practical instincts upon which we lay such stress in the Anglo-Saxon character. The Greek faculty which we possess of thinking and acting has enabled us, in spite of many disadvantages, to take the lion's share in the great practical advances in medicine. The three greatest scientific movements of the century have come from Germany and France. Bichát, Laennec, and Louis laid the foundation of modern clinical medicine; Virchow and his pupils of scientific pathology; while Pasteur and Koch have revolutionized the study of the causes of disease; and yet the modern history of the art of medicine could almost be written in its fulness from the records of the Anglo-Saxon race. We can claim almost every practical advance of the very first rank—vaccination, anæsthesia, preventive medicine, and antiseptic surgery—the "captain jewels in the carcanet" of the profession, beside which can be placed no others of equal lustre.

The Influence of Authority in Medicine.—One other lesson of Sydenham's life needs careful conning. The English Hippocrates, as I said, broke with authority. His motto was:

> "Thou, Nature, art my goddess, to thy law
> My services are bound."

Undue reverence for authority as such, a serene satisfaction with the *status quo*, and a fatuous objection to change, have often retarded the progress of medicine. In every generation, in every country, there had been, and ever will be, *laudatores temporis acti*, in the bad sense of that phrase, not a few of them men in high places, who have lent the weight of a complacent conservatism to bolster up an ineffectual attempt to stay the progress of new ideas. Every innovator from Harvey to Lister has been made to feel its force. The recently issued life of Thomas Wakley is a running commentary on this spirit, against the pricks of which he kicked so hard and so effectually. But there are signs of a great change. The old universities and the colleges, once the chief offenders, have been emancipated, and remain no longer, as Gibbon found them, steeped in port and prejudice. The value of authority *per se* has lessened enormously, and we of Greater Britain have perhaps suffered as the pendulum has swung to the other extreme. Practice loves authority, as announced in "the general and perpetual voice of men" (Hooker). Science must ever hold with Epicharmus that a judicious distrust and a wise scepticism are the sinews of the understanding. And yet the very foundations of belief in almost everything relating to our art rest upon authority. The practitioner cannot always be the judge, the responsibility must often rest with the teachers and investigators, who can learn only in the lessons of history the terrible significance of the word.

In the treatment of fever the fetters of a thousand years were shattered by Sydenham—shattered only to be riveted anew. How hard was the battle in this century against the entrenched and stubborn foe! Listen to the eloquent pleadings of Stokes, pleading, as did Sydenham, against authority, and against the bleedings, the purgings, and sweatings of fifty years ago. "Though his hair be gray, and his authority high, he is but a child in knowledge and his reputation an error. On a level with a child, so far as correct appreciation of the great truths of medicine is concerned, he is very different in other respects, his powers of doing mischief are greater; he is far more dangerous. Oh! that men would stoop to learn, or at least cease to destroy." The potency of human authority among "the powers that be" was never better drawn than by the judicious Hooker in his section on this subject: "And this not only with the 'simpler sort,' but the learneder and wiser we are, the more such arguments in some cases prevail with us. The reason why the simpler sort are moved with authority is the conscience of their own ignorance; whereby it cometh to pass that, having learned men in admiration, they rather fear to dislike them than know wherefore they should allow and follow their judgments. Contrariwise with them that are skilful, authority is much more strong and forcible; because they only are able to discern how just cause there is why to some men's authority so much should be attributed. For which cause the name of Hippocrates (no doubt) were more effectual to persuade even such men as Galen himself than to move a silly empiric."[1]

Sydenham was called "a man of many doubts," and therein lay the secret of his great strength.

Medicine in America to 1820.—Turning now to the main question of the development of this British medicine in Greater Britain, I must at once acknowledge the impossibility of doing justice to it. I can indicate only a few points of importance, and I must confine my remarks chiefly to the American part of Greater Britain.

We may recognize three periods, corresponding to three distinct waves of influence: the first from the early migrations to about 1820; the second from about 1820 to 1860; and the third from about 1860 to the present time.

The colonial settlements were contemporaneous with the revival of medicine in England. Fellow-students of Harvey at Cambridge might have sailed in the *Mayflower* and the *Arbella*. The more carefully planned expeditions usually enlisted the services of a well-trained physician, and the early records, particularly of the New England colonies, contain many interesting references to these college-bred men. Giles Firman, who settled in Boston in 1632, a Cambridge man, seems to have been the first to give instruction in medicine in the new world. The parsons of that day had often a smattering of physic, and illustrated what Cotton Mather called an "angelical conjunction." He says: "Ever since the days of Luke, the Evangelist, skill in physic has been frequently professed and practised by persons whose more declared business was the study of divinity." Firman himself finding physic "but a meane helpe," took orders. These English physicians in the New England colonies were scholarly, able men. Roger Chillingworth, in Hawthorne's "Scarlet Letter," has depicted them in a sketch of his own life: "Made up of earnest, studious, thoughtful, quiet years, bestowed faithfully for the increase of knowledge; faithfully, too, for the advancement of human welfare; men thoughtful for others, caring little for themselves, kind, just, true, and of constant if not warm affections"—a singularly truthful picture of the old colonial physician.

Until the establishment of medical schools—University of Pennsylvania, 1763; King's College (afterwards Columbia), 1767; and Harvard, 1782—the supply of physicians for the colonies came from Great Britain, supplemented by men trained under the old apprentice system, and of colonists who went to Edinburgh, Leyden, and London for their medical education. This latter group had a most powerful effect in moulding professional life in the prerevolutionary period. They were men who had enjoyed not alone the instruction, but often the intimate friendship of the great English and European physicians. Morgan,

[1] "Ecclesiastical Polity," Bk. ii. vii. 2.

Rush, Shippen, Bard, Wistar, Hossack, and others had received an education comprising all that was best in the period, and had acquired the added culture which can come only from travel and wide acquaintance with the world. Morgan, the founder of the medical school of the University of Pennsylvania, was away seven years, and before returning had taken his seat as a corresponding member of the French Academy of Surgery, besides having been elected a fellow of the Royal Society. The war of independence interrupted temporarily the stream of students, but not the friendship which existed between Cullen and Fothergill and their old pupils in America. The correspondence of these two warm friends of the colonies testifies to the strong professional intimacy which existed at the time between the leaders of the profession in the old and new worlds. But neither Boerhaave, Cullen, nor Fothergill stamped colonial medicine as did the great Scotchman, John Hunter. Long weary centuries separated Harvey from Galen; not a century elapsed from the death of the great physiologist to the advent of the man in whose phenomenal personality may be seen all the distinctive traits of modern medicine, and the range of whose mighty intellect has had few, if any, equals since Aristotle. Hunter's influence on the profession of this continent, so deep and enduring, was exerted in three ways. In the first place, his career as an army surgeon, and his writings on subjects of special interest to military men, carried his work and ways into innumerable campaigns in the long French wars and the war of independence. Hunter's works were reprinted in America as early as 1791 and 1793. In the second place, Hunter had a number of most distinguished students from the colonies, among whom were two who became teachers of wide reputation. William Shippen, the first professor of anatomy in the University of Pennsylvania, lived with Hunter on terms of the greatest intimacy. He brought back his methods of teaching, and some measure of his spirit. With the exception of Hewson and Home, Hunter had no more distinguished pupil than Philip Syng Physick, who was his house surgeon at St. George's Hospital and his devoted friend. For more than a generation Physick had no surgical compeer in America, and enjoyed a reputation equalled by no one save Rush. He taught Hunterian methods in the largest medical school in the country, and the work of his nephew (Dorsey) on surgery is very largely Hunter modified by Physick. But in a third and much more potent way the great master influenced the profession of this continent. Hunter was a naturalist to whom pathological processes were only a small part of a stupendous whole, governed by law, but which could never be understood until the facts had been accumulated, tabulated, and systematized. By his example, by his prodigious industry, and by his suggestive experiments he led men again into the old paths of Aristotle, Galen, and Harvey. He made all thinking physicians naturalists; he lent a dignity to the study of organic life, and re-established a close union between medicine and the natural sciences. Both in Britain and Greater Britain he laid the foundation of the great collections and museums, particularly those connected with the medical schools. The Wistar-Horner and the Warren Museums originated with men who had been greatly influenced by Hunter. He was, moreover, the intellectual father of that interesting group of men on this side of the Atlantic, who, while practising as physicians, devoted much time and labor to the study of natural history. In the latter part of the last century, and during the first thirty years of this, the successful practitioner was very often a naturallist.

I wish that time permitted me to do justice to the long list of men who have been devoted naturalists, and who have made contributions of great value. Benjamin Smith Barton, David Hossack, Jacob Bigelow, Richard Harland, John D. Godman, Samuel George Morton, John Collins Warren, Samuel L. Mitchell, J. Aiken Meigs, and many others have left the records of their industry in their valuable works and in the transactions of the various societies and academies. In Canada many of our best naturalists have been physicians, and collections in this city testify to the industry of Holmes and McCullough. I was regretting the humanities a few minutes ago, and now I have to mourn the almost complete severance of medicine from the old natural history. To a man the most delightful recollections of whose studentship are the Saturdays spent with a preceptor who had a Hunterian appetite for specimens—anything from a trilobite to an acarus—to such a one across the present brilliant outlook comes the shadow of the thought that the conditions of progress will make impossible again such careers as those of William Kitchen Parker and William Carmichael McIntosh.

Until about 1820 the English profession of this continent knew little else than British medicine. After this date in the United States the ties of professional union with the old country became relaxed, owing in great part to the increase in the number of home schools, and in part to the development of an American literature. To 1820, one hundred and fourteen native medical books of all kinds had been issued from the press, and one hundred and thirty-one reprints and translations, the former English, the latter almost exclusively French (Billings). Turning for a few minutes to the conditions of the profession in Canada during this period, I regret that I cannot speak of the many interesting questions relating to the French colonies. I may mention, however, that with the earliest settlers physicians had come, and among the Jesuits, in their devoted missions, there are records of *donnés* (laymen attached to the service) who were members of the profession. One of these, René Goupil, suffered martyrdom at the hands of the Iroquois.[1]

Between the fall of Quebec in 1759 and 1820, the English population had been increased by the settlement of Upper Canada, chiefly by United Empire Loyalists from the United States, and after the war of 1812 by settlers from the old country. The physicians in the sparsely settled districts were either young men who sought their fortunes in the new colony, or were army surgeons who had remained after the revolutionary war or the war of 1812. The military element gave for some years a very distinctive stamp to the profession. These surgeons were men of energy and ability, who had seen much service and were accustomed to order, discipline, and regulations. Sabine, in his "History of the Loyalists," refers to the Tory proclivities of the doctors, and says that they were not so much disturbed as the lawyers and clergymen. Still a good many of them left their homes "for conscience sake;" and Canniff, in his "History of the Profession in Upper Canada," gives a list of those known to have been among the United Empire Loyalists. The character of the men who controlled the profession of the new colony is well shown by the proceedings of the medical board, which was organized in 1819. Drs. Macaulay and Widmer, both army surgeons, were the chief members. The latter, who has well been termed the father of the profession in Upper Canada, a man of the very highest character, did more than any one else to promote the progress of the profession, and throughout his long career his efforts were always directed in the proper channels. In looking through Canniff's most valuable work one is much impressed by the sterling worth and mettle of the old army surgeons, who in these early days formed

[1] Parkman: "Jesuits in North America."

the larger part of the profession. The minutes of the medical board indicate with what military discipline the candidates were examined, and the percentage of rejections has probably never been higher in the history of the province than it was in the first twenty years of the existence of the board.

One picture on the canvas of those early days lingers in the memory, illustrating many of the most attractive features of a race which has done much to make this country what it is to-day. Widmer was the type of the dignified old army surgeon, scrupulously punctilious, and in every detail regardful of the proprieties of life. "Tiger" Dunlop may be taken as the very incarnation of that restless, roving spirit which has driven the Scotch broadcast upon the world. After fighting with the Connaught Rangers in the war of 1812, campaigning in India, clearing the Sangur of tigers—hence his sobriquet "Tiger"—lecturing on medical jurisprudence in Edinburgh, writing for *Blackwood*, editing the *British Press* and the *Telescope*, introducing Beck's "Medical Jurisprudence" to English readers, and figuring as director and promotor of various companies, this extraordinary character appears in the young colony as "Warden of the Black Forest" in the employ of the Canada Company. His life in the backwoods at Gairbraid, his "Noctes Ambrosianæ Canadenses," his famous "Twelve Apostles," as he called his mahogany liquor stand (each bottle a full quart), his active political life, his remarkable household, his many eccentricities—are they not all portrayed to the life in the recently issued "In the Days of the Canada Company"?

America: 1820—1860.—Turning now to the second period, we may remark in passing that the nineteenth century did not open very auspiciously for British medicine. Hunter had left no successor, and, powerful as had been his influence, it was too weak to stem the tide of abstract speculation with which Cullen, Brown, and others flooded the profession. No more sterile period exists than the early decades of this century. Willan, a great naturalist in skin diseases, with a few others, save it from utter oblivion. The methods of Hippocrates, of Sydenham, and of Hunter had not yet been made available in every-day work. The awakening came in France, and such an awakening! It can be compared with nothing but the renaissance in the sixteenth and seventeenth centuries, which gave us Vesalius and Harvey. "Citizen" Bichât and Broussais led the way, but Laennec really created clinical medicine as we know it to-day. The discovery of auscultation was only an accident—of vast moment it is true—in a systematic study of the correlation of symptoms with anatomical changes. Louis, Andral, and Chomel extended the reputation of the French school, which was maintained to the full until the sixth decade, when the brilliant Trousseau ended a long line of Paris teachers, whose audience had been worldwide.

The revival of medicine in Great Britain was directly due to the French. Bright and Addison, Graves and Stokes, Forbes and Marshall Hall, Latham and Bennett were profoundly affected by the new movement. In the United States, Anglican influence did not wane until after 1820. Translations of the works of Bichât appeared as early as 1802, and there were reprints in subsequent years, but it was not until 1823 that the first translation of Laennec—a reprint of Forbes' edition—was issued. Broussais' works became very popular in translations after 1830, and in the journals from this time on the change of allegiance became very evident. But men rather than books diverted the trend of professional thought.

After 1825 American students no longer went to Edinburgh and London, but to Paris, and one can say that between 1830 and 1860 every teacher and writer of note passed under the Gallic yoke. The translations of Louis' works and the extraordinary success of his American pupils—a band of the ablest young men the country has ever seen—added force to the movement. And yet this was a period in which American medical literature was made up largely of pirated English books, and the systems, encyclopædias, and libraries, chiefly reprints, testify to the zeal of the publishers. Stokes, Graves, Watson, Todd, Bennett, and Williams furnished Anglican pap to the sucklings, as well as strong meat to the full grown. In spite of the powerful French influence the textbooks of the schools were almost exclusively English.

In Canada the period from 1820 to 1860 saw the establishment of the English universities and medical schools. In Montreal the agencies at work were wholly Scotch. The McGill Medical School was organized by Scotchmen, and from its inception has followed closely Edinburgh methods. The Paris influence, less personal, was exerted chiefly through English and Scotch channels. The Upper Canada schools were organized by men with English affiliations and the traditions of Guy's, St. Bartholomew's, St. Thomas', St. George's, and of the London Hospital, rather than those of Edinburgh, have prevailed in Toronto and Kingston.

The local French influence on British medicine in Canada has been very slight. In the early decades of the century, when the cities were smaller, and the intercourse between the French and English was somewhat closer, the reciprocal action was more marked. At that period English methods became somewhat the vogue among the French; several very prominent French Canadians were Edinburgh graduates. Attempts were made in the medical journals to have communications in both languages, but the fusion of the two sections of the profession was no more feasible than the fusion of the two nationalities, and the development has progressed along separate lines.

America: 1860–1897.—The third period dates from about 1860, when the influence of German medicine began to be felt. The rise of the Vienna school was for a long time the only visible result in Germany of the French renaissance. Skoda, the German Laennec, and Rokitansky, the German Morgagni, influenced English and American thought between 1840 and 1860, but it was not until after the last date that Teutonic medicine began to be felt as a vitalizing power, chiefly through the energy of Virchow. After the translation of the "Cellular Pathology" by Chance (1860) the way lay clear and open to every young student who desired inspiration. There had been great men in Berlin before Virchow, but he made the town on the Spree a Mecca for the faithful of all lands. From this period we can date the rise of German influence in the profession of this continent. It came partly through the study of pathological histology under the stimulus given by Virchow, and partly through the development of the specialties, particularly diseases of the eye, of the skin, and of the larynx. The singularly attractive courses of Hebra, the organization on a large scale in Vienna of a system of graduate teaching designed especially for foreigners, the remarkable expansion of the German laboratories, combined to divert the stream of students from France. The change of allegiance was a deserved tribute to the splendid organization of the German universities, to the untiring zeal and energy of their professors, and to their single-minded devotion to science for its own sake.

Medicine in Australasia.—In certain aspects the Australasian settlements present the most interesting problems of Greater Britain. More homogeneous, thoroughly British, isolated, distant, they must work out their destiny with a less stringent environment than,

for example, surrounds the English in Canada. The traditions are more uniform, and, of whatever character, have filtered through British channels. The professional population of native-trained men is as yet small, and the proportion of graduates and licentiates from the English, Scotch, and Irish colleges and boards guarantees the dominance of old-country ideas. What the maturity will show cannot be predicted, but the vigorous infancy is full of "crescent promise." On looking over the files of Australian and New Zealand journals one is impressed with the monotonous similarity of the diseases in the antipodes to those of Great Britain and of this continent. Except in the matter of parasitic affections and snake bites, the nosology presents few distinctive qualities. The proceedings of the four intercolonial congresses indicate a high level of professional thought. In two points Australia has not progressed as other parts of Greater Britain. The satisfactory regulation of practice, so early settled in Canada, has been beset with many difficulties. Both in the United States and in Australia the absence of the military element, which was so strong in Canada, may, in part at least, account for the great difference which has prevailed in this matter of the State license. The other relates to the question of ethics, to which one really does not care to refer, were it not absolutely forced upon the attention in reading the journals. Elsewhere professional squabbles, always so unseemly and distressing, are happily becoming very rare, and in Great Britain and on this side of the water we try at any rate to wash our dirty linen at home. In the large Australian cities differences and dissensions seem lamentably common. Surely they must be fermented by the atrocious system of election to the hospitals, which plunges the entire profession every third or fourth year into the throes of a contest in which the candidates have to solicit the suffrages of from two thousand to four thousand voters. Well indeed might Dr. Batchelor, in his address to the fourth intercolonial congress, say: "It is a scandal that in any British community, much less in a community which takes pride in a progressive spirit, such a pernicious system should survive for an hour."

Medicine in Hindustan.—Of India, of "Vishnuland," what can one say in a few minutes? Three thoughts at once claim recognition. Here, in the dim dawn of history, with the great Aryan people, was the intellectual cradle of the world. To the Hindus we owe a debt which we can at any rate acknowledge; and even in medicine many of our traditions and practices may be traced to them, as may be gathered from that most interesting "History of Aryan Medical Science," by the Thakore Sahib of Gondal.

Then there arises the memory of the men who have done so much for British medicine in this great empire. Far from their homes, far from congenial surroundings, and far from the stimulus of scientific influences, Annesley and Ballingall, Twining, Morehead, Waring, Parkes, Cunningham, Lewis, Vandyke Carter, and many others have nobly upheld the traditions of Harvey and of Sydenham. On the great epidemic diseases how impoverished would our literature be in the absence of their contributions! But then there comes the thought of "the little done, the undone vast" when one considers the remarkable opportunities for study which India has presented. Where else in the world is there such a field for observation in cholera, leprosy, dysentery, the plague, typhoid fever, malaria, and in a host of other less important maladies? And what has the British government done toward the scientific investigation of the diseases of India? Until recently little or nothing, and the proposal to found an institute for the scientific study of disease has actually come from the native chiefs. The work of Dr. Hankin and of Professor Haffkine, and the not unmixed evil of the brisk epidemic of plague in Bambay, may arouse the officials to a consciousness of their shortcomings. While sanitary progress has been great, as shown in a reduction of the mortality from sixty-nine per mille before 1857 to fifteen per mille at present, many problems are still urgent, as may be gathered from Dr. Harvey's presidential address in the "Proceedings of the Indian Medical Congress." That typhoid fever can be called the "scourge of India," and that the incidence of the disease should remain so high among the troops, point to serious sanitary defects as yet unremedied. As to the prevalence of venereal disease among the soldiers, an admission of nearly five hundred per mille tells its own tale. On reading the journals and discussions one gets the impression that things are not as they should be in India. There seems to be an absence of proper standards of authority. Had there been in each presidency during the past twenty years well-equipped government laboratories in charge of able men, well trained in modern methods, the contributions to our knowledge of epidemic diseases might have been epoch making, and, at any rate, we should have been spared the crudeness which is evident in some of the work (particularly in that upon malaria) of zealous but badly trained men.

The Future of Medicine in Greater Britain.—In estimating the progress of medicine in the countries comprising Greater Britain, the future rather than the present should be in our minds. The strides which have been taken during the past twenty years are a strong warrant that we have entered upon a period of exceptional development. When I see what has been accomplished in this city in the short space of time since I left I can scarcely credit my eyes. The reality exceeds the utmost desires of my dreams. The awakening of the profession in the United States to a consciousness of their responsibilities and opportunities has caused unparalleled changes, which have given an impetus to medical work which has already borne a rich harvest. Within two hundred years who can say where the intellectual centre of the Anglo-Saxon race will be? The mother country herself has become an intellectual nation of the first rank only within a period altogether too short to justify a prediction that she has reached the zenith. She will probably reverse the history of Hellas, in which the mental superiority was at first with the colonies. At the end of the next century ardent old-world students may come to this side, "as o'er a brook," seeking inspiration from great masters, perhaps in this very city; or the current may turn toward the schools of the great nations of the South. Under new and previously unknown conditions the Africander, the Australian, or the New Zealander may reach a development before which even the "glory that was Greece" may pale. Visionary as this may appear, it is not one whit more improbable to-day than would have been a prophecy made in 1797 that such a gathering as the present would be possible within a century on the banks of the St. Lawrence.

Meanwhile, to the throbbing vitality of modern medicine the two great meetings held this month, in lands so widely distant, bear eloquent testimony. Free, cosmopolitan, no longer hampered by the dogmas of schools, we may feel a just pride in a profession almost totally emancipated from the bondage of error and prejudice. Distinction of race, nationality, color, and creed are unknown within the portals of the temple of Æsculapius. Dare we dream that this harmony and cohesion so rapidly developing in medicine, obliterating the strongest lines of division, knowing no tie of loyalty but loyalty to truth—dare we hope, I say, that in the wider range of human affairs a similar solidarity may ultimately be reached? Who can say

that the forges of time will weld no links between man and man stronger than those of religion or of country? Some son of Beor, touched with a prophetic vision, piercing the clouds which now veil the eternal sunshine of the mountain top, some spectator of all time and all existence (to use Plato's expression) might see in this gathering of men of one blood and one tongue a gleam of hope for the future, of hope, at any rate, that the great race, so dominant on the earth to-day, may progress in the bonds of peace—a faint glimmer, perhaps, of the larger hope of humanity of the day when "the common sense of most shall hold a fretful world in awe." But these, I fear, are the dreams of the closet student who knows not the world nor its ways. There remains for us, Greater Britons, of whatsoever land, the bounden duty to cherish the best traditions of our fathers, and particularly of the men who gave to British medicine its most distinctive features: of the men, too, who found for us the light and liberty of Greek thought—Linacre, Harvey, and Sydenham—those "ancient founts of inspiration," and models for all time in literature, science, and practice.

ADDRESS IN SURGERY.[1]

BY W. MITCHELL BANKS, M.D. Lond.,

[illegible]

The Surgeon of Old in War.—I am indeed greatly honored by having to deliver to you to-day an address in surgery. Fortunately for me the title is a wide one, and I shall take advantage of that fact to diverge from the strict consideration of surgical disease, and shall offer you instead a brief sketch of some of the most notable work done of old by a body of members of our profession who have never received their due reward—those, namely, who have devoted their lives to the succor of the sick and the wounded in war.

Military Surgeons in the Roman Army.—Twelve months ago my friend, Dr. Barnes, of Carlisle, ex-president of this association, made me acquainted with a remarkable paper by the late Sir James Simpson, entitled "Was the Roman Army Provided with Medical Officers?"—a paper exhibiting such profound learning, so charmingly written, and so little known that I need not make any apology for acquainting you with some of its chief points of interest.

The most careful investigations have failed to make out from their writings whether the Romans regularly appointed physicians and surgeons to their armies or not, although nearly every other question relating to their military organization has been treated of, sometimes very fully. Curiously enough, what little information we possess on the subject comes mainly from mortuary or from votive tablets. Borcovicus, in Northumberland—now called Housesteads—was one of the principal stations on the line of Hadrian's wall. Here, about seventy years ago, was found a monumental tablet, now in the Newcastle Museum. On it is the following inscription:

[illegible]
MEDICO
[illegible]

The first Tungrian cohort is known to have been present at the battle of the Mons Grampius, and to have served at Castlecary, at Cramond near Edinburgh, in Cumberland, and at Housesteads. The tablet is highly ornamented, and antiquarians hold that a rabbit and round bucklers carved in the upper part, which are emblems of Spain, show that the young military doctor was probably a native of that country. From various works treating of Roman inscriptions Simpson was enabled to find that four more tablets, in which surgeons of cohorts are mentioned, existed. They were found at Rome. One of them is a votive tablet, the inscription upon which intimates that it was dedicated by Sextus Titius Alexander to Æsculapius and to the safety of his fellow-soldiers. It was cut in the year of the consulship of F. Flavius Sabinus, which is known to have been A.D. 83. As the Roman legion consisted of ten cohorts, it is interesting to know that not only were medical officers attached to each cohort, but also one was attached to the legion—a sort of surgeon-colonel, as we should call him nowadays. Three tablets have been discovered in which the *medicus legionis* is mentioned. One found at Verona was a tablet raised by Scribonia Faustina to her dearest husband, J. Caelius Arrianus, medical officer to the second Italian legion, who died at the age of forty-nine years and seven months. Furthermore, Simpson routed out of Mommsen's Latin inscriptions of Naples a tablet, now in the Dresden collection, which was found in the Elysian fields near Baiæ, close to the Portus Julius, which was the station of a division of the imperial fleet. The inscription tells that M. Satrius Longinus, *medicus duplicatorius* to the trireme *Cupid*, and the heirs of those freed by Julia Veneria erected the tablet to the manes of that deserving lady. The term *duplicatorius* means that by reason of long or meritorius service he was entitled to double pay and rewards. These little gleanings from Simpson's paper show what an interesting one it is, and one is astonished at the labor that must have been expended in digging up the information contained in it.

Ambroise Paré.—Hundreds of years went past before there came upon the scene any military surgeon of note, but when he did appear he was a man of transcendent merit—the illustrious Ambroise Paré. From 1517 to 1590, for seventy-three years, he lived a long and incessantly active life, the contemporary of Vesalius, the immediate predecessor of Harvey. We have only time to glance at the soldier-surgeon side of Paré's life. For over thirty years he followed the wars under four kings of France—Henry the Second, Francis the Second, Charles the Ninth, and Henry the Third, with intervals of a few years at home in Paris. Perpignan, Metz, Verdun, Rheims, Hesdin (where he was taken prisoner and had to write to his wife for his ransom), St. Quentin, La Fère, Amiens, the taking of Rouen, Dreux, Moncontour—these are but some of the bloody battles and sieges at which he was present. Through them all his humanity, his love of his profession, his independent character, and his jovial, frank disposition carried him safe, and made for the son of the poor country joiner warm friends among the greatest and noblest warriors of France. Even that miserable monster, Charles the Ninth, loved the Huguenot surgeon, and when the awful day of St. Bartholomew came Paré was spared to tend his wretched master through the brief term of agonized and remorseful life that was given him. The description in Dumas' novel, the "Two Dianas," of the wound of the famous warrior, Duke of Guise, where the lance entered above the right eye and came out between the nucha and the left ear, breaking short off, and how Paré lugged it out, with the chance that when it did come, one terrible gush of blood would finish his illustrious patient's life and his own career at the same moment—the picture of all this is real history.

Amid all the splendid work, both anatomical and surgical, which Paré did, the application of the prin-

[1] Delivered at the [illegible] Meeting of the British Medical Association at Montreal, September 2, 1897.

ciple of the ligature to bleeding arteries is of course that with which his name will be forever associated. In this day of grace it is impossible for us to imagine the horrors that awaited a wretched man so soon as his limb was cut off and the process of stopping the bleeding began. Think of the raw and exquisitely sensitive stump exposed to the red-hot cautery or plunged into boiling pitch! For this frightful treatment Paré substituted the ligature, which in our own day, employed in the form of an aspetic animal material which the tissues quietly absorb, has practically reached the pitch of perfection. In his time, too, there was a fixed belief that the danger from gunshot wounds arose from the poison of the gunpowder conveyed on the bullet. To destroy this poison the treatment was to pour into the wound boiling oil in which elderwood bark had been stewed. On one occasion, not having this infernal concoction at hand, Paré used a cold mixture of yolk of egg, oil of roses, and turpentine to his wounded soldiers. He passed a sleepless night from dread that this would injure those to whom it had been applied, and his delight next day was proportionately great when he found that they had had but little pain, while their wounds were free from inflammation and swelling. This was his panacea for wounds ever afterward. There are of course persons who wish to make out that he was not original in the matter of the ligature. He himself says this about it: "Taught me as I interpret it by the suggestion of some good angel, for I neither learnt it of my masters nor of any other man. And thus I wish all chirurgions to doe. For it is not in our art, as it is in civill affaires, that prescription, law, or authority should prevail over right reason." But these cavillers have doubtless never heard of an ancient proverb which says that there is nothing new under the sun. In spite of them the world will ever believe in a glorious trio—Paré, the Frenchman, who invented the ligature; Morton, the American, who discovered anæsthetics; and Lister, the Englishman, who introduced antiseptics. In the fulness of years, possessed of affluence and surrounded by friends, died Paré, the whilom poor barber-chirurgeon, now a councillor of state and surgeon-in-chief to the king. One final touch will perhaps reveal a sentiment that permeated and guided his every labor. On one occasion, after the successful treatment of a wounded officer, he made this wise and reverent remark, afterward adopted as his motto: "*Je le pansay; Dieu le guarist*"—"I treated him; God cured him."

Robert Clowes.—Coming to England, a surgeon who saw no little fighting was Robert Clowes, who was born somewhere about 1540 and died in 1604. He served in France in the army commanded by the Earl of Surrey, and was afterward for several years in the navy. He then began practice in London, and was made surgeon to St. Bartholomew's and Christ's Hospitals. But, after being about fourteen years in civil practice, he was despatched by Queen Elizabeth's orders into the Low Countries to attend upon the Earl of Leicester, commander of Her Majesty's forces. He was at Zutphen when Sir Philip Sydney was killed. His last piece of service was a glorious one, he being with our fleet that defeated the Spanish armada. It is told of him that he always kept beside him his military surgical chest with the bear and ragged staff of his old chief Leicester on the lid. He finally settled down once more in London, where he was very successful in practice, and was made surgeon to the queen. He wrote several works in English, of which the most important is entitled "A profitable and necessarie Booke of Observations for all those that are burned with the flame of gunpowder, &c., and also for curing of wounds made with musket and caliver shot, and other weapons of war commonly used at this day both by sea and land." A good half of this treatise is occupied with a record of surgical cases of note which he had treated, and this renders the work very entertaining, inasmuch as we get an accurate and positive knowledge of everything that was done for a wounded man in those days, while there are numerous little side touches very characteristic of life at the time it was written. He tells us, for instance, of "The cure of one Master Andrew Fones, a merchant of London, which, being in a ship at the sea was set upon by the Flushingers, in which fight he was very dangerously wounded with gunshot." There is "The Cure of one Henry Rhodes, one of the waiters at the Custom House, he being upō the river of Thames a skirmishing with his peece, and by reason the peece had certain flaws in it, did breake into many peeces, and made a great wound upon his chin, and carried away a good part of the manduble and the teeth withall; moreover, it did rend his hand greatly: all which I cured without maime or deformitie." There is "An observation for the cure of the master of a Hoy that had both his legs fractured and broken into many peeces with an iron bullet, shot out of a great basse or harquebusse of crocke at the sea by a Pyrat or sea rover." These few titles will give you an idea of Clowes' clinical cases. The importance which attaches to them, and the reason why they constitute a distinct advance in the science of surgery is that the author gives his actual experiences and tells us what he did to his patients, whereas at that period the tendency was to write endless commentaries on ancient writers, to whose every dictum the blindest and most unreasoning respect was paid.

Peter Lowe.—Contemporary with Clowes was a most interesting character—Maister Peter Lowe—who was born in Scotland about 1550, and lived some sixty or sixty-five years, reaching well into the seventeenth century. Like many of his countrymen, he went to France when very young, where he lived, for some say ten, some twenty years. Then he returned to Glasgow, where he lived and died a citizen of much renown, having obtained in 1599 from King James the Sixth a charter for the Faculty of Physicians and Surgeons of Glasgow, which he thus founded. A few years ago Dr. Finlayson published a most charming account of Maister Peter.

His most important work is termed "A Discourse of the whole art of chirurgery, compiled by Peter Lowe, Scottishman, Doctor in the Faculty of Chirurgerie at Paris, and ordinary Chyrurgion to the French King and Navarre." The first edition dated from 1597, and is one of the earliest, if not the very earliest, work embracing the whole art of surgery published in English. It is clear that Lowe must have seen a good deal of military service abroad, being "Chirurgion Major to the Spanish regiments two years at Paris, and since that time following the king of France my maister in the warrs." In his day, as we have seen, the surgical world was still greatly exercised about gunshot wounds and burning by gunpowder, as it was believed that they were injuries of quite a peculiar and very poisonous character. Lowe, however, treats of them with great good sense. Thus: "Of Wounds done by Gun-shot.—These wounds come indifferently to all parts of our body whereof there are divers opinions; some think that there is a venenosity in the powder, and burning in the bullet, which is false, for the things whereof the powder is ordinarily made, as Brimstone, Saltpeter, coales of divers sorts of trees, Water, Wine and Aquavitæ, have no venenosity in them; likewise there is no burning in the bullet, for if the bullet of lead being shot a great way, should burne, through heat would be melted itself. I have cured divers within these thirty yeares of divers nations which have followed the warres in Fraunce

and other cuntries, in the which I have found no more difficulty than in any other contused wounds." Here, again, we have a most important advance made by a military surgeon, for only those who are acquainted with the medical literature of Lowe's time can understand the ridiculous views then held about gunshot wounds, and the dreadful consequences to the patients which followed from them.

We have seen that Paré lived between 1517 and 1590, and that Peter Lowe was in France between 1570 and 1580; consequently, he probably learned all about the ligature for the arrest of hemorrhage. When treating of amputations he describes the whole process of the operation up to the removal of the limb. Then he says: "One of the Assisters shall put the extreamities of his fingers on the great vains and arteries to stay them from bleeding till the Chyrurgion either knit or cauterize them one after another. Where there is putrefaction we stay the flux of blood by Cauters actuals, and where there is no putrefaction, malignitie nor humour venomous we use the legator." He narrates the case of a certain valiant Captain Boyle of the Spanish troops, whom he, in the capacity of chyrurgion-major to the regiment, was summoned to treat for an "aneurisme on the right side of his cragge." Lowe ordered it to be let alone, "but the captain sent for an ignorant Barbor who did open the swelling with a Launcet, which being done, the spirit and bloud came forth with such violence that the Captain died in fewe howers after." Having duly castigated the Ignorants who do such things, Lowe observes that his treatment for such cases is first to draw blood in both arms, and then to apply on the tumor "Rec, Pulveris subtilissimi boli arminici, sanguis draconis, myrtilorum, lapidis calaminaris in aceto extincti, absinthii ad unc. cum cerato refrigerantis Galeni quantum sufficit, fiat unguentum." Curious to note how, even in men of distinct ability like Lowe, a complete ignorance of pathology dragged them into the perpetration of the silliest empiricism.

Woodall's "Viaticum."—In 1628 appeared the first work in England specially devoted to military and naval surgery. Some eleven years later a second edition appeared, and this is its title—"Viaticum, being the Pathway to the Surgeon's Chest, containing chirurgical instructions for the younger sort of surgeons imployed in the service of his Majestie or for the Common-Wealth upon any occasion whatsoever intended for the better curing of wounds made by Gunshot," by John Woodall. A perusal of the "Viaticum" shows that Woodall was a very practical surgeon and an eminently religious man, and the way in which he mixes up pills and piety is sometimes very diverting. After some excellent general advice to the surgeon's mate, including a warning against "being given and dedicated to the Pot and Tobacco-pipe in an unreasonable measure," he enumerates the instruments for the surgeon's chest, including among others Catlings, Rasours, Trapans, Trafine, Lavatories, Cauterising Irons, Storks' bills, Ravens' bills, Crowes' bills, Terebellum, Probes or flamules, Glister Sirings and (what would have utterly damned his book in the present day) "one bundle of small German instruments." Then comes a list of medicines under the heading Unguentum, Aqua, Sol, Oleum, Chemicall Oyles, Syrups, Conserva, Electuariæ, and so on, winding up with a list of the Simples, and of the Herbs and Roots most fit to be carried. A long and careful description of the uses of the instruments and drugs follows, and then come chapters on wounds, apostumes, fractures, dislocations, amputation, scurvy, the plague, gangrene, and other topics. He observes that the cauterizing irons had gone somewhat out of fashion, and he did not use them much himself "because of the feare they put the Patient into and for speech of people who are ready to scandalise an Artist upon each light occasion." In amputation, moreover, they are "now wholly forborne for reasons aforesaid, and for that a more pleasant course is known better for the patient and the Artist by making a ligature upon the veine, wound or artery, which is the binding of each end thereof, being first caught and holden with some fit instrument, and tied with a sure and strong thread."

Woodall advances the cure of wounds a distinct step, once more putting us under an obligation to the soldier-surgeon. This he does by sharply attacking all through his works the inordinate and meddlesome use of strong caustics. He says that he had seen men lamed by the needless use of caustic medicines, even in slight wounds, to which if an old wife had only applied her one salve for all sores, no such thing had happened. "They will not see a wound incarne and red and good flesh to grow, but straight they slander it of pride, and call it proud flesh, like their owne: and then must at the fairest Precipitate or Vitriale burnt goe to work, yea though the Patient be lame for it, or at the least the griefe put back again."

Richard Wiseman.—I wish I had time to give you a proper account of the adventurous life of Richard Wiseman, who has been termed the father of English surgery, and that not without reason. Born in 1620, dying in 1676, he lived in the time of Charles the First, of the commonwealth, and of Charles the Second. He was a naval surgeon to begin with, serving in the early part of his life in the Dutch navy. Being, however, a devoted Royalist, he served with the armies of Charles the First, and after his death went into exile with his son in France. He was present at the battle of Worcester, where he was taken prisoner, and afterward confined in Lambeth House for a while. During the commonwealth he was naturally under a cloud, and even went off for three years to serve in the Spanish navy. At the restoration the King did not forget his old surgeon, who had done and suffered so much in his service, but appointed him his surgeon-in-ordinary, and afterward sergeant-surgeon. The first edition of his work, printed in 1672, is quite a small book, and is entitled "A Treatise of Wounds," but it afterwards expanded into a very large volume.

Nothing reveals a man like his own words, and so in trying to give you an idea of these old worthies I have let them tell their own stories. Wiseman believed in the need for giving stimulants to a man who was in the habit of taking them, if that man was in a dire strait. After describing the parlous case of a certain patient, it seems that the "man swooned and complained that he could not live without wine. I complied with his desire; he drank again as he pleased, his sickness went off, his wound digested, and he cured. This I have often seen in some of our Dunkirkers at sea, who drank extraordinarily, and were full of drink in our sea fights. I could scarce ever cure them without allowing them wine, and thereby their spirits were kept up, and I had the liberty to bleed them as I thought fit." From this it is clear that the old saying about Dutch courage has a distinct origin in fact. But if the unhappy Batavians were liable to be bled at once by the lance of the enemy and the lancet of the surgeon, one can hardly wonder at their taking something to keep their spirits up.

When speaking of gunshot wounds, he insists upon the bullet being searched for and extracted at once. "The part is at first dressing, with what diligence you can, to be cleared of all such Foreign Bodies as have made violent Intrusion into it, while the patient is warm with the heat of Battel, and the wound fresh and very little altered by either Air or Accidents, so that less pain must necessarily follow upon the extraction. In the Armada Naval de Dunquerque, where we Chi-

rurgeons were oft employed in this Service, we after every fight went together visiting one another's wounded men. Amongst us it was thought a great shame if any of this work of Extraction was there to be done. It hath been the cause of the death of many a brave Souldier, and every Battel produces instances of it, to the discredit of our profession." This is good surgery and straight talk. I think it must have been a fine spectacle to have seen these rough old surgeons, with their limited knowledge and their miserable means of treatment, walking round to see each other's patients and learning how best to mend their mistakes.

He has a chapter entirely devoted to a great case of a fracture made by a splinter. The patient had his arm badly smashed above the elbow, and ought to have had it amputated; but a sudden cry of fire stopped this. "I hastily clapt a dressing upon his wound and rouled it up, leaving his arm in his other hand to support it, and endeavoured to get up out of the hold as the others did, I verily believing I should never dress him or any of them more. But our men bravely quitted themselves of the Fire-ship by cutting the Sprizil Tackle off with their Hatchets (which they wore during fight sticking in their Shashes); we were freed of the fire, and by our hoisting up the top sails got free of our Enemy. Now, I was at a loss what to do with this man, who lay not far off complaining of his arm. I would have cut off his arm presently with a Razor (the Bone being shattered there needed no Saw); but this man would not suffer me to dress his arm; he cryed 'it was already drest.' The Fight over, we got into the next Port; I caused presently the Mariner's Bed to be set up (which was four pieces of wood nailed together and corded, and a Bear's skin laid upon it); this was fastened between two Guns to the Carriages." Wiseman then set hard to work to save this unfortunate mariner's arm; but "when it came to my turn to be visited by my brother Chirurgeons of our Squadron, they did not dislike the wound nor my way of dressing (for we, being used to see one another's Patients, had all much one way of dressing); but they laught at the excuse I made for not cutting of his arm, and doubted I should yet be forced to do it. But at the end of two months there was in this Patient a strong callus, filling up the void place of the lost Bone at least two inches, with little or no shortening of the arm." Well done, Wiseman!

Baron Larrey.—Up till the time of the French Revolution it is clear that military surgeons were not men of much importance, and probably had very little influence, if any, in the conduct of campaigns. But in the latter part of the last century war was made on a scale which was never known before, and was made also with a rapidity and a precision quite unprecedented. Moreover, the science and art of surgery had been rescued from quackery, and surgeons in actual practice were able to be of great and real service to the wounded. As a result of the vast masses of men that were hurled against each other, the number of wounded after a big battle amounted to thousands, and civilization had so far advanced that it was imperative that immediate help should be given to them. So that about this time the military surgeon really became an important officer in warfare, and began to have his rank and pay well defined, and his merits (up to a certain point) recognized.

In 1776, near the Pyrenees, was born Jean Dominique Larrey, the chirurgien-en-chef de la grande armée, the friend and body surgeon of Napoleon, the greatest military surgeon that ever lived. He studied at the medical school of Toulouse, and in 1792 joined the headquarters of the Republican army of the Rhine under Custine. Now, the ambulances of these days were obliged to remain about a league from the army, and the wounded were picked up only after the fighting was done. General Custine was a man who moved his troops very rapidly, which made matters worse for the wounded. This greatly affected Larrey, who set to work and devised a new ambulance hung on springs, and combining great strength with lightness. Such carriages were termed *ambulances volantes*. They could keep up with the advanced guard of the army with the speed of flying artillery, and they carried off the wounded almost as they fell. Larrey had early perceived the enormous advantage a wounded man got by having his fracture set or his bleeding stopped as rapidly as possible, and by then getting a roof over his head before night set in. General Beauharnais, in a dispatch to the Convention, made special mention of "Surgeon-Major Larrey and his comrades with flying ambulances, whose indefatigable care in the healing of the wounded has diminished those afflicting results to humanity which have generally been inseparable from days of victory, and has essentially served the cause of humanity itself in preserving the brave defenders of our country." The staff of a flying ambulance was about three hundred and forty in number. For each division there were four heavy carriages and twelve light ones. Some had two and others four wheels, and they were furnished with mattresses. In Napoleon's Italian campaigns they came greatly to the fore, and the great man displayed a lively interest in them, reviewing them and causing them to manœuvre before him just as if they were on a battlefield. After one of these inspections he said to Larrey: "Your work is one of the most happy conceptions of our age. It will suffice for your reputation."

When Napoleon undertook his Egyptian campaign Larrey proceeded to Toulon to organize the medical staff. So readily did professional men respond to the call made by him that he soon was able to reckon on eight hundred well-qualified surgeons, of whom many had served in the army of Italy, and these were in addition to the medical officers actually attached to regiments. This, I think, shows the value that the king of commanders set upon the health of his troops, and the trouble and expense which he was prepared to face in order to maintain it—a great contrast to the miserable way of dealing with this subject which has too long been the fashion with our military rulers. Not long after the landing at Alexandria a certain General Figuières was severely wounded. By able treatment he recovered, and in gratitude for the preservation of his life he asked Napoleon to accept a valuable Damascus sword. "Yes," said the latter, "I accept it in order to make a present of it to the surgeon-in-chief, by whose exertions your life has been spared." Upon the sword were engraved the words "Aboukir" and "Larrey," and the surgeon had it till the fatal day of Waterloo, when the Prussians robbed him of it. Some months after the occupation of Egypt a terrible revolt took place in Cairo by fanatical Turks. Utterly regardless of anything except how to get at Frenchmen to murder them, they attacked the hospital, which was crowded with sick and wounded soldiers, but the doctors valiantly defended their patients, and two staff-surgeons, Roussel and Monjin, were killed, while Larrey nearly shared the same fate.

At one period there was a total dearth of meat, and Larrey had nothing wherewith to make even a drop of bouillon for his patients. He ordered camels' meat to be used for this purpose, and, when that fell short, he used up the horses. Years afterward, in the second campaign against Austria, the imperial guard and several other corps were crowded together in the island of Lobau in the midst of the Danube, which Napleon was endeavoring to cross. The days were roasting and the nights icy cold, and provisions became so sarce that Larrey's patients were in danger of starvation. Without more ado he impounded cer-

tain officers' horses and had them slaughtered and employed as food. As there was a lack of kettles, he employed the cuirasses of those who had been killed, and made his horse-flesh soup and stews in them. Certain generals made bitter complaint to the emperor of Larrey's proceedings, who summoned the surgeon-in-chief, and in the presence of his staff demanded an explanation with a severe expression of countenance. "What," he said, "have you on your own responsibility disposed of the horses of the officers in order to give soup to your wounded?" "Yes," answered Larrey. He added no more, but soon afterward he heard of his promotion to the rank of baron of the empire.

One of the most appalling retreats, next to that from Moscow, was Napoleon's retreat from the invincible walls of St. Jean d'Acre through Jaffa. There is no doubt that at that place considerable numbers of patients sick of the plague were quietly put out of their misery by opium. Alison says sixty; Sir Robert Wilson says five hundred and eighty. The retreat had to go on, the Turks were only an hour's march behind, and nothing but a cruel death awaited these unfortunates, so that whether this were a justifiable deed or not may well give ground for argument. But, as Alison says: "History must record with admiration the answer of the French chief of the medical staff when the proposal was made by Napoleon to him: 'My vocation is to prolong life, and not to extinguish it.'"

In those days means of transport were so inferior, and the necessity for removing hopelessly damaged limbs as soon as possible after the injury so imperative, that amputations were performed on the field of battle, while it was still raging, and amid showers of bullets. During the battle produced by the landing of the English in Aboukir Bay, General Silly had his knee crushed by a bullet. Larrey saw that unless the leg were promptly amputated the case would prove fatal, and, the general giving his consent, the operation was performed in the space of three minutes under the enemy's fire. Just then the English cavalry came upon them. "I had scarcely time," said Larrey, "to place the wounded officer on my shoulders and to carry him rapidly away toward our army, which was in full retreat. I spied a series of ditches, some of them hedged with caper bushes, across which I passed, while the enemy, owing to the ground being so cut up, had to go by a more circuitous route. Thus I had the happiness to reach the rear guard of our army before this corps of dragoons. At length I arrived at Alexandria with this honorably wounded officer, where I completed his cure." We must all agree that these were a pair of heroes.

As may be imagined, the awful retreat from Moscow called into play all Larrey's resources, and many an interesting story could be told of his efforts. Think of the awful battle of the Borodino, where under Larrey's own direction two hundred amputations were performed, where there were neither couches nor blankets nor covering of any kind, and where the food consisted of horseflesh, cabbage stalks, and a few potatoes. Think of cold so intense that the instruments requisite for the operations too often tumbled from the powerless hands of the French surgeons. Think of the savage Cossacks, hovering about all the while, and waiting their chance to kill the surgeon and the wounded men equally with the combatant. Then came the passage of the Beresina. Take an incident of it. Among the wounded was General Zayonchek, who was over sixty years of age. His knee was crushed, and without amputation the saving of his life was impossible. It was performed under the enemy's fire, and amid thick-falling snow. There was no shelter except a cloak, which two officers held over him while the operation was being performed; but the surgeons did their work with such coolness and dexterity that the old general survived, and died fourteen years afterward viceroy of Poland. Larrey succeeded in getting over the Beresina with the imperial guard, but discovered that the requisites for the sick and wounded had been left on the other side. At once he recrossed the river, only to find himself in the midst of a furious struggling crowd. He was on the point of being crushed to death when providentially the soldiers recognized him. No sooner did they do so than they carried him across the river in their arms, with the cry, "Let us save him who saved us!" and forgot their own safety in their desire to preserve the man whose tender kindness they had so often experienced.

Following his adored master through victory and defeat, Larrey at last stood at night on the field of Waterloo, alone except for some medical officers and the wounded who lay groaning around them. Down upon them came a squadron of Prussian lancers. Expecting no quarter, he fired his pistols at them and galloped away. They shot his horse and sabred him as he lay on the ground. Leaving him apparently dead, they went off. But he recovered his senses, and tried to crawl by crossroads into France. Again he was seized by another detachment of Prussian cavalry. They robbed him promptly of all he possessed, and took him before a superior officer, who ordered him to be shot. What a reward from a soldier to one whose life had been passed in succoring soldiers! About a quarter of an hour before the sentence was to be carried out, a surgeon-major recognized Larrey. He had attended with deep interest a course of lectures which Larrey had delivered in Berlin six years previously. The prisoner was brought before Bulow, and finally presented to Blücher, whose son in the Austrian campaign had been badly wounded and captured by the French, and who owed his life to Larrey's exertions.

Larrey's honorable and glorious life terminated in 1842. Napoleon, when he made his will at St. Helena, wrote in it: "I bequeath to the surgeon-in-chief of the French army, Larrey, 100,000 francs. He is the most virtuous man I have ever known." From Napoleon's lips the words of free, spontaneous, ungrudging praise such as this rarely fell.

Pestilence More Deadly than the Sword.—In the middle of the last century, while surgery had distinctly improved, the gross neglect of the government and the pig-headed obstinacy of the generals were such that our unfortunate soldiers and sailors were hardly any better off than they were in the days of Paré. It has been maintained that Smollett, in the appalling picture of naval life as witnessed in the miserable expedition to Carthagena which he drew in "Roderick Random," and which is known to have been the record of his own experience as surgeon's mate, grossly exaggerated the evils thereof. I do not believe this. Look at the awful and unsuccessful expedition to Porto Bello in 1726, when nearly the whole of the crews of the ships were destroyed by fever three times over; where 2 admirals, 10 captains, 50 lieutenants, and about 3,000 to 4,000 inferior officers and men perished without striking a blow. Look at the taking of Havana in 1762. The Earl of Albemarle took with him in the fleet 11,000 soldiers. Between June and the middle of October, when Cuba was ours, we had lost 560 men by wounds, and 4,708 by sickness. At the end of the seven years' war a statement was drawn up in the "Annual Register" for 1763, from which it appeared that in all the naval battles of that war there were but 1,512 sailors and marines killed, while 133,738 had died of disease or were "missing." Look even at the end of last century, and consider the wretched and disgraceful Walcheren campaign. Never did our poor soldiers fight with more gallantry than in that cam-

paign, only to perish beside Dutch ditches and canals from fever and ague and dysentery.

Military Courage.—As we have just seen, Baron Larrey's whole life shows that, while absolutely devoted to the work of his profession, he displayed a cool courage on the field of battle not less heroic than the more dazzling deeds of his fellow combatant officers. Not less does it mark the military surgeon of the present day. Have you ever heard of Surgeon Thomson, who, during the Crimean war, when the army marched off after the battle of the Alma, volunteered with his servant, John McGrath, to remain behind on the open field with five hundred terribly wounded Russians, and passed three awful days and nights—these two Englishmen alone—among foreign foes, some dead, some dying, and none able to raise a hand to help themselves? Have you ever heard of Assistant Surgeon Wolseley, of the twentieth regiment, who, at the battle of Inkerman, had quietly established his field hospital in that awful place, the Sandbag Battery? When the one hundred and fifty men, who were all that remained of its defenders, were forced to desert it, about one hundred of them fell back in one direction, and in that they found, at thirty paces from them, a Russian battalion blocking their path. There was not a combatant officer left, so the assistant surgeon took command. He had not even a sword with him, but, laying hold of a firelock with a fixed bayonet on it, he spoke a few words to the men within range of his voice, and told them that what they now had to fight for was not victory but life. Then he gave them the word of command: "Fix bayonets, charge, and keep up the hill." The soldiers answered him with a burst of hurrahs, sprang forward to the charge, and the next instant were tearing through the thickest of the Russians. One-half of these reached the other side alive. Have you ever hard of Surgeon Landon, who was shot through the spine while attending to the wounded on Majuba Hill? His legs were paralyzed, but he caused himself to be propped up, and continued his merciful work till his strength ebbed away. When unable for more he quietly said: "I am dying; do what you can for the wounded." Have you ever heard of Surgeon-Captain Whitchurch, who gained the Victor a Cross at the beleaguering of Chitral for the most determined courage in endeavoring to save the life of Major Baird? Yes, you have, for last year at Carlisle you gave him the gold medal of the association, the highest honor which our association can give to its members. There died the other day a certain Surgeon-General Reade, C.B., V.C. During the siege of Delhi, while attending to the wounded at the end of one of the streets of the city, a party of rebels advanced from the direction of the bank, and, having established themselves in the houses in the street, commenced firing from the roofs. The wounded were thus in very great danger, and would have fallen into the hands of the enemy had not Surgeon Reade drawn his sword and, calling upon a few soldiers who were near to follow, succeeded under a very heavy fire in dislodging the rebels from their position. Surgeon Reade's party consisted of about ten in all, of whom two were killed and five or six wounded. Ladies and gentlemen, Surgeon Reade was a Canadian, and the son of a colonel of the Canadian militia. Of the one hundred and eighteen wearers of the Victoria cross fourteen are surgeons, nearly twelve per cent. of the whole number. They stand in the proportion of 9.5 per cent. of all the officers of the army, so at all events they have contributed not less than their fair share of the deeds of valor which alone can win that glorious distinction.

The Army Medical Service To-day.—Ladies and Gentlemen: I have diverged from the beaten track common to the givers of addresses such as this to tell you what splendid men have been the military and naval surgeons of old, who not merely did their duty nobly and courageously as such, but who have in their day enormously contributed to the advance of the art of surgery. I have done it with a purpose; with the hope of attracting more strongly than ever the sympathy and help of this great association to their military brethren in a critical juncture of their history. To-day Her Majesty's government cannot induce candidates to come forward for the medical service of the Queen's army. And why? Because it has persistently treated the army medical department meanly and shabbily. To-day the government of India can secure the services of the pick of our newly fledged doctors for its army. And why? Because it has always treated the Indian medical service liberally and generously. I am not going to enter into the reasons for this; I desire merely to emphasize one point, namely, that money is not at the bottom of this difficulty. The soldier surgeons of to-day are the same men now that they were in the days of William Clowes, who winds up his book, as I shall my address, with these verses:

> "When valiant Mars, with brave and warlike band,
> In foughten field with sword and shield doth stand,
> May there be mist a surgeon that is good,
> To salve your wounds and eke to stay your bloud.
>
> "To cure you sure he will have watchful eie,
> And with such wights he means to live and die,
> So that againe you must augment his store,
> And having this he will request no more."

THE PROGRESS AND RESULTS OF PATHOLOGICAL WORK.[1]

BY W. WATSON CHEYNE, M.B., F.R.C.S., F.R.S.,
LONDON, ENGLAND,
[illegible]

GENTLEMEN: On such an occasion as this one is naturally tempted to look back on the history of pathology during the last sixty years, but I hope that you will not expect me to follow the fashion in this respect. To trace the history of pathology during the last sixty years would be to follow the science practically from its commencement and go back to a state of matters which it is almost impossible for us now to realize. Even going back to the time when I was first introduced to the study of pathology, some twenty-five years ago, the changes which have taken place are enormous. At that time the lectures on pathology consisted practically entirely of morbid anatomy—long descriptions, for the most part very accurate and not materially different from those of the present day, were given of the naked-eye appearances of the diseased parts, but as to how or why these changes were brought about hardly any reference was made. Indeed, very little was known, and when an explanation was attempted it was generally of a mechanical or physical character. At the present time, while, of course, the changes which take place in disease must be known, the study of pathology is especially directed to the discovery of the mode in which these changes occur and the reasons why they appear. To-day it is the etiological side of pathology, so to speak, which occupies our attention, and deservedly so, for, so far as practical results in the treatment of disease are concerned, the knowledge of the changes produced is of comparatively minor importance as compared with that of the reason why they are set up and how they take place. The more accurately we can trace the etiological factors in disease and the subsequent course of events, the more likely are we to arrive at a rational method of treatment.

[1] An address delivered at the opening of the section of pathology, at the annual meeting of the British Medical Association, at Montreal, September 1, 1897.

The most striking and important advance has been the growth of the great science of bacteriology, a science which has not only led to most important practical results, but has also thrown a flood of light on the processes which go on in the body as a whole, and has stimulated research in other directions not immediately associated with it. Twenty-five years ago bacteriology as a science was non-existent. So far as I remember bacteria were not even alluded to in our course of pathology, and it was only from Lord Lister that we heard the real facts so far as they were known, or gained any idea of the importance of their study; but even at that time, although his methods of treatment were already yielding brilliant results and saving many lives, and although he had deduced from clinical facts many points in the life history of bacteria and their relations to the living body, which were only confirmed by experiment subsequently, still the number of actual proved facts was extremely few.

It is difficult for those who have taken up the subject of bacteriology only comparatively recently to realize the absolute blank which it presented even twenty years ago. When I became house surgeon to Lord Lister in 1876 objections of all kinds were urged against the theory on which Listerism was based, some denying the existence of bacteria at all, others maintaining the theory of spontaneous generation; some asserting that organisms were always present in the healthy tissues, others denying that they had anything to do with disease, or that the success of the antiseptic principle depended in any way on the exclusion of micro-organisms from wounds. It was these objections which led me to take up bacteriology, for it seemed to me of great importance to ascertain whether or not, as the result of antiseptic treatment, organisms were absent from the discharges from the wounds. Although at the present time such an investigation would be one of the simplest, yet when I came to carry it out I was met with the greatest difficulties. Practically nothing of the kind had been done before, and all the means of investigation had to be devised. Methods of staining bacteria had not been introduced, we had no oil-immersion lenses, and I very soon found that by looking at discharges from wounds containing leucocytes, granular matter, and *débris* with dry or water immersion lenses, and without substage condensers, no satisfactory result could be arrived at. Hence I came to the conclusion that attempts must be made to see whether organisms grew in suitable fluids inoculated from the discharges. Here again everything had to be devised. A suitable pabulum, methods of sterilization, of inoculation, and of incubation had to be worked out. A large amount of time was spent in getting over the preliminary difficulties, and after a satisfactory method had been found much labor had to be devoted to preliminary questions, such as spontaneous generation, morphological characters of bacteria, their presence or absence in the living body, conditions of growth, and so on.

A great advance which followed soon afterward was the remarkable research by Lord Lister on the bacterium lactis, in which he devised a method of separating bacteria by fractional cultivation, which resulted in the separation of the bacterium which causes lactic fermentation from other organisms. By this research, apart from the method, a great step was gained in the proof of the specificity of a particular bacterium, both as regards morphological characters and chemical action.

Then came Koch's work on infective diseases of wounds, and the publication of his methods of staining and examining bacteria and of cultivating them on solid media, and this work is at the foundation of all modern bacteriological research. From this period the investigations have branched off in two directions. In the first place, almost all the infective diseases have been investigated for parasitic organisms, and in a large number the causal agents have been identified. And, in the second place, researches have been carried on in the direction of tracing out the life history and functional activity of bacteria, and of ascertaining what occurs in the body when organisms or their products are introduced.

From the latter point of view we come to another great landmark in the study of bacteriology, namely, Metchnikoff's work on phagocytosis, a theory which is not only very fascinating in itself, but which has proved a most suggestive working hypothesis leading to many of the researches which have given bacteriology its present position. What a remarkable series of views have been opened up in this direction: questions of the relation of the cells of the body to the parasite, the differentiation of cells, alterations in serum, chemiotaxis, the development of the protective agencies and of antibacteric substances, antitoxins, immunity, and so forth. And yet we are clearly only on the threshold: the very simplicity of many of the explanations is, to my mind, sufficient to show that they are incomplete, for the workings of the living body are far too intricate to be summed up in a simple formula.

In spite, however, of all that has been done, many problems still remain unsolved. In the case of tuberculosis, why is it that in one part of the body we have a slow-growing lupus disease, and in another part, perhaps, of the same body a rapidly developing tuberculosis? None of the explanations usually given, such as differences in the structure or resisting power of the tissues affected or of the individual, differences in the virulence or activity of the organism, etc., seems to furnish sufficient explanation. And the same problem is apparently presented with regard to the bacilli of diphtheria, in that we may have in one case a true diphtheria, in another a membranous rhinitis, while in the third, although the bacilli are present in the throat, the individual may be apparently healthy.

Another very remarkable problem is presented by the results which follow free incisions into tuberculous tissue. An incision is made into the abdominal cavity, masses of tuberculous tissue and tubercle are found scattered over the peritoneum; nothing whatever is done, the wound is stitched up, and yet in many cases the patient, who up to that time has been going steadily down hill, begins to pick up, and the disease may come entirely to a standstill. This phenomenon is not limited to peritoneal tuberculosis. When I was a student the tuberculous nature of what are now recognized as tuberculous diseases of bones and joints was then only suspected, and was not generally accepted by the medical profession. At that time Lord Lister, under the impression that these diseases were of a simple inflammatory nature, and having observed the improvement which often followed free incisions into chronically inflamed tissues, began as an ordinary line of practice to make free incisions through the thickened synovial membrane of tuberculous joints with the view of relieving tension, which he looked on as the chief cause of the continuance of the trouble. Nothing else was done, the joint was not even washed out, nothing was taken away, and yet in a considerable number of cases so treated improvement began from the time that the incisions were made, the patients lost their pain, the wounds gradually healed up, and the disease subsided. Even in cases in which the results were not so satisfactory it could as a rule be noted that, although the swelling continued in other parts of the joint, and although the disease began again after a few weeks as vigorously as before, yet for a time at least the thickening disappeared in the neighborhood of the scars, showing that there at any

rate temporary benefit had occurred. What possible explanation can we give of such a result? The older surgeons used to speak of "setting up a healthy action in the part," and were quite satisfied with that statement. Such a view is too vague for us nowadays, but may there not be here a possible working hypothesis which if followed out might throw light on this matter? May not the occurrence of healing processes at one part influence in some way or other morbid processes in the vicinity?

Again, what is the meaning of a chronic abscess? How is it that the tubercle bacilli at one time produce a quantity of tuberculous tissue, at another a cheesy mass, and at another a chronic abscess? I do not for one moment accept the view that we have in the latter case to do with a mixed infection, and that the pyogenic organisms have died out before the abscess was opened.

In connection with the pyogenic organisms also we have many problems. How is it, for example, that after an abscess is opened antiseptically suppuration at once ceases? If instead of opening the abscess antiseptically a poultice be applied, suppuration goes on and may be very profuse. But if it be opened at a time when there is free fluctuation and when it is beginning to point, and if the necessary antiseptic precautions be taken and proper drainage provided no more pus forms, and yet when the abscess is opened it is found to contain living pyogenic organisms. We can easily understand that the subsidence of the fever and general disturbance is due to diminished absorption of toxic products. But why do not these living pyogenic organisms keep up the suppuration? and why is it that after two or three days one may fail to obtain any cultivations from the serum which escapes from the wound? If the inflamed part be opened up antiseptically, however, at an early period, just when pus is beginning to form, there is not always the same complete absence of suppuration, although it seldom goes on to any considerable extent.

Again, an operation wound becomes septic and one naturally opens it up freely and establishes drainage: but here suppuration does not cease at once in the same typical manner as in the case of an abscess which has existed for some days. The old surgeons used to speak of an abscess being "ripe," and they allowed it to remain unopened for some days till it was pointing. They found that if they opened a deep abscess early, suppuration went on and was apt to extend. No doubt a variety of causes led to this dictum: they did not provide proper drainage; they introduced other and more vigorous organisms at the time of operation and afterward, etc.; but do not the facts seem to indicate that, as regards the cessation of suppuration, there is some ground for this idea of ripeness? Is it possible that when the abscess has attained a considerable size and the tension of the pus in it is great the sudden release of the pent-up fluid may lead to such a pouring out of serum containing antitoxic substances as absolutely to destroy the organisms present, while, the case being treated antiseptically, no fresh organisms can come in to take their place? And yet I can hardly think that that is the whole explanation.

Although it is in the department of bacteriology that the most striking advance has been made, great progress has also gone on in pathology generally, in a considerable number of cases no doubt stimulated by the results of bacteriological research, and more especially by Metchnikoff's work. The subject of inflammation has had much attention paid to it as the result of these studies, although I cannot say that to my mind it has been made any clearer. The tendency now appears to be to regard inflammation as the natural effort at repair after injury. At one time this was the view held by surgeons, and the doctrine was that inflammation was essential to healing, and in the description of healing by first intention it was stated that a red blush occurred around the wound, not so severe, however, as where suppuration takes place, and that without this red blush the edges did not adhere. When antiseptic treatment was introduced it became evident that no inflammatory blush or other sign of inflammation was necessary for healing by first intention; in fact, it was found that wounds healed best when no visible sign of inflammation was present. I have, therefore, always taught that inflammation and healing are two different and, indeed, to some extent antagonistic processes, and that although in every wound the tissues in resenting the injury show the early stage of inflammation, yet if no organisms be admitted the inflammatory phenomena soon pass off, and where there is destruction of tissue a second process, namely, that of repair, begins. As I have said, in recent writings the tendency appears to be to look on inflammation and healing as parts of the same process; but in spite of the very able arguments adduced in favor of this view I am still unconvinced. I still look on inflammation as the mechanism which gets rid of noxious agents or neutralizes their effects, and on the healing process as that which repairs defects, whether they are caused by injury and associated with inflammation or not. In fact, inflammation must be followed by repair if recovery is to take place, but repair need not be preceded by inflammation. The difficulty arises from the close association of the two processes, both of which have to do with the growth of cells, and from the fact that repair follows as soon as the inflammation begins to subside. Hence under the microscope, except in cases of acute suppurative inflammation, one sees the two processes at work side by side, and it is not a matter of surprise that they should be confounded. As a matter of fact, the more the cellular processes are investigated the more it becomes evident that there is a marked differentiation of cells as regards function.

When Cohnheim first published his observations on the emigration of corpuscles it was thought by many that the leucocyte was everything and did everything, but it was soon evident that other cells of different origin must be taken into consideration. When Metchnikoff's theory of phagocytosis first came out, some of those who adopted it assumed that all wandering cells were phagocytes; but here, again, further investigation has shown that cells differ greatly as regards their phagocytic action. I think that a good deal of the confusion of these processes arises from the fact that expressions involving a teleological argument are becoming very common, more especially with regard to the protective arrangements of the body. On the idea of an acting intelligence on the part of the cells, the two processes would naturally go together; but, looked on as the simple effect of an injury, they should, I believe, be regarded as independent, and the less and the shorter the inflammation the better and quicker the healing process.

A very remarkable thing in connection with these advances, especially in experimental pathology, is the enormous direct practical benefit which has already resulted to the human race; and it is sufficient answer to the antivivisectionists who oppose the use of intelligence and observation and experiment, to point to the saving of human life and the relief of suffering which has taken place in the last few years. Since Pasteur's experiments on spontaneous generation were published, only thirty-six years have elapsed, and during that time remarkable results have been attained in treatment as the result of experimental pathology.

Scientific effort to arrive at the truth as regards the workings of nature are necessarily slow, and must be carried on without any regard to possible ultimate

practical results. When the earlier investigators studied the phenomena of electrical action, I doubt if it ever occurred to them that the result of their study would be of any practical value; certainly they could have had no idea of the revolution which the study of electricity would effect in the history of the world. When Pasteur resolved to test the theory of spontaneous generation, it did not seem likely to lead to any beneficial result; indeed, his friends tried to dissuade him from entering into what was apparently a useless investigation, and yet what numbers of human lives have been saved as the result of that work, and what incalculable benefit has accrued! It is greatly the fashion with the opponents of experimental research to demand a single instance in which an experiment has led to the discovery of a means of cure; but in no department of science has a single experiment of itself alone led to the practical result; the final observation which led to the practical result has been built up on numerous and laborious preliminary investigations and observations. And similarly, in regard to the cure or prevention of disease, the final trials on man have been led up to by numerous preceding observations and experiments. If these deluded people had their way, the result would be that experiments would be limited to man, and every one to whom a new idea occurred would apply it without any previous investigation—surely an appalling prospect, whether for physician or patient.

The practical results already obtained affect diagnosis, prophylaxis, and treatment. The diagnosis of many parasitic diseases has now been rendered certain and easy by searching for the causal organism, and I need only instance such diseases as diphtheria, tuberculosis, malaria, anthrax, gonorrhœa, etc. And it is not only by the discovery of the parasite that diagnosis is assisted, but also by other effects of the organism, such as the sort of changes set up in the tissue, the reaction to products of the organism, for instance tuberculin and mallein, etc., and we shall hear a good deal about one of these diagnostic advances in the course of the meeting, namely, the action of the serum of typhoid patients on motile typhoid bacilli. If no other practical advance had resulted from bacteriological work, the possibility of establishing a definite diagnosis in obscure cases is surely a gain of the utmost importance, for it enables a rational prophylaxis and treatment to be instituted.

The greatest of all the advances, because so wide-reaching, has been in the prophylaxis of disease, especially in the prevention of septic disease after operations, as brought about by the discoveries of Lord Lister. By these discoveries the occurrence of sepsis in wounds made through unbroken skin is prevented, and the chances of general sepsis in septic wounds are much diminished, and numerous lives are saved, not only in this way, but also by the fact that the Listerian treatment permits the performance of many life-saving operations which could not otherwise be attempted. In other cases also, prophylaxis is of great value, as in diphtheria, and in Pasteur's treatment of rabies, which may properly be grouped as a prophylactic rather than a curative treatment.

Lastly, I may refer to advances in the cure of disease. In the case of diphtheria there can be no question that the antitoxin is a most potent curative agent, and that, used in the early stages, it is almost certain to cut short the disease. As regards tetanus, the evidence in the case of animals is absolutely convincing, but in patients suffering from the disease the effect is not certain, probably because we have to do with an acute illness, which runs its course before the serum has had time to act. The same may also be the case with the antistreptococcic serum, although I have great doubts of its value as a curative agent. In other instances, such as plague and snakebite, we may apparently look forward to a cure; while researches are being carried on with regard to pneumonia which may lead to valuable results; nor must I forget to mention Pasteur's system of inoculating cattle against anthrax. What are we to say about the new tuberculin? We all know how careful an observer Koch is, and the fact that he looks on it as a valuable remedy is to my mind sufficient to make it necessary to give it a careful and hopeful trial. I must say that I have always been favorably inclined to the old tuberculin, and have regarded it in relation to phthisis like iodide of potassium in relation to syphilis, and, had I been a physician, I do not think I should have abandoned it in the hurried manner in which it was thrown aside.

But it is not only in the direction of bacteriology that advantage has resulted from pathological research. Look at the advances in treatment from the use of organic fluids. As the result of observations on man and researches on animals as to the effects of excision of the thyroid gland attempts were made to transplant the healthy thyroid gland into animals and patients in whom it was absent, and following these attempts the use of thyroid extract has ultimately come to be a recognized method of treatment. There is, perhaps, nothing more striking in medical treatment than the rapid and remarkable improvement in cases of myxœdema from the use of thyroid extract.

I might enumerate many other instances of direct benefit from pathological research, such as the advances in the treatment of tuberculous diseases of bones and joints as the result of better knowledge of the nature and distribution of the disease, the treatment of appendicitis, and the investigations on peritonitis and diseases of the appendix, the more complete operations for cancer following fuller study of the mode of spread of the disease, and so on; but I have said enough to show the great importance and value of pathological research. Such results must encourage us to go on working with all our might and without ceasing, bearing in mind that many are suffering and dying every day who might be saved if only we had just a little more knowledge of the workings of the body and the processes of disease.

But while pathologists are thus working out problems which affect the general well-being of mankind, and the solution of which can be of no personal gain to themselves, is it too much to ask mankind to furnish the means for such research? The English are looked on as a thoroughly practical people, and yet it is a very remarkable thing that England is almost the only country which does not realize the importance of scientific research, and the result is that in England, with very few exceptions, men who might otherwise have thrown much light on these matters are compelled to turn their attention to practice in order to make a living. Unless work of this kind is done how can we hope to advance with any rapidity in the treatment and cure of disease? The surgeon or physician must wait till the information of which he is urgently in need has been acquired for him by the pathologist. Such apathy can surely be the result only of ignorance. A rich man affected with an obscure or incurable malady cannot understand how it is that he fails to obtain the definite opinion or the relief which he so earnestly desires, and for which he is prepared to pay any price. Surely if he understood the meaning and importance of pathological research, and that the practising physician can apply and carry out only what is taught by the pathologist, he would bestir himself to aid research in order to gather information which might be of much use to him and to others.

Torpid Ulcers, even when painful and due to varicose veins, may be made to cicatrize comfortably if dusted daily with antipyrin.—SCHREIBER.

Progress of Medical Science.

Bilateral Optic Neuritis Complicating Enteric Fever.—Braine-Hartnell (*British Medical Journal*, May 29, 1897) has reported the case of a boy, eleven years old, of weak intellectual development, who "ailed" for a few days, without presenting any definite symptoms. On the third day the temperature was 103.4° F., and his bowels were moved five times. For the next four days the bowels were moved twice daily. The child was restless and noisy, and could with difficulty be kept in bed. Photophobia and signs of cerebral irritation developed. The face was pale, the pupils were equal, the tongue was dry, and sordes formed on the lips. The bowels were not loose from the seventh day until death took place, upon the eighteenth day of the illness, but formed stools were constantly passed. The abdomen was if anything somewhat retracted. There were no spots; the spleen could not be felt, nor could an enlarged area of percussion dulness be made out. The temperature fell on the tenth day to normal, but rose again on the fifteenth, and on the eighteenth day, just before death, it reached 105.2° F. The pulse rate varied from 120 to 160. The left knee jerk could not be elicited; the right was present. Plantar, cremasteric, and abdominal reflexes all were present. There was no impairment of sensation and no retention of urine. There was never any strabismus and no convulsions were noted. Two days before death there were slight inequality of the pupils and well-marked bilateral optic neuritis, more pronounced upon the right side. There was no nasal or aural discharge, and no pulmonary abnormality could be detected. The post-mortem examination revealed distinct inflammation of Peyer's patches, with decided enlargement of the mesenteric glands and solitary follicles. Nothing was found in the brain to give rise to the optic neuritis.

Disinfection of Typhoid Excreta.—Dr. W. Gilman Thompson (*Albany Medical Annals*, April, 1897) concludes as follows: 1. The best disinfectants of typhoid stools for practical use are: (*a*) 1 to 500 acidulated solution of corrosive sublimate; (*b*) 1 to 10 crude carbolic-acid solution; (*c*) chlorinated lime. 2. Owing to the possibility of injury to plumbing, the carbolic-acid solution is preferable wherever plumbing is concerned. The lime is best for country use in privies and trenches. 3. The disinfectant should be thoroughly mixed with the stool and left in contact with it for fully two hours. Enough of the disinfectant must be added to cover completely the stool with the solution. 4. The bed pan should be kept ready filled at all times with at least a pint of the disinfectant, into which the stool is at once discharged, and should be cleaned with scalding water and one of the disinfecting solutions. 5. Rectal thermometers, syringes, tubes, and all utensils coming in contact with any of the fæcal matter must be disinfected with the corrosive-sublimate or carbolic-acid solution. 6. After each stool the patient's perineum and adjacent parts should be washed and sponged with a 1 to 2,000 corrosive-sublimate solution. 7. Nurses and attendants should be cautioned to wash their own hands thoroughly and immerse them in a 1 to 1,000 corrosive-sublimate solution, after handling the bedpan, thermometer, syringe, or patient, or giving sponge or tub baths. 8. All linen and bedclothing used by the patient should be soaked in a 1 to 20 carbolic-acid solution and subsequently boiled for fully two hours. 9. Disinfection of the stools should be begun as soon as the diagnosis of enteric fever is established, and should be continued for ten days after the temperature has remained at the normal. 10. In localities where a proper drainage system is lacking, the stools should either be mixed with sawdust and cremated, or buried in a trench four feet deep after being covered with chloride of lime.

Eucalyptus Globulus in Strychnine Poisoning.—Dr. Monfrida Musmecin has found that a decoction of the leaves of eucalyptus globulus and a solution of a salt of strychnine formed a flocculent precipitate of a clear color, a solution of citron-yellow tint remaining above and the strychnine losing its bitter taste. This raised the question as to whether eucalyptus was an antidote for strychnine. The author carried out a number of experiments upon animals, to ascertain what effects would be produced by giving these two drugs together, and what antidotal power eucalyptus would exert after the development of the symptoms of strychnine poisoning. He found that when these drugs were given simultaneously the animal survived, while if the same amount of strychnine were given alone to an animal of the same kind and size, death would ensue. In another set of experiments the eucalyptus was given after convulsions had appeared, and then these became much less marked and even disappeared. From these experiments the writer believes that eucalyptus has a real antidotal action, and that a practical application of it should be made by employing a decoction for washing out the stomach in such cases. —*British Medical Journal.*

Sudden Death in the Puerperium.—Dr. Goltman (*Memphis Medical Monthly*, April, 1897), in an article on this subject, formulates the following deductions: 1. Pulmonary embolism is the cause of death in most of these cases. 2. It is rare, but so shocks a community when it occurs that it is advisable to take every precaution to guard against it. 3. Phlebitis, varicose veins, prolonged labor, hemorrhage, anæmia, sepsis, cancer, syphilis, etc., predispose to its production. 4. In the presence of peripheral thrombosis, etc., absolute rest must be enjoined, especially between the second and third weeks of the puerperium, as this is the disintegrating period of the clots. The danger should also be explicitly pointed out to both patient and attendants, thus insuring, to an extent, a healthy co-operation. 5. The extreme changes in the blood usually ascribed to pregnancy and the puerperium are erroneous, and not corroborated by modern investigation. 6. Sudden death from air embolism in the puerperium is doubtful from physiological, pathological, and rational standpoints. 7. Shock is both a direct and indirect cause of death in the puerperium, and should be guarded against. 8. Organic heart affections, kidney trouble, etc., are capable of producing death at any time, and should not be overlooked in the puerperium.

Puerperal Biliary Colic.—According to Dr. Eiermann, cases of biliary colic occurring after labor are rare. He relates one occurring in a primipara, aged twenty-nine, who suffered from albuminuria during pregnancy. Delivery was difficult, and a rupture of the perineum almost into the rectum occurred. In five days the œdema of the legs disappeared, but then the patient was seized with shivering and severe pain in the upper part of the abdomen. On the next day there was distinct jaundice, which disappeared in two or three days. There had been no previous history of gall stones. Eiermann attributed the colic to the suddenly altered pressure relations in the abdomen after labor. Gottschalk has seen nine or ten cases of gall stones in women in the puerperal state. In one the colic reappeared after a subsequent pregnancy, the patient having been free from it in the interval. The diagnosis may be difficult if there is no jaundice.—*Münchener medicinische Wochenschrift.*

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THE MONTREAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

THE sixty-fifth annual meeting of the British Medical Association, at Montreal, during the present week, a special report of the first part of which will be found in another column, was an event in the medical history of Canada which will be long and pleasantly remembered by our neighbors across the border. The fact that it was the first time in the history of the association that the annual meeting was held outside the British Isles gave rise to some forebodings as to its success. While the number of members registered was, as might naturally be expected, smaller than is usual, those who proposed bringing the association to this side of the Atlantic have reason to be highly gratified. The visitors from abroad will return home with enlarged ideas of the Greater Britain to which many of them were previously strangers. Montreal is one of the most beautifully situated cities of the British empire, and has from its foundation in 1642 been devoted to medicine. Paul de Chomedey, Sieur de Maisonneuve, brought in his company the devoted Jeanne Mance, head of the little community of nuns nominated by the founders of the colony to nurse the sick. She founded the Hôtel Dieu, the oldest hospital in America, which remains to this day the greatest Catholic hospital in Canada.

The opening ceremonies, which were preceded by a service and sermon in the English cathedral, were highly interesting, and demonstrated the fact that a hearty welcome greeted the association, as Lord Aberdeen, the governor-general, expressed it, from every citizen of the dominion. The addresses of the president, Dr. T. G. Roddick, of Montreal, Dr. William Osler, of Baltimore, and Mr. T. Mitchell Banks, of Liverpool, which we are enabled, through the courtesy of the *British Medical Journal*, to present in full to our readers, were worthy of the authors and of the occasion.

Everything possible was done to make the meeting memorable. All the most interesting features of the city with its crowning glory, Mount Royal, were made attractive to the visitors. The thoroughness and care which marked all the arrangements for the convenience and comfort of the members were a pleasing and notable feature of the gathering. The extensive list of entertainments left nothing to be desired from a social point of view.

In the president-elect, Sir Thomas Grainger Stewart, of Edinburgh, the association will have a presiding officer whose fame is world wide. Edinburgh was selected as the next place of meeting, and the scientific position of the city, to say nothing of its proverbial Scottish hospitality, indicates the wisdom of the selection.

Although the constitution of the association prevents any but British subjects from enjoying the privileges of membership, the American profession was well represented among the guests, and those who were thus honored expressed themselves as well pleased with the reception they received.

THE ANTITOXIN TREATMENT OF DIPHTHERIA.

THE claims that have been put forward as to the efficacy of the antitoxin in the treatment of diphtheria have not been successfully assailed from any quarter, and the affirmative evidence afforded by statistics on the largest scale and from the most diverse sources has not been in the slightest degree shaken. On the contrary, the evidence has steadily increased and the claims have been fortified. In the face of the facts it is difficult to understand the mental attitude of the small minority who are yet willing to antagonize a method of treatment that, according to almost universal testimony, has now proved its worth for more than three years, and whose employment has resulted in the saving of many lives and the sparing of many days of illness. To the wholly unprejudiced and impersonal reports of the two collective investigations instituted by the American Pediatric Society and the earlier report of the collective investigation of the Berlin Society for Internal Medicine, may now be added the report of one of the most exhaustive and elaborate statistical studies of the treatment of diphtheria with the antitoxin, recently issued by the medical superintendents of the hospitals of the London Metropolitan Asylums Board (*Lancet*, June 5, 1897).

According to this report, the total number of cases treated in the several hospitals under the control of the board during the year 1896 was 4,175, with 871 deaths, or a mortality of 20.8 per cent. Of the whole number received in 1896, 2,764 (71.3 per cent.) were treated with the antitoxin, with 717 deaths—a mortality of 25.9 per cent. In the year 1894, before the employment of the antitoxin had been instituted, there occurred among 3,042 cases 902 deaths (29.8 per cent.) —a saving thus of 8.8 per cent., or 365 lives. The antitoxin treatment was not resorted to in moribund or hopeless cases, or in those of doubtful nature, or so mild in character as to seem not to require any specific treatment. The best results of the treatment were obtained when it was instituted early, and the value of these results is strengthened by the fact that the proportion of the very young was much greater among those treated with the antitoxin than among those not so treated. Another evidence of the greater comparative severity of the cases in the antitoxin series is to be found in the fact that in this group the per-

centage of laryngeal cases was 17.6 per cent., as compared with 1.9 per cent. in the non-antitoxin series. A comparison between the age incidence and mortality of all cases of diphtheria treated in 1896 (whether by the antitoxin or not) and those of the cases treated by the board in 1894, not only shows that the total mortality was less by 8.8 per cent. in the year first named, but the difference is the more accentuated in accordance with the earliness of the period at which the cases came under observation.

It is interesting to note that clinical rather than bacteriological evidence was taken as the criterion in arriving at a diagnosis, and also that in only 4.5 per cent. did the latter fail to confirm the former. One of the most striking effects of the use of the antitoxin was observed in the diminution of severity induced in cases in which the larynx was involved. In 1894 the mortality in the hospitals of the Asylums Board was in laryngeal cases, 62 per cent.; in 1896 it was 29.6 per cent. In 1894 the mortality after tracheotomy was 70.4 per cent.; in 1896 it was 41 per cent., although in the latter year the proportion of laryngeal cases submitted to tracheotomy was 56, as compared with 41 in 1894. The proportion of cases in which albuminuria and paralysis respectively occurred was greater in 1896 than in 1894, but this discrepancy is to be explained by the increased attention paid to the detection of albuminuria, while the greater proportion of cases of paralysis is viewed as confirmatory evidence of the larger proportion of survivals from the initial dangers of the diphtheria virus.

The average dose of the antitoxin employed was two thousand units per injection, and the average number of injections 2.3 for each patient. Often this dose was considerably exceeded, and some cases received many injections. Untoward effects incidental to the injections were noted in only a small proportion of cases. Thus a rash was observed in 35.2 per cent., joint-pains in 6.5 per cent., pyrexia in 19.8 per cent., abscess in 1.2 per cent.

In a summing up of the results yielded by the clinical and statistical observations made in connection with this study, the advantages achieved in the cases of diphtheria treated during the year 1896 are stated to be: 1, A great reduction in the mortality of cases brought under treatment on the first three days of illness; 2, the lowering of the combined general mortality to a point below that of any former year; 3, the still more remarkable reduction in the mortality of the laryngeal cases; 4, the uniform improvement in the results of tracheotomy; and 5, the beneficial effect produced on the clinical course of the disease.

THE RELATION BETWEEN VACCINATION AND TUBERCULOSIS.

According to the Berlin correspondent of the *British Medical Journal*, July 3, 1897, the scientific committee for all matters relating to medicine and public hygiene has replied in the negative to the question asked by the medical department of the Prussian ministry of education—whether it is possible for vaccination to cause a tendency to tuberculosis and scrofula, and, if so, under what conditions. The committee takes the ground that since the discovery of the tubercle-bacillus as the cause of tuberculosis vaccination cannot be held responsible as a cause of that disease.

As to the allegation frequently made that vaccination produces a disposition to tuberculosis, it is often assumed that certain diseases, *e.g.*, diabetes, measles, whooping-cough, and debilitating diseases generally, cause such a predisposition. The question arises: Can the short, feverish attack produced by vaccination be included among these? It is to be remembered that tuberculosis is the most widespread disease known, so that of course a number of vaccinated persons must become its victims. There is, however, no evidence that would permit recognition and proof that in any case of tuberculosis or scrofula developing after vaccination the disease is a consequence of the prophylactic procedure, or that would go to show that an individual after vaccination is more predisposed to scrofula and tuberculosis than are unvaccinated persons.

Mortality statistics on a large scale also go to show that vaccination is not even indirectly a cause of tuberculosis. Tuberculosis is the most frequent cause of death, and if really increased by compulsory vaccination the mortality should have increased since the introduction of the latter. The reverse, however, is the case. In spite of strictly enforced revaccination, the mortality from tuberculosis in the Prussian army has diminished. It is possible that untoward complications of vaccination, such as erysipelas, may weaken the organism and lower its resisting power to the invasion of the tubercle-bacillus. Neither is it to be denied that when tubercle-bacilli have already found their way into the organism vaccination may be followed by their increase or spread.

A Useful Medical Society.—The McKean County (Pa.) Medical Association is a live organization, which is awake to the interests of the community and does all possible to protect it against injury by quacks. The society has recently had three advertising itinerants, who unwarily attempted to ply their trade in Bradford, arrested and driven from the place. This is an example worthy of imitation by other county societies in all States where an efficient medical-practice law exists.

Anthrax in Pennsylvania.—As the result of an investigation undertaken at the instance of the Pennsylvania State board of health, Dr. Leonard Pearson, State veterinarian, reports that the death of the four men in Jefferson County under dubious circumstances was due to anthrax, derived, it is believed, from the handling of infected hides imported from Asia. A number of cattle also have been affected. The hides in question had been treated with arsenic and they had been washed in a neighboring creek, and it was thought that the trouble might have been due to drinking the polluted water.

News of the Week.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending August 28, 1897. August 25th.—Assistant Surgeon W. M. Wheeler detached from the *Marietta* and ordered to the *Wheeling*, September 2d; Passed Assistant Surgeon G. Rothganger detached from the *Wheeling* and ordered to the *Marietta*, September 2d.

Italian Society of Laryngology, Otology, and Rhinology.—The third biennial meeting of this society will be held in Rome, commencing on October 28th. The subjects for the set discussions are: The value of autoscopy in the diagnosis and treatment of laryngeal affections; adenoid vegetations in Italy; physiology of the middle ear. The president of the association is Dr. V. Grazzi, and the secretary Dr. A. Fasano, of Naples.

A Tiny Midget.—From St. Louis comes the report of the birth of a child weighing one pound and measuring eight inches in length.

The Milk Supply of New York. — According to the report of the board of health for 1896, the number of cows which furnish milk for this city is 115,570. There are seven thousand places in the city where milk is sold both wholesale and retail. The system of granting permits to venders of milk, which went into effect at the commencement of the year 1896, has been found to be of great value. As a result of this, together with the application of the tuberculin test to milch cows, there is now a system of milk inspection which is as perfect as is possible at the present day and with the present force. The milk permits are in force during the pleasure of the board of health, which revokes them on the second trial and conviction for the sale of "adulterated milk," that phrase meaning milk containing more than eighty-eight per cent. of water or fluid and less than four per cent. of milk solids, or less than three per cent. of fat, milk drawn from animals fed on distillery waste, milk from which any part of the cream has been removed, and milk from cows kept in crowded or unhealthy places. In 1895, in the samples of milk which were tested, three hundred and ninety-three cases of adulteration were discovered, while last year the inspection and test showed only two hundred and thirty-three. The number of arrests in 1895 for selling adulterated milk was four hundred and eight; in 1896 there were only two hundred and twenty.

Efforts to Abate the Spitting-Nuisance in Jersey City.—The Jersey City board of health has passed an ordinance, making expectoration on the floors or platforms of trolley or horse cars or public conveyances of any kind punishable by the imposition of a $10 fine. The ordinance was recommended by the health inspector, and its passage was urged by many women, who complained that the filthy habit had frequently caused the destruction of their dresses.

Obituary Notes.—Dr. Benjamin R. Whitaker, of Phenixville, Pa., died at Philadelphia on August 18th, at the age of fifty-three years. He was a graduate of the medical department of the University of Pennsylvania, and served during the war of the rebellion as surgeon to the one hundred and fourth regiment, Pennsylvania volunteers, and during the riots of 1877 as surgeon to the Pennsylvania national guard. — Dr. De Witt Clinton Hough, of Rahway, N. J., died on August 25th, of paralysis. He was born in 1827 at Point Pleasant, Bucks County, Pa. He graduated at Jefferson Medical College in the class of 1847, and went to Rahway in 1857. He was for three years the chief surgeon in the seventh New Jersey volunteers, ranking as major. Dr. Hough was mayor of Rahway in 1867 and 1868, and also served in the legislature for three terms.—Dr. John R. Cabell, of Danville, Va., was assassinated on August 26th by one of his tenants, whom he had notified to give up the farm on which he lived on the ground of some irregular transactions. Dr. Cabell was a graduate of the medical department of the University of Virginia in 1850.—Dr. Walter McKenzie, of Nanuet, N. Y., committed suicide by taking morphine on August 26th. He was thirty-seven years of age, and was a graduate of Bellevue Hospital Medical College in this city.

International Congress of Legal Medicine.—The meeting of the International Congress of Legal Medicine, held at Brussels from August 2d to 7th, was a great success. The French government was represented by Professor Brouardel, dean of the Paris Medical Faculty, and by Drs. G. Pouchet, Motet, Mosny, Thoinot, Descoust, Vibert, Ogier, and Socquet; that of Sweden by Dr. Johan-Mauritz Aspelin, of Stockholm; the Swiss State council by Professor Gosse, of Geneva; the Spanish government by Dr. Enrique Simancas; and the Russian government by Prof. Demetrius von Kossorotoff, of St. Petersburg. The New York Society of Legal Medicine sent Dr. Valentine as a delegate. The meetings of the congress were attended by a large number of prominent members of the legal and medical professions and of the magistracy. Important discussions took place on criminal lunatics and public asylums, poisoning by carbonic oxide, professional secrecy in relation to the law, the medico-legal value of subserous ecchymoses, the glycogenic function of the liver in relation to medical evidence, cadaveric spasm, the internal factors of cadaveric decomposition, the lung test of life after birth, poisoning by sulphuretted hydrogen, the place and duty of the medical expert in relation to poisoning by meat, hypnotism in its relation to crime, and responsibility—particularly partial responsibility. The next meeting of the congress will be held in Paris in 1900.

British Medical Journal.

An Old Swindle Revived.—Some man is working a very successful swindle in the suburbs of this city, by means of a new application of an old trick. He pretends to be a physician from some other place, who has a sick servant needing hospital care. He calls on one of the attending staff of the hospital and gets

a letter of introduction to the matron. Armed with this he goes to the hospital and makes arrangements for the reception of the patient, paying in advance with a check which is larger than the amount required. The matron gives the change in money, and finds a few days later that the check is worthless.

The Sanitary Institute of Great Britain, the twenty-first anniversary of the formation of which was recently commemorated by a dinner in London, now numbers twenty-one hundred members and associates, and its annual income is more than £6,000.

Cholera is spreading in Bombay, many of the English troops stationed there having been attacked. In spite of the warning of the plague, the sanitary condition of the city is said to be most unsatisfactory.

The Medical Society of the County of Queens.—The midsummer quarterly meeting of this society was held at Long Beach, Long Island, on Tuesday afternoon of this week. The main subject for discussion was "The Diagnosis and Treatment of Fractures and Dislocations." Many medical men not members of the society were present, and the meeting was regarded as a very successful affair.

Texas Fever is reported to be spreading among the cattle in southwestern Iowa. The cattlemen have become greatly alarmed and have appealed for assistance to the State authorities.

Quarantine against Montreal.—The telegraph reports that the health board of Ottawa has established a quarantine against trains from Montreal, because of the small-pox in the latter city.

A Confidence Game which has been successfully played upon the ambitious physicians of a city in Nebraska is so simple and withal so certain in its results that we can commend it warmly to the God-fearing managers of all the hospitals in the country. The hospital was one of several in the city, and, the number of inhabitants not being unlimited, it suffered somewhat from the competition of unscrupulous rivals who underbid it and secured most of the wealthy sick. After three or four years of ups and downs the hospital was reorganized and a new medical staff was appointed. As soon as the new doctors were comfortably settled in their places and had become accustomed to their new titles, the members of the board of trustees called upon them personally, told them of the financial straits of their beloved institution, and intimated that it would have to close its doors unless more money was forthcoming. To avert such a calamity, which would fall so heavily on the suffering poor, each member of the new medical board drew his check for an amount which he thought would be sufficient to make him secure in his new place, and so the hospital expenses were met, and the trustees were encouraged to remodel one of the buildings. The first of this year a number of these guileless medical men, constituting a majority of the attending staff, received notices from the board of trustees that their services were no longer required, a new staff having been appointed. The checks of the new appointees will soon be called for, and we would suggest to them that, if they desire to continue their charitable labors longer than a twelvemonth, they had better signify their intention of making an annual contribution to the good cause.

Punishment of a Clerical Medical Practitioner.—The right of a clergyman to attempt to heal by prayer and the laying on of hands has been questioned in New Orleans, where a Catholic priest has been prosecuted for a violation of the State medical-practice law and of a city ordinance relative to clairvoyants, unlicensed practitioners, and the like. The clergyman, while willing to pray over those who desired his services, did not pretend to be able to cure disease and did not demand any payment for his services, although accepting such small sums as his callers chose to give him. The charge of violating the State law was dismissed, but a fine of twenty-five dollars was imposed for violation of the city ordinance.

A New Narcotic.—It is reported that the physicians in the Mexico insane asylum have discovered that the seeds of the sapodilla furnish a reliable narcotic which produces a quiet sleep followed by no unpleasant after-effects.

The Canadian Medical Association.—The thirtieth annual meeting of this society was held in Montreal on Monday, August 30th. On account of the meeting of the British Medical Association the following day, it had been decided that no scientific papers would be read, and the meeting was held only for the transaction of the necessary executive business. The president of the association, Dr. V. H. Moore, of Brockville, delivered the annual address. After thanking the members of the society for the honor of an election to the highest office in their gift, he addressed a few words of greeting to the members of the British Medical Association who had come into the meeting, and also to the numerous American physicians who were present. Medical men in the United States, he said, "are industrious, persevering, and energetic, quick to see, ready to adopt, and eager to carry out any and all improvements and discoveries to a successful or final issue; hence it is not surprising that they have made such progress." He then took up the main portion of the address, which was devoted to the condition of medical and other branches of education in Canada at the present day. In closing he again welcomed the members of the British Medical Association on behalf of the medical profession of Canada, and he said that the citizens of Montreal, who are so noted for their hospitality, and indeed all Canadians, would do their utmost to make the stay of their brethren in the country as pleasant and as profitable as possible. The election of officers resulted in the choice of the following: *President*, Dr. J. M. Beausoleil, Quebec; *Vice-Presidents*—Drs. A. McPhedraw, Toronto; C. S. Parke, Quebec; R. A. McKean, Glace Bay; P. R. Tuch, St. John, R. McNeil, Stanley Bridge, J. R. Jones, Winnipeg; F. C. McWheen, Lethbridge; and J. Tunstall, Vancouver; *General Secretary*, Dr. F. N. G. Starr, Toronto; *Treasurer*, Dr. H. B. Small, Ottawa.

Society Reports.

TWELFTH INTERNATIONAL MEDICAL CONGRESS.

Held in Moscow, August 19, 20, 21, 22, 23, 24, 25, and 26, 1897.

(Special Report by Direct U. S. Cable to the Medical Record.)

GENERAL SESSIONS.

(Continued from page 317.)

Third Day—Thursday, August 26th.

THE third and closing general session of the Moscow congress was held on Thursday afternoon, under the presidency of Sir William MacCormac, of London. The attendance, as is usual in gatherings of this kind, was much smaller at this session than at the opening one, though larger than at the intermediate session on Sunday afternoon.

The Cell Nucleus.—PROFESSOR LUKIANOV, of St. Petersburg, was the first orator of the day. His address was devoted to a consideration of the effect of inanition upon the nucleus of the cell and to the conclusions derived from the results of this study as to the functions and importance of the nucleus. Cellular morphology, he claimed, is the most important of biological studies, surpassing all other studies as regards the information which it gives us concerning the processes of life. This is true even as regards unicellular organisms, but more especially so when we study the morphology of the cell in multicellular beings. In many respects bacteria are analogous to cell nuclei, especially as concerns the changes which they undergo as a result of inanition. In the course of a long series of experiments conducted in the orator's laboratory, it had been discovered that bacteria lose fifty-one per cent. of their substance during the first six days that they are deprived of necessary sustenance, but then attain an equilibrium which is maintained practically unchanged during from forty to eighty days of further culture. In the same way it has been found that, when an animal is suffering from inanition, the nuclei of its cells lose more than one-half of their substance without undergoing degeneration. In rabbits which had been starved for a certain period, the loss in weight was thirty-five per cent., the size of the pancreas was reduced three per cent., the cells were diminished in size about thirteen per cent., but there was no change visible in the structure of the nuclei. From this the speaker concluded that the nuclei are independent of the cell body. If, however, the nucleus is autonomous, it must necessarily have a composite structure. That it has a selective action of its own has been proved by a number of experiments in feeding animals with different substances. Animals were fed exclusively on lard, or sugar, or peptone, or albumin, or hay, and it was found that the nuclei varied in size according to the kind of nutriment employed. The nuclei also multiply differently according to the nature and amount of the nutritive material supplied to them. But this multiplication or reproduction of the cell nucleus occurs entirely independently of the cell body. The cell is therefore not an elementary body. This, Professor Lukianov ventured to believe, is a new truth, an end-of-the-century discovery which will serve as a basis for the working out of many biological problems during the years of the twentieth century which is about to dawn, and which we have every justification for believing will be so productive of knowledge and of advance in every department of science.

The Present Modes of Treating Consumptives and their State Control.—PROFESSOR E. V. LEYDEN, of Berlin, said that he had no apology to offer for selecting such a well-worn subject, for the misery in the world caused by pulmonary tuberculosis is so great that until we have solved the problem we can never tire of discussing the means of its prevention. He proposed to discuss especially the institutional treatment of consumption and see in what way its benefits may be extended to the poor, who at present are almost wholly debarred from participation in them.

The ancient belief in the incurability of pulmonary tuberculosis was thrown down by Brehmer in 1855, when he established his famous sanatorium in Görbersdorf and began to restore to society pulmonary invalids who had been condemned to death by physicians and friends. The elements of this method of cure are: the choice of a healthful climate, abundant nourishment, fresh air, hardening of the body and systematic exercises, rest and passive movements, psychotherapy and discipline of the patient, and lastly the use of drugs in certain cases.

But before considering these points in detail the speaker would dwell briefly on the prophylaxis of tuberculosis. Assuming as proven that tuberculosis is a contagious disease and that the agent of infection is Koch's bacillus, he said that contagion may be direct, indirect, or from animals. Direct contagion is usually easily followed, but the path of indirect contagion by means of dust, infected vessels, clothing, or other objects of various kinds, is often most obscure. Infection from animals through milk, butter, and meat is, he held, much more frequent than physicians and the public are apt to believe. He laid but little stress on heredity, for he believed that in most cases the disease was transmitted to children by contagion from their parents, and not by inheritance. Our preventive measures are conducted along two lines: the prevention of infection, and the strengthening of the body to resist the attacks of the pathogenic agent. The latter can be effected by bringing up children with Spartan severity and by shunning every approach to coddling. It is along this path that we may hope for success, for the attempt to avoid the agent of contagion must necessarily fail and will result only in causing a bacillophobia that is unworthy of a rational people. The public is justly suspicious of attempts of the sanitary authorities to suppress this disease. Certain precautionary measures, such as the destruction of sputa and the avoidance of intimate association of the sick with the well, are of course necessary, but they should be carried out otherwise than by the power of the police. In this connection the speaker took up the question of the alleged danger of sanatoria for consumptives, and denied with emphasis that any such existed in a properly conducted institution.

The medicinal treatment, he said, may be considered under three heads, viz., pharmacological products, opotherapy, and orrhotherapy. While admitting the efficacy of certain drugs of the creosote order, he denied that they had any specific action. Opotherapy with "pulmonin" he dismissed with a word of contempt. He then took up the history of tuberculin and other serum products, and said that they are all as yet only on trial and their actual therapeutic value remains to be proven. There is, however, a very present danger that, in looking forward to ultimate success by this means, we come to value less highly the very efficacious means we have at hand in the institutional treatment of consumption, that is, the hygienic and dietetic therapy of the disease.

Taking up the several points in this treatment, he spoke first of climate. Great faith has for a long time been placed upon a change of climate for the phthisical, especially a change to an elevated region where consumption is seldom encountered among the natives. While valuing highly the climatic advantages

of high altitudes, the speaker warned his hearers that there is no actual immunity against tuberculosis in these regions, and we cannot depend upon any climate as in itself directly curative of this disease. Neither are the hills the only regions where benefit may be obtained, for the seashore and southern climates are equally efficacious in many cases. The chief disadvantage of a warm climate is that it unfits the sufferer for a life in his northern home after the cure of his tuberculosis. The speaker quoted Dr. Knopf, of New York, who disbelieves in the specific action of any particular climate and recommends that sanatoria be established within easy distance of the large centres of population.

The assumed specific action of fresh air in tuberculosis is also one of the myths of medicine. It has no such action, but its value is a purely hygienic one, since it aids greatly in strengthening the organism and rendering it more resistant to the attacks of the pathogenic organisms. The air should be pure, as free as possible from dust, not liable to great and sudden changes of temperature, and the place should be free from violent storms.

Of great importance is the nourishment of the phthisical. The time has long passed when men treated consumption as they did other pyretic affections, by a low diet. Experience has shown that the more food the consumptive takes and digests the better are his chances of recovery. Formerly great stress was laid upon the consumption of large quantities of fats, cod-liver oil, cream, and the like, and also upon the taking of a plentiful supply of alcohol. The latter is now given in much smaller quantity, for it is neither a suitable food nor a destroyer of the pathogenic germ. It is useful to cheer the patient and to stimulate his appetite, but in no other way, and it may be harmful by favoring hæmoptysis. We do not even place as much reliance on fats and milk as in former times, but we accommodate the diet to the needs and the taste of the patient, taking care only to see that it is so composed as to furnish calories enough to more than compensate for the daily loss.

The value of psychotherapy in tuberculosis must not be underestimated. The patient should be encouraged to hope for a cure and should be taken into the physician's confidence to the extent that he may understand the object of each of the measures adopted, so that he may be able to further their good effect by his own co-operation and may be inspired with confidence in the methods employed. The discipline of the institution, however, should not be too strict, but the patients should be allowed all liberty that is consistent with the proper execution of the hygienic and dietetic rules.

Finally, v. Leyden said, we have to consider the hardening process, and he had reserved the discussion of this for the last in order emphasize its importance. This is the point in the hygienic and dietetic method which in a measure marks its superiority over the specific treatment. The latter combats the pathogenic agents and its success is assured only when it has completely and permanently destroyed the tubercle bacilli so as to secure a lasting immunity for the organism. The hardening process, however, so strengthens the diseased body that it acquires sufficient resisting power not only to tolerate the disease but to overpower it, and so gain a complete and enduring victory over it. Among the measures by which this is effected are a life in the open air, living in airy apartments, and sleeping with open windows. Hydrotherapy is another powerful agent in this process, and consists in cold sponging, showers, and short cold plunges. Further exercises in the open air are necessary, such as methodically prescribed hill climbing, similar to Oertel's "Terraincur," and various sports—riding, rowing, golf, and the like. Overheating is, however, to be avoided, as it may cause bronchitis or even hæmoptysis. The rest cure is suitable only for very weak patients, whom we should endeavor to strengthen as rapidly as possible and then subject them to a graduated hardening process.

It has been asked whether similar results cannot be obtained by following out all the prescriptions of diet, exercise, etc., outside of an institution, and in reply the speaker said they could, though with much greater difficulty. In some cases the patient has such a repugnance to institution life that it is necessary to give him outside treatment. Sometimes, however, this repugnance can be overcome by firmness on the part of the physician, and once the patient has made a trial of the sanatorium he is generally satisfied to remain.

Naturally, however, the benefits of this treatment can be enjoyed by only a few whose means will permit, and the thousands and thousands of the poor are debarred from the privileges; but if the combat against tuberculosis is to become general we must bring the benefits of the institution treatment within reach of the poorest by the establishment of special sanatoria for the people.

Much interest has of late been aroused in Germany in what has been called the "sanatorium movement." This movement dates from about ten years back, being stimulated by the discussion of the question of the isolation of consumptives. The idea of forcible segregation of the tuberculous was happily abandoned as being only apparently humane and really inhuman in its consequences, but it resulted in the determination to establish public sanatoria where the poor could receive the same care as the well-to-do in private institutions. At present there are in Germany twenty sanatoria in course of construction or already in working order. Almost all of the old-established sanatoria now have annexes of more modest character, where those of small means can be treated, and many of the large cities of Germany have undertaken the establishment of hospitals for consumptives.

The speaker then referred to what had been done in this direction in other lands, notably in England, where the Royal Hospital for Diseases of the Chest was established in 1814 and the Brompton Hospital in 1841. He mentioned also various sanatoria in the United States, France, Austria, and Russia, where much is being done. v. Leyden himself had devoted much time and labor to the extension of this sanatorium movement. In 1894 he delivered a public address, before the International Hygienic Congress at Budapest, on "The Care of the Tuberculous by the Large Cities," and a year later read a paper on "The Necessity of the Establishment of Public Sanatoria for Sufferers from Pulmonary Disease" at a meeting of the National Public Health Association. After detailing the plans of the Berlin-Brandenburger Heilstätten-Verein, established for the purpose of erecting free sanatoria for consumptives, which has already made satisfactory progress, the speaker closed with the hope that soon all the countries of the civilized world would be dotted with hospitals for consumptives which might serve as worthy monuments to the memory of the philanthropists of the nineteenth century.

New Horizons in Psychiatry.—Prof. Cesare Lombroso, of Turin, was the last orator. When he stepped forward on the platform he was received with long-continued and repeated rounds of applause, just as his name was cheered to the echo when it was read, on the first day of the congress, among those of the national presidents. The doctrine of criminal anthropology, of which the Turin professor is the most distinguished apostle, numbers many of its most enthusiastic and active supporters among Russian men

of science. In the introduction to his subject the speaker said that by the term "new horizons" he meant new applications of the science of psychiatry, namely, the application of the facts of this branch of learning to a study of abnormal man, of the criminal and degenerate. All new sciences meet with great opposition at first, and it is best that they should. This new science had not escaped the usual fate; it had even been denied the distinction of being a science. But there is, the speaker maintained, much true, earnest, scientific work being done in it. The tendency of the science is not to undermine the penal code, as some legislators have imagined, but its aim is solely to protect diseased humanity; it is to turn society from its cherished system of vengeance for wrongs done to it by irresponsible beings, to a policy of correction and of prevention of crime. Unfortunately, and this is a fact which has been used by opponents to discredit the science of criminal anthropology, pathology is of little or no help in the study. But there is the same drawback in the study of many nervous diseases, for in perhaps the majority of them, the so-called functional nervous diseases, there are no definite lesions discoverable with the aids at our command. There is hope, however, for the future in the new theory of the neuron. In this theory of independent movements of the neurons we find a very satisfactory explanation of the phenomena of sleep, of hypnotism, and of memory. The fact that in dealing with supposed psychical states we are dealing with pure hypotheses is one that tends to discourage observation, but it should not. We ought to study carefully all modifications of the psychical state, for the discoveries which this may lead us to are incalculable in their importance. An explanation of telepathy or mental influence acting at a distance is possibly to be found in a polarization of the molecular elements of the brain substance. This science, this study of psychiatry, which has been but begun in the nineteenth century, will be handed down as a legacy to the twentieth, and the development which it may attain and the benefits to the human race which may flow from its discoveries are beyond our powers to foresee—indeed, beyond even the powers of imagination.

First Award of the Moscow Prize.—Professor Virchow then proposed, amid universal expressions of approbation, that the first Moscow prize, established by the municipality of Moscow and to be awarded at each recurring international congress, be bestowed upon Henri Dunant, the founder of the Red Cross Society, in recognition of his inestimable services to humanity. This proposal was accepted with acclamation and prolonged cheers.

A telegram was then sent to the Tsar, informing him of the close of the twelfth international congress, and thanking him for his liberality which had made this meeting possible.

Professor Virchow then rose again, and in eloquent words thanked Professor Sklifosovsky on behalf of the members of the congress for the cordial reception which had been accorded them, and he assured the president and all his colleagues, to whose untiring efforts the success of the meeting was due, that never would the foreign congressists forget that Russian hospitality, of which they had so often heard and which now they had had the opportunity to experience in their own persons.

Professor Sklifosovsky replied with tears in his eyes, and then turning to his brethren on the committee, addressed them in Russian, saying that it was to them the thanks were due. His part had been a feeble one, though he had performed it to the best of his powers. But the main part of the labor had been theirs, and if any praise were due for what had been done it was to them that it must be accorded.

Sir William MacCormac followed with a brief address of thanks on behalf of his English-speaking colleagues.

Professor Sklifosovsky then declared the congress adjourned, and wished all present *au revoir à Paris!*

(To be continued.)

BRITISH MEDICAL ASSOCIATION.

Sixty-Fifth Annual Meeting, Held at Montreal, Canada, August 31, September 1, 2, 3, 1897.

Special Correspondence of the MEDICAL RECORD.

GENERAL SESSIONS.

First Day—Tuesday, August 31st.

Dr. T. G. Roddick, M.P., president of the association, was called to the chair at 3 P.M.

Addresses of Welcome.—Mr. Wilson Smith, mayor of the city of Montreal, expressed a hearty welcome in the name of the metropolitan city of Canada to the members and guests of the British Medical Association. He alluded to the pleasure the citizens felt when Montreal had been selected as the meeting-place. It seemed to him peculiarly appropriate that in this great year, when the jubilee of Queen Victoria's reign had been so enthusiastically honored by the colonies of Great Britain, such an opportunity should be afforded the members of the medical profession to become acquainted with the Greater Britain. He trusted the members of the association would, by visiting the different parts of Canada, become much and favorably impressed with the resources of the dominion, in order that they might carry back to the people unto whom it was their pleasure to minister a true and intelligent account of the magnitude of this part of the British empire. He wished them to know for themselves that this was not a land of ice and snow, but a dominion of great natural resources and with a climate second to none in the world.

His Honor, the lieutenant governor of the Province of Quebec, Sir Adolphe Chapleau, said he was a Britisher at heart, and on behalf of the province he cordially welcomed the association to Quebec. The legislative grant toward defraying some of the expenses of the meeting was only an outcome of the hospitality which was a distinguishing characteristic of the two great races which occupied the province. In this auspicious jubilee year, the meeting being held outside the British Isles was a great and good omen of the coming closer union between the motherland and her colonies. He eloquently reviewed the history of the association, and paid a eulogistic tribute to the scientific work it had accomplished. In conclusion, he assured the members of the association that while they sojourned within the borders of the province they were to be partakers in that freedom which was the great cornerstone on which the hopes and aspirations of true Canadians rested.

The Earl of Aberdeen, governor-general of Canada, said his was the third speech, so the association might consider itself thrice welcome. He indorsed all that had previously been expressed in welcoming the members and guests of the association to Canada.

Dr. J. G. Adami, of Montreal, then introduced the accredited delegates to the association.

President's Address.—Dr. T. G. Roddick then delivered the president's address (see page 325).

Lord Lister moved a vote of thanks to Dr. Roddick for his valuable and eloquent address.

Sir James Grant, of Ottawa, in seconding the resolution, expressed the pride and gratification which all Canadians felt at the visit of the association to the dominion. They were also pleased to see the visitors

from the other side of the line. They were one people, the only difference being that the progenitors of their American friends landed on Plymouth Rock, while the progenitors of the Canadians paddled up the St. Lawrence in order that they might enjoy under the British flag the principles of civil and religious liberty. He made a graceful allusion to the presence of Professor Richet, and congratulated Dr. Roddick on his address. With respect to the question of interprovincial registration, or a central examining board, he was sure the time was not far distant when an agreement would be arrived at.

Dr. Saundby briefly expressed the obligations of the association to the governor-general, Lieutenant-Governor Chapleau, and the mayor for their presence.

The meeting then adjourned.

In the evening a soirée was held at Laval University.

The Work of Pasteur and the Modern Conception of Medicine.—Prof. Charles Richet, of Paris, the delegate of the French government and of the Faculty of Medicine of Paris to the association, addressed the company on this subject. He first gave a sketch of the life of Pasteur, and then reviewed briefly his work and its influence on the doctrines of the microbic theory of disease, of antiseptic surgery, and of orrhotherapy.

At the conclusion of this address there followed a reception by the Earl of Aberdeen, the governor-general of the dominion.

Second Day—Wednesday, September 1st.

The chair was taken at 3 P.M. by the president, Dr. T. G. Roddick, M.P.

The address in medicine was delivered by Dr. William Osler, of Baltimore (see page 333).

Dr. Stephen Mackenzie, of London, moved, and Dr. A. Jacobi, of New York, seconded a vote of thanks to Dr. Osler.

At the conclusion of the address a special session of convocation of McGill University was held, the chancellor, the Right Honorable Lord Strathcona and Mount Royal presiding. The honorary degree of LL.D. was conferred in due form upon the following distinguished members of the profession now in attendance at the association meeting: Lord Lister, Sir W. Turner, and Messrs. Broadbent, Gaskill, McAllister, Watson Cheyne, Henry Barnes, and A. G. Wheelhouse.

The meeting adjourned after formal announcements had been made.

A reception was tendered to the members and guests of the association on Wednesday evening by Lord Strathcona and Mount Royal.

SECTION IN SURGERY.

First Day—Wednesday, September 1st.

The Teaching of Surgery.—Mr. Christopher Heath, F.R.C.S., of London, chairman of the section, delivered the annual address. After a brief introduction, he referred to the two subjects which were to be discussed at this meeting, viz., (1) Appendicitis and its surgical treatment, and (2) the treatment of cancer of the rectum, with special reference to the high operation, and then continued:

"Nothing, I venture to think, is more remarkable than the recent progress of abdominal surgery. Twelve years ago I was engaged in editing a 'Dictionary of Practical Surgery,' and neither appendicitis nor the operation for removal of the rectum, with which Kraske's name is connected, was mentioned in it, although I had the assistance of the leading London hospital surgeons. Kraske's original paper, I may mention, was published in 1885, and is referred to in Ball's work on the rectum, published in 1887, and in most surgical works since that date. The subject of appendicitis, so far as British surgery goes, dates from a paper read before the Royal Medical and Chirurgical Society in February, 1888, by Mr. Frederick Treves, though the title of it was 'Relapsing Typhlitis treated by Operation.' In August of the same year Mr. Treves opened a discussion on 'Surgical Treatment of Typhlitis,' at the meeting of the British Medical Association at Leeds, and subsequently published his address with additions and alterations in the form of a monograph, entitled 'The Surgical Treatment of Perityphlitis.' I do not know to whom we are indebted for the hybrid term 'appendicitis,' but it did not appear in the index to the *British Medical Journal* before 1891.

"But it is not merely in these two departments that progress has been made. The surgery of the kidney and of the liver has advanced *pari passu* with that of the hollow viscera, and the labors of Morris and Robson in England, and of Keen and others on this side of the Atlantic, have done much for the relief of suffering and the prolongation of life.

"Looking back over forty years of professional life, nothing surprises me more than the change which has come over the treatment of calculus. In my student days, to see Fergusson cut for stone by the lateral method was to witness an operation as near perfection as was conceivable, and the dexterity and rapidity with which the calculus was extracted were marred only by the frequency with which death from septic causes spoiled the skill of the surgeon. To have one's first lithotomy was an event in the life of the young surgeon, and every now and then a reputation was spoiled by some *contretemps* in the public performance of the operation. Later, I was the frequent witness of my colleague Henry Thompson's skill in using the lithotrite to break up the calculus in a series of 'sittings.' Then came 'litholapaxy,' or rapid lithotrity, which we owe to Bigelow, the great American surgeon; and, lastly, that recurrence to the old high or suprapubic operation which was due to the Scandinavian surgeon Petersen. Hence the student of to-day rarely if ever sees a perineal lithotomy, and as a consequence his interest in the anatomy of the parts concerned in the operation has greatly diminished. Possibly the surgeons of the last generation laid too much stress upon anatomical details, but it is somewhat remarkable to find how little anatomy seems to serve for practice in the present day.

"I am told by those who are teaching anatomy now that it is difficult to get the student to take the trouble to make a neat dissection, because he can find in the various museums, and notably at the College of Surgeons of England, such beautiful preparations in spirit that he prefers to study from them or from pictures rather than labor to get out the details for himself. If this is so I can only regret that the present race of students is so short-sighted, for without a working knowledge of human anatomy I can conceive of no progress in surgery.

"But I regret to find that, in Great Britain at least, the teaching of anatomy is gradually getting more and more into the hands of professors who are anatomists but not surgeons, and that their tendency is to lay stress upon transcendental details rather than surgical relations. When these gentlemen happen to become examiners this tendency to specialize becomes very marked, and, as this applies equally to the teachers of physiology and chemistry, the unfortunate medical student becomes the victim of science (falsely so called), and sometimes develops into that marvellous being, a London B.Sc.

"But seriously, are we not overdoing the scientific

teaching of the man who has after all to get his living as a practitioner of medicine, surgery, and midwifery? When the medical curriculum was lengthened by a year, it was hoped that the additional time would be devoted to clinical work; but I fear that this is by no means always the case, for it is not uncommon for the student to take three years in passing his primary examinations, with the result that but two remain for the study of medicine and surgery. When I became a student of medicine I took to heart the advice of my teacher of physiology, William Bowman, and never allowed a day to pass without visiting the hospital; and though as a lad of sixteen I failed of course to appreciate the importance of all that I saw, yet I saw it, and I can carry my mind back now to cases seen and lessons learned in the early fifties which are of service to me at the present time. But the student is practically forbidden to enter the wards now until he has satisfied the examiners in anatomy and physiology, which he may or may not do in two years, and then there are but three years left for him to study *totam rem medicam*.

"Far be it from me to decry the modern methods of teaching medicine in the wards of our hospitals. I believe that the care taken to induct every student into the mysteries of auscultation and percussion are beyond praise; and if with some teachers treatment is regarded as of secondary importance, at least the student has the opportunity of studying the *vis medicatrix naturæ* untrammelled under one teacher, and of watching the effects of every new drug upon the human system under another. But all this takes time, and so also the elaborate manipulations of the gynæcological department, the researches of the pathological professor, and all the other teachings of the third and fourth years. And where, then, does surgery come in? Why, I consider myself fortunate if I can secure the regular attendance of candidates for a surgical diploma for the last three months, when their names are put on my list, and I subject them to rigid surgical cross-examination. But if I venture to refer to an illustrative case of last year, I find that no one present saw it or even heard of it, though at the time the whole surgical staff may have been in consultation upon it. How, I ask, is it possible for the student to see the serious surgical ailments which are not very common, such as aneurism, tumors of bone, tetanus, etc., if his attendance in the surgical wards is limited to a few months?

"And yet there has never been a time of greater activity in operative surgery, not only among hospital surgeons, but among general practitioners, who, thanks to anæsthetics and antiseptics, undertake operations of a magnitude which the hospital surgeon of the last generation would have hardly attempted. How are we to explain the apparent contradiction? In the first place, I am afraid we must allow that a great many mistakes in diagnosis are made, or, rather, that too often no attempt at diagnosis is made, but that an operation is undertaken to 'clear up the case.' That it generally does no doubt, but not always to the benefit of the patient. Then we must allow that, with unlimited time for the anæsthetic, the least skilful surgeon may hope to bring an operation to a conclusion more or less satisfactory to himself, and, if he operates under fairly favorable circumstances, for his patient also. Lastly comes the enormously increased opportunity for the publication of a success at one of the numerous mutual admiration societies and in one of the medical journals of the day. Can we wonder, then, that young surgeons whose stock in trade of professional knowledge is of the smallest, blossom rapidly into operating surgeons in some special department, and try not unsuccessfully to prove that all is fish which comes to their net?

"Still, gentlemen, the great foundations of the art and science of surgery remain undisturbed. Without a knowledge of anatomy, of pathology, and histology progress in surgery is impossible, and it is for those who hold the important positions of teachers in our great medical schools to insist upon a foundation of scientific and practical training being given to our students if they are to become the successful practitioners of the future. The growing tendency of the non-medical teachers of collateral science to regard their particular subject as the one most essential for the medical student must be restrained, and the preliminary period of medical study must be cleared of many obstructions if the student is to have the necessary time to devote to the thorough study of those strictly medical subjects which will fit him to be a sound, practical and at the same time scientific physician and surgeon."

Discussion on Appendicitis. — A discussion then followed on appendicitis, led by DR. G. E. ARMSTRONG, of Montreal. It consisted of the report of 517 cases seen in the leading Montreal hospitals. It was found to be most common between the ages of twenty and thirty, and occurred twice as often in males as in females. Discussing the etiology of the question, the speaker said he could throw little light upon it, but he thought anything that removed the epithelial lining from the mucous membrane of the appendix, allowing germs to get in and do the work, was the starting-point in most cases. A stercoral ulcer might form, the healing of which caused contraction of the appendix and tended to prevent egress of material from it, and thus endangered the patient's life. The doctor handed around specimens of constrictured appendices for examination. In the total number of cases reported, the average mortality was 12.8 per cent.; but from 1853 to 1890, before operation was done—that is, in pre-operative days—the mortality was 23.8 per cent. Of the 517 cases, 389 were operated on and 128 treated without operation. In this latter list the mortality was 3.12. Of 319, 81 were interval cases, in which there was not one death. Of 305 operated on in the acute stage, 63 died. The great point in treatment was to anticipate the severer forms resulting in septic peritonitis. This, the essayist held, was accomplished by early surgical interference. Even fulminating attacks were preceded by mild attacks, in which the operation would be successful. The question when to operate was of great importance. There were two groups of cases: one, very mild, where the question scarcely arises; and the other, where there was a difference of opinion, and it was in this latter class that the judgment and experience of the surgeon were called into play to the fullest extent. Operation in the interval was safe. During the acute attack symptoms were unreliable. One must consider them all carefully, but the time did arise when only a bold surgeon would dare to wait and a cautious surgeon would dare to operate. The essayist said he had seen rapidly fatal cases follow too soon getting up, too early moving around after a mild attack, and he had seen one case of rupture follow a dose of castor oil. His rule was to advise operation at the end of twenty-four or thirty-six hours if the patient was not improving. In cases of general septic peritonitis, in which there was paresis of the walls of the intestine, he was in the habit of turning the whole intestine out of the cavity before returning any. In draining these cases he used three tubes—one in the pelvis and one in each loin. In treating the disease in the abscess stage, most experienced operators were opposed to breaking down adhesions and removing the appendix. The wisdom of that course might be questioned. He had got better results by removing the whole abscess as far as possible. If this was not done,

a secondary abscess might go undiscovered and lead to the loss of the patient's life. Thorough removal, too, of all pus, and breaking down material, lessened the chances of septic infections through the mesenteric veins and liver. In such cases he believed in surrounding the sides of the abscess very thoroughly with gauzes, sponges, etc.

Dr. Ward Cousins, of Southsea, England, in discussing Dr. Armstrong's paper on appendicitis, referred to it in very complimentary terms. He said very great care should be exercised as to the time of operation. The great question was when to operate. He did not rely on statistics, as each case must be treated individually. If symptoms are quiescent or subsiding, one should not operate. In such case the pain would be less severe, the temperature falls, the abdominal distention subsided, and the tenderness lessened. If the symptoms were increasing and very severe, operation was called for. Rapid pulse, anxious face, great distention, and induration or fluctuation would certainly indicate the necessity of operation. The induration did not, in his opinion, indicate the direction in which the appendix lies. Fulminating cases usually present all the symptoms of general peritonitis, but the disease is usually localized to the cæcum. In operating he preferred an oblique incision, as it gives a better view of the abdominal cavity and is closer to disease. He uses an electric light to enable him the better to examine the abscess, and never uses metal retractors. He prefers instead a couple of ligatures in either wall of the incision. When he reaches the abscess he drains out what pus will flow, and then wipes out the cavity. He never irrigates, and considers it imperative to be as gentle as possible in all manipulations. If the bowel is in the way, he wraps it carefully around with sponges and moves it aside. He does not use drainage tubes except when absolutely necessary, as he is afraid of them, and then usually only one large one in the groin. The surgeons of Great Britain were very chary of the surgical treatment of appendicitis. He felt that the American surgeons had stimulated them to earlier operation, and had helped them to overcome their tendency to procrastination.

Dr. Ball, of Dublin, said the number of cases of appendicitis in which he had operated could be expressed in two figures; that he had not operated so often as he might have done. Cases of this disease divided themselves into four classes. About three of them there was little difficulty. The first was where peritonitis suddenly occurred; the second embraced those in which abscess had definitely formed; and the third sort was where the patient led a miserable life by reason of repeated attacks, where operation in the interval was so safe. But it was in those cases of first attack, in which the symptoms did not enable us to form any accurate opinion as to what extent the disease had spread, that difficulty was met with. If a patient was not improving by the third day it was his rule to operate.

Dr. Jordan, of Birmingham, said that real appendicitis, strictly speaking, was a disease confined to the appendix, and when this was the case there were two sorts: First, those simple cases which got well; and second, those in which the appendix slowly distended with irritating fluid charged with organisms, which fluid made its way through into the peritoneal cavity and gave rise to other forms of the disease with complications. In such cases the physicians and surgeons should see the case together. Too much stress, he thought, had been laid on McBurney's point. Early diagnosis was very important.

Dr. Vander Veer, of Albany, N. Y., in discussing this question, said he thought that possibly the British surgeons might think the American surgeons were rather too eager to operate.

Dr. W. H. Hinckson, of Montreal, said that statistics could not be depended upon. He thought in no case should one operate to establish a diagnosis. The question of appendicitis was one that concerned the physician as well as the surgeon. They should go hand in hand in the study of the case. As far as possible he liked to get along without operation. He could call to mind at least twenty-seven cases in which he had recommended against operation, and all the subjects got well. He did not operate in more than one in ten, and he did not regret not having operated in the other nine. In one case referred to him, in which there had been three or four attacks induced apparently by overindulgence in cabbage, he recommended the patient to stop eating cabbage rather than submit to an operation. It was claimed that the operation was without danger. That was not the case. He had known instances of death to occur by reason of operation.

Ventral and Umbilical Hernia in the Same Patient was the title of a paper by Dr. A. E. Garrow of Montreal. He said cases of umbilical and epigastric hernia, having separate sacs but common coverings, for which radical cure was successfully carried out, are evidently rare, or at least not frequently recognized and reported. After carefully looking over the literature at his disposal he had found but one case reported within the last twelve years, namely, one by Ochner, of Chicago, in which radical cure was performed for a small supra-umbilical and a large umbilical hernia. Double umbilical herniæ, with separate sacs, and multiple ventral herniæ, the result of repeated laparotomies, are not uncommon at the present day. Marcy in his work on the "Anatomy and Surgical Treatment of Hernia" says of supra-umbilical hernia: "It is not rare to find examples of ventral hernia, in the middle line above the umbilicus; these, so far as I have had the means of observation, are small in size, oftentimes giving little or no discomfort; occasionally they interfere with the process of digestion, causing nausea, flatulency, and pain." In the case under consideration, the contents of the supra-umbilical protrusion consisted of large and small intestine, cæcum with appendix, and omentum, the latter being spread out so as to form a more or less complete sac; it was adherent, and could be reduced only with difficulty. The umbilical hernia, on the other hand, was small, sausage shaped, and contained but a single loop of small intestine, which was not adherent and was very readily reduced.

This case at least clearly supports the view that large irreducible herniæ may escape elsewhere than through the umbilical opening. Within the last two months I have had an opportunity of examining two cases of herniæ occurring in women past middle age in which the neck lay some distance above the umbilicus. The explanation of the few cases reported may be due to the impossibility of diagnosing such a condition previous to operation, and that surgeons are comparatively seldom called upon to give radical relief for hernia in this situation unless strangulation has occurred, because the subjects of such herniæ are usually well advanced in years, obese, frequently suffering from bronchial, renal, or cardiac disease; in short, poor patients for any operative interference, particularly a prolonged laparotomy. Besides, many of them are made comfortable by wearing some form of abdominal support. The danger in suitable cases in operating for such herniæ would not seem to be much greater than that entailed in a modern laparotomy, and the important lesson learned by the writer is that, since in such cases it is impossible to recognize the double protrusion before incision, after opening the main sac and replacing the contents within the abdominal cavity a careful search from within should

be made, to ascertain whether any other hernia exists before proceeding to remove the adipose tissue mapped out at the beginning of the operation.

W. J——, a colored female, aged forty-five, entered the Royal Victoria Hospital December 10, 1896, complaining of an abdominal tumor and asking for radical relief. Patient was married twenty-one years ago; within three years she had born three children. Some months after the birth of the third child a small lump made its appearance about one inch above the umbilicus; this lump gradually increased in size until three years ago, when it was about one-half its present dimensions, but since then it had grown rapidly. Excepting transient attacks of abdominal pain which she attributed to wind in the bowels, and some dragging-down pains, relieved by assuming the recumbent position, she had suffered but little until the last year. During the last twelve months, however, disturbances of digestion had been persistent; besides, the abdominal pains and dragging-down sensations already referred to had become much aggravated, and though benefited by rest in bed had never been entirely absent. Various abdominal pads and trusses were tried in turn, but utterly failed to give relief, in fact aggravated her symptom. Patient has had repeated attacks of what she called low fever at her home in Jamaica, also muscular rheumatism and sciatica. Examination showed a large tumor projecting from the mid-abdominal region, irregularly hemispherical, freely movable, soft and doughy in some parts but tense and elastic in others, irreducible, distinctly lobulated, somewhat tender to palpation, which elicited gurgling sounds. The note was tympanitic in some places, in others dull. The navel was at the lower left-hand side partially concealed by the overhanging mass, and the skin immediately surrounding it was superficially ulcerated, evidently from the friction of her clothes. The tissue above this part are very thin, so that the outline of the contents could be readily made out. Umbilical hernia was diagnosed because the neck of the protrusion seemed to occupy the umbilical opening.

The essayist then proceeded to describe the operation, which was performed on December 14, 1896. The incision was elliptical and was made over the most prominent part of the tumor. Much difficulty was experienced in separating the entangled structures contained in the tumors and its coats, and on raising the mass, which had been ligatured preparatory to removing it with the knife, a gurgling sound was heard, which led the operator to dissect toward the middle line with the result of finding that the mass consisted of two sacs. The peritoneum was found in both herniæ adherent to the surrounding fibrous rings and was dissected away from the margin a full inch. Each opening was then sutured in turn and separately, the skin wound closed, and the ordinary antiseptic dressing applied. The patient made a good recovery from the operation. She was kept in bed for seven weeks, all precautions being taken to keep the openings closed by strips of adhesive plaster drawing the skin from the opposite side of the abdomen. Photographs were then distributed showing the result six months later.

Traumatic Aneurism of the Internal Maxillar Treated by Ligature of the Common Carotid.—Dr. H. Langley Browne read a paper on this subject. James Pearsall, aged thirty-two, married, boatman by occupation, was admitted to the hospital at West Bromwich, March 12, 1897, suffering from a lacerated wound of the scalp, punctured wound of the right cheek, and concussion of the brain, his injuries arising from a kick of a horse. The patient was semi-conscious on admission and suffering from shock. He was bleeding profusely from the cheek, ear, nose, and scalp. The right side of the face was much swollen, the right eye was completely closed, and the swelling extended about half-way down the neck.

On examination the lower jaw was found fractured on the left side close to the symphysis, and on the right side through the neck of the jaw. Crepitus was also detected over the right malar bone. The temperature rose to 100.2° F. next evening, but then fell to normal, at which it remained till the 20th, when it registered 101.8° F. in the evening. The evening temperature continued to rise till on the 25th it stood at 104.6° F. The patient then took thirty minims of Warburg's tincture, and the temperature fell to 98.2° F.

During the next seven days the swelling slightly decreased, and on April 5th the temperature again rose to 101.2° F., and on the 9th fluctuation was detected in the neck. An incision was made in the neck and six ounces of pus evacuated. The patient was much relieved, the swelling did not quite subside, and on the 13th a copious hemorrhage from the incision in the neck took place. This was controlled and the wound stuffed with iodoform gauze. The swelling now increased, and on the 15th distinct pulsation was felt over the right cheek. On examining the mouth the soft palate was found greatly depressed on the right side and congested, and pulsation was easily felt.

On the 24th he had a slight hemorrhage from the mouth, and again on the 26th a copious hemorrhage took place from the mouth, and Dr. Browne then decided to ligate the carotid. This was done on the 26th, and the patient was easy and restful. On the 29th he passed fæces involuntarily, but since that time he has had perfect control. He was discharged cured on May 24th, and has since reported himself weekly at the hospital.

Intussusception of the Vermiform Appendix and Cæcum was the title of a paper by Theodore A. McGraw, of Detroit, Mich. The speaker reported the case of a boy, seven years old, who suffered from a form of intussusception which the speaker believed was unique and threw a light on the pathology of the affection. The salient points of the history, which up to the time of operation covered upward of four months, were as follows: An attack of cholera morbus was followed by only partial recovery, and for a period of some weeks attacks of diarrhœa and very severe pain occurring in paroxysms were the prominent symptoms. There was no fever during this period, and for a few days at a time the boy appeared to enjoy fair health. There was occasionally some traces of blood in the stools. The attacks of pain became more frequent and severe as time went on, until it was deemed advisable to make an exploratory incision. No tumor could be felt in the rectum nor in the iliac fossa. He referred his pain to the epigastric region. There was but little tenderness and no tympanitis. His tongue was clean and his appetite good. The day before the operation the temperature rose to 100.2° F. An exact diagnosis was impossible. Immediately on opening the peritoneal cavity the transverse colon presented itself intensely red, highly inflamed, and coated with lymph. The ascending colon had a meso-colon of such length that he was able to draw it and the cæcum with ease through the opening made above the navel. The cæcum and appendix were invaginated and made a tumor within the gut, which could be felt through the walls of the colon, about the size of a walnut. The ileum was not invaginated. The speaker then continued that he thought it better surgery to remove the invaginated portion rather than merely to replace it, as he felt the affected part would most likely return to the old condition; in other words, that the affection would be almost sure to recur. He therefore removed the diseased part completely and united carefully the cut edges with catgut sutures,

one for the mucous and one for the serous surfaces. The child made a splendid recovery. He had no more attacks of pain and gained in health.

The peculiar point of the case was the occurrence of the invagination at the extreme end of the cæcum, and not in its continuity or at the ileo-cæcal valve. In all other cases which had been reported the ileo-cæcal valve formed the apex of the tumor in the cæcum.

An Analysis of One Thousand Cases of Lateral Curvature of the Spine Treated by Posture and Exercise Exclusively (without Mechanical Supports.—Dr. Bernard Roth, Brighton, Eng., presented a paper on this subject. This paper relates to 1,000 consecutive cases of scoliosis which have been under the author's treatment in private practice from June 27, 1885, to November 24, 1892, and are subsequent to a series of 200 cases reported at the annual meeting of the British Medical Association in 1885. The whole of these 1,000 cases have been treated by the methods described in the author's book, "The Treatment of Lateral Curvature of the Spine," 1889. The author hopes by the publication of this series to convince a larger proportion of the medical profession of the superiority of, and the much more rapid results obtained by, his method at all stages and at all ages than by the old treatment of lateral curvature by spinal supports or other mechanical means.

Sex: The 1,000 cases consisted of 122 males and 878 females. Messrs. Bradford and Lovett in their "Orthopædic Surgery," 1890, have collected 2,340 cases, of which 363 were males and 1,979 females; that is, a percentage of 15.5 males to 84.5 females, which is to be compared with the author's percentages of 12.2 males to 87.8 females.

Age when brought to the author and age when the deformity of the spine was first noticed: The average age of the 1,000 cases is 12.32 years for the commencement of the deformity, and 15.65 years for the age at which they came under treatment; 897 cases (*i.e.*, 89.7 per cent.) commenced to develop lateral curvature between the ages of five and seventeen years, and more than half by 594 between the ages of ten and fifteen years.

Causes of lateral curvature of the spine: In 231 cases no assignable cause of the deformity could be found, while of the remaining 769 cases 297 were hereditary; 203 were due to rapid growth; 176 were described as delicate; 59 followed acute specific fevers, scarlet fever, whooping-cough, measles, typhoid fever, etc.; 41 were attributed to lung diseases; 27 were born in tropics; 24 had a neurotic origin; 14 were attributed to overstudy, violin playing, etc.; 11 were attributed to premature birth; 10 were attributed to eye affections; 8 were twins; 5 were children of elderly parents; 11 were attributed to miscellaneous causes (as being very tall, above 6 feet, 3 cases; to rickets, 2 cases, etc.).

The very small percentage of cases which were attributed to rickets is due to the fact that almost invariably patients came from the middle and wealthy classes and included no hospital patients.

Description of the different forms of the lateral curvature of the spine: The 1,000 cases divide readily in six classes:

(*a*) With whole convexity to left—523, or 52.3 per cent.

(*b*) With dorsal (upper) convexity to the right and lumbar (lower) convexity to the left—329, or 32.9 per cent.

(*c*) With whole convexity to right—72, or 7.2 per cent.

(*d*) With dorsal (upper) convexity to the left and lumbar (lower) convexity to the right—45 or 4.5 per cent.

(*e*) With triple curvature, highest and lowest curves being convex to the left and middle curve convex to the right—28, or 2.8 per cent.

(*f*) With triple curvature, highest and lowest curves being convex to the right and middle curve convex to the left—3, or 0.3 per cent.

Amount of osseous or incurable deformity of the ribs and vertebræ: If osseous deformity is present, to that extent the case is incurable and no patient has ever been exhibited at any recognized medical society with slight or severe osseous deformity before treatment and shown again after treatment with this osseous deformity corrected. The method of scoliosiometry which the author has employed for many years and which he first published in the *British Medical Journal* of October 27, 1888, is still the simplest and most rapid method of recording the degree of osseous deformity in lateral curvature. The amount or degree of osseous deformity is classified as extreme, severe, moderate, and a trace. If the ribs posteriorly and the erectores spinæ are perfectly symmetrical when the trunk is well flexed, absence of osseous deformity is diagnosed. Of the 523 cases of deformity (*a*) 117 cases had only moderate deformity of the lumbar vertebræ and 76 cases had a trace of osseous deformity of the left ribs posteriorly and moderate osseous deformity of the lumbar vertebræ. Of the 329 cases of deformity (*b*) 67 had moderate deformity of the right ribs posteriorly and of the lumbar vertebræ with convexity to the left. The 72 cases of deformity (*c*) had 14 with moderate osseous deformation of the right ribs posteriorly and of the lumbar vertebræ. The 45 cases of deformity (*d*) had 10 with moderate osseous deformity of the lumbar vertebræ; while the 28 cases of deformity (*e*) and 3 cases of deformity (*f*) all had more or less osseous deformation of the ribs posteriorly and of the lumbar vertebræ: of course when osseous deformity of the ribs posteriorly is indicated, osseous deformity of the dorsal vertebræ is implied. Only 79 cases out of the whole 1,000 were without definite osseous deformity.

Pain or backache; 476 cases, viz. 47.6 per cent., had more or less backache, including 11 with extreme pain, 230 with severe pain, 87 with moderate pain, and 148 with slight pain.

Flatfoot: The author was one of the first surgeons to point out the extremely frequent association of flatfoot with lateral curvature of the spine (see *British Medical Journal* of May 13, 1882). Out of these 1,000 cases, 565, viz., 56.5 per cent., had more or less well marked flatfoot, and 256 cases in addition had a trace of flatfoot which perhaps some surgeons would not accept as such.

Previous, *i.e.*, unsuccessful, treatment of the 1,000 cases: Omitting treatment by ordinary or special gymnastics, suspension by the head and the innumerable forms of shoulderstraps, etc., 202 cases had been treated by means of spinal supports, including 104 cases by steel supports and 98 by other forms of spinal supports. Of these many had worn supports for several years; thus 24 had worn them for 1 year, 25 for 2 years, 19 for 3 years, and so on, including cases in which spinal supports had been worn for 10, 11, 12, 16, 20, 25, and even 40 years.

Duration of the author's personal treatment: The average course consisted of three months' daily treatment or 72 visits; 634 cases underwent that amount. Early cases of lateral curvature with little or no osseous deformity of the vertebræ to the number of 265 made each from 24 to 48 daily visits; 28 adult male cases have been treated on 36 alternate days or by weekly visits. The remaining 73 cases, with 6 to 18 daily visits, and with 81 to 216 daily visits, have been exceptional patients, in whose cases the treatment has either been interrupted too soon or from intercurrent illness unduly prolonged.

Result of author's treatment: As osseous deformity of the vertebræ even to the slightest extent is to that extent incurable, the author has not ventured to label any case as "cured," although probably most surgeons would have employed that term instead of "much improved." By "much improved" the author describes the best possible result that he was able to prognosticate when the patient was first examined; that is, a strong and much straighter spine where the most improved posture possible has become a more or less habitual one, with disappearance of backache, with improvement in the general health where this has been failing, and finally with arrest of further increase of the osseous, *i.e.*, incurable deformity of the ribs and vertebræ. There were 869 cases much improved, and 75 cases improved. By "improved" the author distinguishes those cases in which arrest of the further increase of the osseous deformity has been effected, but in which pain has still persisted more or less or in which the patients have not held themselves so well as they ought to have done. Fifty-six cases were more or less failures, including 47 which were apparently successful at first but then relapsed, and 9 which were not improved from the very first. Most of these 5.6 per cent. failures have been due to want of intelligence or perseverance in the several patients. The most successful of the author's cases and those which gave least trouble were young men anxious to become officers in the army and who ran some risk of being rejected as physically unfit, and young women engaged to be married. Of the "much improved" and "improved" cases, 207 were confirmed by examination during the first three years following the completion of their treatment under the author's personal care. Some were reported as continuing straight and well ten years after.

Four hundred and twenty-nine cases were sent direct to the author by two hundred and two medical men, to whom he conveys his thanks.

(To be Continued.)

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, April 28, 1897.

JOHN SLADE ELY, M.D., PRESIDENT.

Disease of the Coronary Arteries with Red Infarction of Myocardium.—DR. JOHN H. LARKIN presented specimens taken from a woman, forty years of age, a chronic alcoholic, who had had several attacks of acute rheumatism. Four months ago she became lame and the ankles were much swollen, the breath was short, and there was slight and gradually increasing cough. She also complained of weakness, headache, and some gastric pain. Later there was a good deal of blood-tinged expectoration. Five weeks ago she entered the hospital. The heart was enlarged, and there was a systolic murmur at the apex and one at the base, with a systolic thrill. There were cough and profuse frothy expectoration. No tubercle bacilli were found in it. There was occasional vomiting for a week or two before death, but no elevation of temperature. The urine had a specific gravity of between 1.020 and 1.030, and contained a trace of albumin but no casts. At the autopsy the lungs showed brown induration, with multiple hemorrhagic infarcts. The liver was "nutmeg." The spleen contained fresh and old infarcts. The kidneys showed the lesions of chronic diffuse nephritis and also old infarcts. The coronary artery was occluded by an embolism. On the inner surface of the endocardium, both on the papillary muscle and on the mitral valve, were numerous vegetations, some of which could be seen hanging by thread-like processes. One of these vegetations was removed from the mitral valve, and also a small white thrombus from the coronary artery. Microscopical examination proved these to be identical in structure. At the apex of the right ventricle was a large globular thrombus filled with a milky fluid. Dr. Norris had made cultures from the thrombi, and also from the heart muscle, with negative result, even after several weeks. In the region supplied by the anterior coronary artery—the tip of the left ventricle and a portion of the right ventricle—was a distinct area of softening in the cardiac muscle. There was no interstitial myocarditis. The heart was otherwise fairly normal, except for the increase in size, due rather to dilatation of the left ventricle than to hypertrophy with dilatation. Sections of the cardiac muscle were exhibited under the microscope. They showed very well the large effusion of blood into the heart muscle, displacing the muscular fibres of the heart. There was also some compression atrophy of the heart muscle fibres in the immediate vicinity of the hemorrhage.

Atrophy of the Pancreas with Replacement by Fat.—Dr. Larkin then presented sections of the pancreas from a woman, fifty years of age, who had been admitted to Bellevue Hospital in November, 1896. She was addicted to the use of beer, tobacco, and morphine. She said that she had been well up to one month previous. Then she had chills and headache, followed by fever, thirst, and weakness. On admission there was slight cough, with dyspnœa on exertion. She passed large quantities of urine. The bowels were constipated and the appetite was fair. Thirst was marked, the mouth was dry, and the tongue cracked. The temperature was 103° F.; pulse, 112; respirations, 36. Physical examination showed the chest to be barrel shaped; there was diminished and prolonged low-pitched expiration, and a few subcrepitant râles were heard over the back. The size of the heart was normal, but its action was very irregular in force and frequency. No murmur could be heard. The liver was not palpable. The spleen was normal. The urine had a specific gravity of 1.012, and contained a trace of albumin and some granular casts. One drop of the urine gave a pronounced reaction with Fehling's test at one time, but not on other examinations. At the autopsy the brain was "wet," there was moderate atheroma of the arteries of the base, the anterior portion of the pia mater was lustreless. The heart was very pale and exceedingly fatty; there were no valvular lesions. The lungs were emphysematous and œdematous posteriorly at the base. The spleen was hard, large, and congested. There was a large nutmeg liver. The kidneys were of normal size, the cortex was pale, and the markings were fairly distinct. Connected with the left kidney was a tumor, the size of a small orange, containing a viscid fluid. At the edge of this tumor was a blood-vessel apparently connected with the renal artery. Cultures made from the viscid contents of the tumor proved negative as regards tubercle bacilli, etc. The pancreas measured transversely about two centimetres. It was much diminished in size, the greater portion of the pancreatic tissue being replaced by fat, which appeared as large yellowish areas shutting off little islands of pancreatic tissue. The small tumor was a telangiectatic sarcoma.

THE PRESIDENT said that Dr. Larkin, in speaking of the structure of the thrombus in the coronary artery being identical with that of the vegetation on the mitral valve, had expressed the opinion that the occluding mass was an embolus. To this he could hardly agree, as it seemed to him the mechanical difficulties would be enormous, owing to the course of the blood current and the peculiar manner in which the coronary arteries are given off behind the mitral valve and at right angles to the course of the blood in the aorta. On *a priori* grounds merely it seemed to him that em-

bolism of the coronary artery should be extremely rare. As to the occurrence of sudden death in disease and occlusion of the coronary artery, in his opinion it would make a very great difference which coronary artery was occluded as to whether or not sudden death occurred. Why should the heart suddenly stop beating simply because one of the branches of the coronary artery going to the apex had become occluded? An occlusion of the branch running upon the heart in the auriculo-ventricular ring might cause sudden death, because that is the situation of the intrinsic cardiac ganglia. It seemed, therefore, that for absolute and sudden stoppage of the heart, the determining factor, when there is no rupture, must be the degeneration, impairment, or cessation of the function of these intrinsic cardiac ganglia. Experiments apparently confirming this view had been published. On the other hand, if the circulation of the horizontal branch were left intact, stoppage of the branch going to the apex might occur without seriously affecting the intrinsic cardiac ganglia.

Dr. James Ewing said that last summer a man, forty or fifty years of age, had come under observation, who was addicted to the use of enormous amounts of morphine hypodermically. Shortly after one excessively large injection he died. The autopsy showed a well-developed adipose layer all over the body, and a large amount of perirenal and retroperitoneal fat. With some difficulty the pancreas was found in this mass of fat. On section it was found that the organ was the seat of fatty replacement. The remaining islands of pancreatic tissue were apparently normal.

The society then adjourned.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 28, 1897:

	Cases.	Deaths.
Tuberculosis	137	68
Typhoid fever	26	12
Scarlet fever	68	3
Cerebro-spinal meningitis	1	1
Measles	42	4
Diphtheria	124	18
Laryngeal diphtheria (croup)	3	2
Chicken-pox	1	—
Pertussis	6	4

The Baths at Harrogate.—At this well-known spa, in Yorkshire, England, probably the most magnificent baths in the world have just been completed. These erections cost $600,000, and were opened to the public on July 21st. In addition to an immense pump room, ladies and gentlemen's baths, winter garden, Turkish and Russian baths, is an inhalation room, containing a sulphur-water fountain, giving off a fine spray which is inhaled by the occupants of the apartment; there is also a "pulverization room," where medicated water can be applied to the throat, eyes, etc. Among the other varieties of baths may be mentioned several kind of douche, slipper, and needle baths.

Microbe Ragout. — Parisians have been greatly alarmed by learning through the daily press that a robbery had taken place at the Aubervilliers Hospital, which is specially devoted to contagious diseases. A number of rabbits inoculated for some researches of M. Roger have been stolen, and they had been inoculated with diphtheria, tetanus, typhus, cholera, etc. As it is probable that the thieves sold the rabbits to dealers, every one who supped off rabbit that evening is consumed with a horrible fear of having caught some infection. Interviews with Dr. Roux and other authorities have been published and instructions have been given to the octroi officials to stop the entry of such rabbits, their carcasses being easily recognized by having been shaved for the purpose of inoculation.

The Dangers of Chlorate of Potassium.—A notion is prevalent among the public that chlorate of potassium is a remedy which may be safely indulged in to an unlimited extent, but it is high time that this dangerous error should be exposed. Therapeutists are well aware that even in comparatively moderate doses chlorate of potassium is a very active drug, producing a marked effect upon the blood, which it turns brown, and leading in large doses to cardiac paralysis, albuminuria, and death. Instances of this sort are not very rare, and but a few days ago a young man at Morpeth died from sucking pellets of the drug with the object of preparing himself to sing. He absorbed altogether two-thirds of an ounce, causing death from syncope. Even in what are considered safe doses chlorate of potassium often gives rise to great mental and physical depression, insomnia, and various other disturbances of the human economy.—*Medical Press and Circular.*

Reichmann's Syndrome.—In a critical review of recent works upon continued hydrochloric hypersecretion, Dr. Jean Ch. Roux (*Gazette des Hôpitaux*, May 29, 1897), after describing the morbid symptoms frequently observed in dyspeptics, concludes: 1. It is better to speak of the syndrome of Reichmann than of the disease of Reichmann. 2. It is an exaggeration to look upon the syndrome as being always the clinical expression of motor insufficiency of the stomach (Schreiber), due almost exclusively to an incomplete organic stenosis, pyloric or subpyloric (Hayem). 3. In most instances we should admit an exaggerated secretory excitability of the stomach's mucous membrane, the patients being hyperchlorhydrics before the appearance of Reichmann's syndrome. 4. The syndrome should be admitted as existing only when, in the course of a test meal carried out after washing out the stomach, a quantity of hydrochloric acid, free or combined, is discovered in much larger quantities than normal. The examination of the fluid obtained in the morning while fasting is not, in the author's opinion, sufficient to characterize Reichmann's syndrome. 5. The syndrome is encountered in gastric dilatation of passing or lasting nature, according as there exist or not material lesions of the stomach, and particularly in the pyloric region (these lesions may be ulcer in condition of activity, chronic ulcer, cicatrized ulcer, or cancer). It thus results that Reichmann's syndrome may be itself of short or permanent duration. 6. There are intermediary forms from simple to continued hyperchlorhydria. 7. At all events, we must admit that stasis plays an important rôle in the chain of symptoms, if it does not in itself suffice to create the syndrome. It is certain that it suffices to make it disappear in order to bring about a considerable amelioration and even complete cure. We have here an indication of the first order for our medical and surgical therapy.

Dispensary Abuse.—We are glad to note that the failure of the governor to sign the bill regulating dispensary practice, and doing away with many of its present evils, has not thrown cold water upon the efforts of the advocates of the bill. On the contrary, it has acted as a decided stimulant to the fight against dispensary abuse. Medical societies are exerting their power against it; medical periodicals have dis-

cussed it *pro* and *con* and from every conceivable standpoint. We are pleased to see that the crusade has become so general and strong, and that this strength presages the ultimate doing away with, to a degree at least, of a practice which is not only sapping the profession of its income but its dignity.—*Albany Medical Annals.*

The Seat of Lumbago.—Mr. Jonathan Hutchinson, in the April number of *Archives of Surgery*, says concerning lumbago: "It may perhaps seem to savor of the love of contradiction if I assert that the pain in lumbago is not in the lumbar muscles nor indeed in the loins at all. Yet I feel sure that such is the case. I have asked hundreds of its subjects to put the hand over the exact site of the pain, and with the invariable result that the sacral region is the part indicated. If we wish to use this word with precision we should understand it to denote a liability to pain on movement across the sacrum or in the sacro-iliac synchondroses."

Violent Remedies.—Professor Brouardel, in a recent lecture, related the following case: A man had a pharyngeal abscess, so deeply seated that his medical attendant was afraid to meddle with it. One night a burglar broke into the house, and on the sick man calling for help tried to throttle him. The abscess burst, deluging th burglar with pus and causing him to beat a rapid retreat His intended victim experienced instant relief and made a rapid recovery.

A Serum Jag Cure.—A physician on the Pacific coast claims to have discovered a cure for drunkenness by inoculation of horse blood. The substance which he gains by injecting alcohol into the blood of a horse he calls equisin. Alcohol is introduced into the horse and the blood drawn off into a sterilized vessel, in which it is mixed with chloral to influence the clot. After settling for twenty-four hours it is subjected to a freezing process, and then shaken for half an hour. The result is a thin, somewhat sticky fluid.

A Celebrated Quack.—A writer in the *Illustrated London News* narrates some very curious incidents in connection with the practice of medicine in England. Some sixty years ago Mr. St. John Long was, although unqualified, practising in Harley Street, and had made for himself a great reputation, particularly for his treatment of consumption. His method, shortly stated, was in cases of internal disease to cure the malady by causing an external wound. The effects of this treatment were always painful and often shocking to behold. A Dublin lady came up to London to consult him concerning the health of her two daughters. The younger was far gone in consumption; the elder perfectly well. What had happened to her sister naturally alarmed her, however, and Long undertook to prevent her falling a victim to the same disease. He applied his remedies, which gave her intense agony and made her very ill, and on the tenth day Brodie was called in, but too late, for the patient died. The body of the poor girl was exhumed and examined by a committee of doctors. It was shown that there was nothing the matter with her save a wound in the back, apparently produced by fire, though the mode of inflicting it could not be discovered. That was Mr. Long's secret. At the inquest medical testimony was unanimous against him, but he had a cloud of witnesses, male and female, most of them his patients, who gave evidence in his favor. In the end the coroner's jury returned a verdict of manslaughter, which was received in a crowded court with cries of "Shame! shame!" On his trial at the Old Bailey he was found guilty, but escaped on paying a fine of £25c to the king. Long was subsequently tried a second time for pursuing the same treatment with fatal results, but was acquitted. He acknowledged an income of £12,000 a year. There is a monument to him in Kensal Green cemetery, erected by his former patients.

The Plague in India.—In India, coexistent with and indeed tracing its source from the plague, there has been an ominous and increasing feeling of unrest among a portion of the native population. The Hindoos above all else are sensitive to any slur or seeming slur on their religion; their caste prejudices are unconquerable, and unfortunately some of the sanitary measures necessary for checking the inroads of the pestilence have clashed with religious and political sentiments. *The Lancet* of July 24th, in an article on the plague and its literature, does not see in the late riots and murders at Poonah much cause for uneasiness, although admitting that there is considerable local disaffection. At any rate the measures taken for the suppression of the plague, however obnoxious they may have been to the Hindoos, have attained their object with great success, and from all accounts the worst appears to be over. Among the many official and medical reports and the vast mass of literature bearing on the plague in all its phases, the results of the commission under Professor Koch, which have just been published, will probably be of the widest general interest. *The Lancet* says that Koch has found that the plague bacillus, outside the human body or those of certain animals, has very brief vitality. The duration of the life of the bacillus was found to be from eight to ten days at most. The bacilli do not develop without the influence of oxygen. Experiments on animals showed various results. Rats were found to be in the highest degree susceptible, and to be the chief medium for spreading the plague germs and communicating them to human beings. The commission observed only isolated cases of illness among people camping in the open, while among those who had remained indoors the epidemic continued its ravages without abatement. Haffkine's system of inoculation, which was applied to fourteen hundred patients, showed undoubted protective results, although a number of patients were, it is stated, made seriously ill by the inoculations. From this and other reports we may believe that under proper sanitary arrangements the plague will soon lose its hold. This is plainly shown by the fact that those who camped in the open were comparatively free from the scourge. This disease can exist and flourish only in dirty and unsanitary surroundings.

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK. 1897. 8vo, 584 pages. Illustrated.

PROBLEMS OF NATURE. By Dr. Gustav Jaeger. Edited and translated by Henry G. Schlichter. 12mo, 201 pages. Brentano's, New York. Price, $1.50.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Twelfth Session. Vol. XII. 8vo, 510 pages. Illustrated.

THE OPHTHALMOSCOPE. Third Edition. By Gustavus Hasbridge. 12mo, 150 pages. Illustrated. P. Blakiston, Son & Co., Philadelphia, Pa. Price, $1.50.

CONVERGENT STRABISMUS AND ITS TREATMENT. By Edwin Holthouse. 12mo, 177 pages. P. Blakiston, Son & Co., Philadelphia, Pa. Price, $2.00.

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Original Articles.

A CASE OF PHLEGMONOUS GASTRITIS FOLLOWING ULCUS CARCINOMATOSUM OF THE PYLORUS—DILATATION, PERFORATION, AND PERITONITIS—A CLINICAL HISTORY OF FOURTEEN MONTHS WITH CHEMICAL, BACTERIOLOGICAL, AND HISTOPATHOLOGICAL STUDY.

BY JOHN C. HEMMETER, M.D., PH.D., M.D.

AND

DELANO AMES, A.B., M.D.,

LECTURER ON PATHOLOGY, ETC., [illegible]

A DISEASE which is so rarely observed that there are but fifty-six cases reported in the medical literature of the world is always interesting, especially when the patient has been studied at intervals for fourteen months, has been under the almost constant observation of the authors for the last two months of his illness, and upon whom a satisfactory autopsy has been held.

In December, 1895, our associate, Dr. Edward L. Whitney, demonstrator of clinical pathology in the Baltimore Medical College, treated the patient during a typical attack of gastric ulcer. The following note of the case, made by Dr. Whitney at the time, is a concise history of the attack, giving an account of the hæmatemesis, dorsal and epigastric pain spots, great excess of hydrochloric acid, and recovery after treatment by rest, rectal alimentation, nitrate of silver, bismuth subnitrate, and alkalies.

Dr. Edward L. Whitney's Notes of the Case.—In December, 1895, I was asked to see the colored patient, George Williams, in consultation, and made the following notes of the case: The patient is a fairly well-nourished colored man, giving a history of pain in the stomach near the pylorus for several weeks, intensified by eating. For a few days he had had occasional attacks of vomiting, the vomited matter containing fresh red blood. Physical examination showed no dilatation, no palpable tumor, exquisite tenderness over the pylorus and over the eleventh dorsal vertebra, extending slightly to the left. While no palpable tumor could be made out, there was slightly increased resistance over the pylorus.

After the double test meal employed at the Maryland General Hospital, the amount was found to be about one hundred cubic centimetres. It was clear, contained no blood, was of normal odor, showed no lactic acid, but the reaction for erythrodextrin was pronounced. The contents showed no proteids, but a large amount of starchy matter from both test meals. The total acidity was 110. There was an excess of hydrochloric acid by the Boas test.

The patient was at once put on the usual treatment for gastric ulcer: absolute rest and rectal feeding (milk, egg, whiskey, and boiled starch). Small doses of the nitrate of silver were given in the morning, dosage with alkalies after meals was kept up, and moderate doses of bismuth subnitrate were given. In two weeks the patient began to improve and in about four weeks was completely relieved of all pain as well as of other symptoms, and was able to resume his accustomed work. After this he passed from observation until he entered the Maryland General Hospital.[1]

On December 1, 1896, the negro George Williams was admitted to the Maryland General Hospital and gave the following history: Age, forty-nine years; married; family history good. No hereditary facts of importance. Is the father of nine children, all in good health. Worked in the coal-oil business for fourteen years, but for the past six years has followed the calling of a cooper.

The anamnesis: Has always been strong and healthy up to four years ago when he had an attack of influenza lasting about four weeks. This he asserts left him permanently weak.

In June, 1895, he was taken with an attack of vomiting associated with violent pains radiating from the epigastrium to the umbilicus. The vomited matter "made his teeth stand on edge." He recovered from this illness without treatment.

In December, 1895, he had a second illness during which he vomited regularly after he had taken food. At this time the pains were localized in the epigastrium, occasionally shooting back to the shoulder blades. The vomit is described as having been very bitter and acid. Sometimes he brought up very clear irritating fluid containing no food. At other times he vomited blood. He was continually constipated. (This is probably the attack during which Dr. Whitney treated him.)

After a treatment of four weeks he recovered and worked at his trade for the next seven weeks.

About the middle of February, 1896, a third attack was experienced, in all respects identical with the two previous ones except that there was more vomiting, particularly of blood, more pain, and a loss of fifteen pounds in weight in two weeks. He claims to have been jaundiced, but little importance can be attributed to this assertion, as the conjunctivæ are said to have been always pigmented and the skin of the negro permits of no judgment being formed on this question.

He improved once more and resumed work, but on November 1, 1896, the vomiting of food and blood and the pain returned. He requested admission to the hospital, November 30, 1896.

On December 1, 1896, he was given the Maryland General Hospital double test meal as follows:

At 8 A.M., one small piece of beef, scraped and boiled, 80 grams; one soft-boiled egg; boiled rice, 30 grams; milk, 250 c.c.; bread, 50 grams.

At 1 P.M., an Ewald test meal.

The advantage of this double test meal has been set forth in Hemmeter's work on "Diseases of the Stomach," p. 88.

The first meal was vomited about forty-five minutes after it had been eaten. The results of titration by Toepfer's method were as follows: Total acidity, 94; free hydrochloric acid, 34; combined hydrochloric acid, 24; acid salts and organic acids, 46; lactic acid absent by Boas' test: erythrodextrin present. No blood, bile, or tissue fragments. Small amount of

[1] On one occasion (December 4, 1895), his total acidity was 124 and some blood was contained in the tar-colored stool.

mucus. When this test meal was given there had been no hæmatemesis for ten days.

Physical examination: Heart and lungs normal. The tongue is red at edges. Urine cloudy; specific gravity, 1,024; amount in twenty-four hours varying from 320 c.c. to 600 c.c. It contains a great excess of indican and urophen but no albumin, casts, or sugar, and a high ratio of ethereal to preformed sulphates.

Several tables of detailed analyses by Dr. Whitney are appended.

December 2d.—On moderate distention with carbon dioxide a gastrectasia could be distinctly made out by simple inspection. The greater curvature was two inches below the umbilicus. A nodular thickening about two to three inches long, quite hard to the touch, could be felt at the pylorus through the emaciated abdominal walls. The liver was normal to percussion and palpation. There was no evidence of movable kidney. The patient was now fed by rectum, his stomach washed out with sodium bicarbonate, and he was subsequently treated by bismuth irrigations, according to Fleiner's method. His temperature was 97 F.; pulse, 80; respirations, 24. He had no natural stool for a period of eight days. A daily cleansing enema precedes the rectal feeding.

As the patient improved until December 11th, he was exhibited to the clinic, and the Einhorn electric diaphane was introduced. The light did not shine through the abdominal wall of the colored man as well as it did on an equally emaciated white patient; still it could be plainly seen and reached down to a point half-way between the symphysis pubis and the umbilicus.

The capacity of the stomach by Hemmeter's method[1] was twenty-three hundred cubic centimetres. As this method was originally devised to obtain graphic records of the motor function[2] a gastrogram was taken,

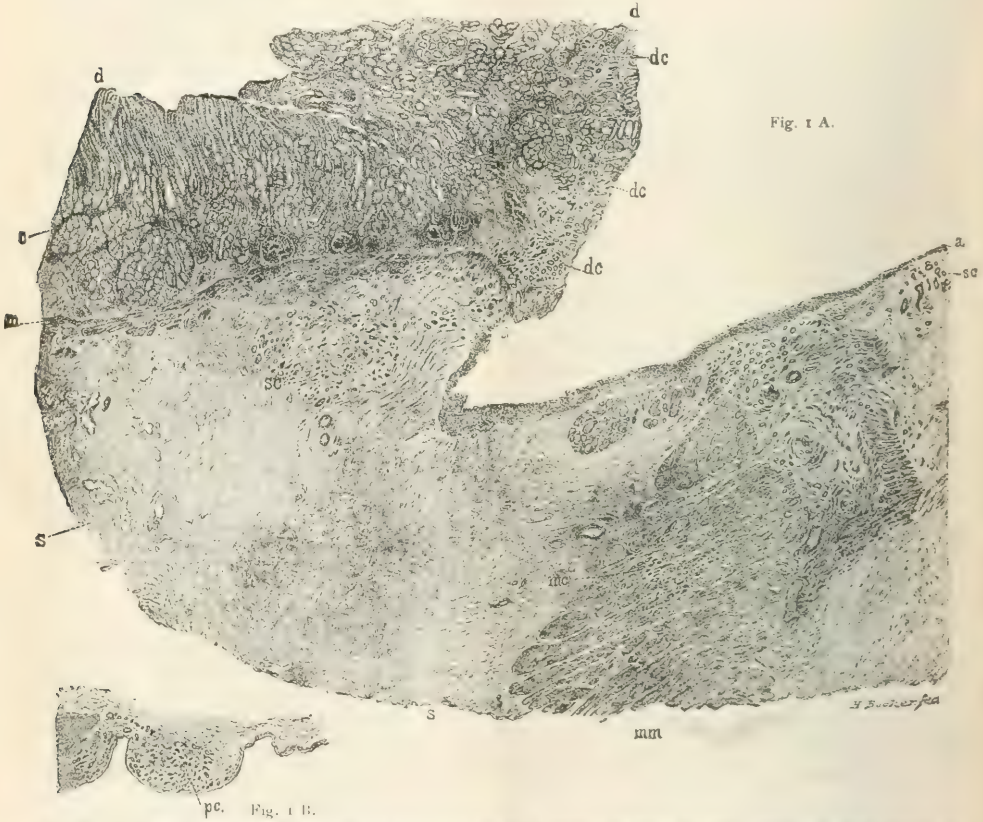

Fig. 1 A.

Fig. 1 B.

Fig. 1 A.—A section through the wall of the stomach, showing [illegible] edge and a portion [illegible] base of the ulcer. Objective, two-thirds; eyepiece, two inches. Stained with hæmatoxylon and eosin. The drawing is built up from a series of microscopic fields. Magnification, about 15 diameters.

Explanation.—*d*, Mucous membrane; *dc*, muscularis mucosæ; *s*, submucosa; *c*, base of the ulcer; *m*, muscle coat of stomach; *sc*, groups of cancer cells between the bundles of muscle fibres; *d c*, groups of cancer cells in the edge of the ulcer in the mucous membrane; *sc*, groups of cancer cells in the submucosa; *a*, necrotic membrane lining the base of the ulcer.

B.—A small nodule from the serous coat of the stomach over the base of the ulcer. Objective, two-thirds; eyepiece, two inches. Stained with hæmatoxylon and eosin. Magnification, about 15 diameters.

Explanation.—This figure gives a good idea of [illegible] the serosa. It is composed entirely of a [illegible] groups and masses of closely packed cancer cells, so closely packed that the outlines of the individual cells cannot be made out. Except for these nodular thickenings the serosa was not altered. *A*, Cancer masses in peritoneal coat.

showing that the peristalsis was not seriously impaired, and the food retention was most probably due to an insurmountable obstruction at the pylorus. In view of the clinical history of ulcer and the abnormal capacity with increased amount of hydrochloric acid, absence of lactic acid, the diagnosis of gastrectasia depending upon cicatricial stenosis of the pylorus was made very probable.

A striking symptom in this case was that for two months his temperature did not rise above 98° F. During a very evident perforation peritonitis with disappearance of liver dulness, the temperature was subnormal, standing at 97° F. At one time it sank to

[1] Loc. cit., p. 70.

[2] See New York Medical Record, June 27, 1895.

93 F. This is of interest in view of the fact that the autopsy revealed a diffuse phlegmonous gastritis, a prominent symptom of which is high fever.

Resorption from the stomach was tested by Penzoldt's and Hemmeter's methods, and found to be almost entirely lost. Bacterial cultures from the vomit resulted in prolific growths of streptococci and, what was significant, of the Oppler-Boas bacillus. There were also many other varieties of organisms, but these were the most important.

The vomit showed at times the presence of pus in traces. This was confirmed microscopically.

On account of the great irritability of the stomach, rectal feeding was almost exclusively depended upon for nourishment. The stagnation was partially prevented by careful lavage every other day. We considered the advisability of lavage in a case of this kind and concluded that the remote dangers of its use were not so grave as those of persistent vomiting and auto-intoxication. Operation, or at least an exploratory laparotomy, was suggested, but permission was refused.

On January 18, 1897, the patient's temperature suddenly fell from 98.8° to 94° F., the pulse became feeble and fluctuated between 60 and 64 per minute, respirations ranging between 14 and 20. There was occasional vomiting, or rather retching. His abdominal muscles became very hard and rigid. On percussion the normal liver dulness could not be made out. These symptoms and signs became more marked during the following days. All gastric alimentation and treatment were stopped. With these unmistakable signs of perforation, œdema of the lower extremities and uncontrollable hiccough developed. The patient died on February 1, 1897, having been in the hospital just two months.

The main features of the clinical history are as follows:

(1) The long time that the patient was under observation, from December, 1895 (Dr. Whitney), to February, 1897, but with distinct history of gastric ulcer as early as 1895.

(2) The continued presence of normal or supernormal amounts of hydrochloric acid in the stomach contents to the end.

(3) Owing to this no lactic acid, although there was a large gastrectasia.

(4) Probable development of a carcinoma from the ulcer. Tumor, progressive cachexia, and the presence of the Oppler-Boas bacillus.

(5) The presence of blood, pus, and of the pyogenic cocci in the stomach contents.

(6) The continued subnormal temperature, particularly after the

(7) Perforation.

The perforation had occurred, as will be seen later,

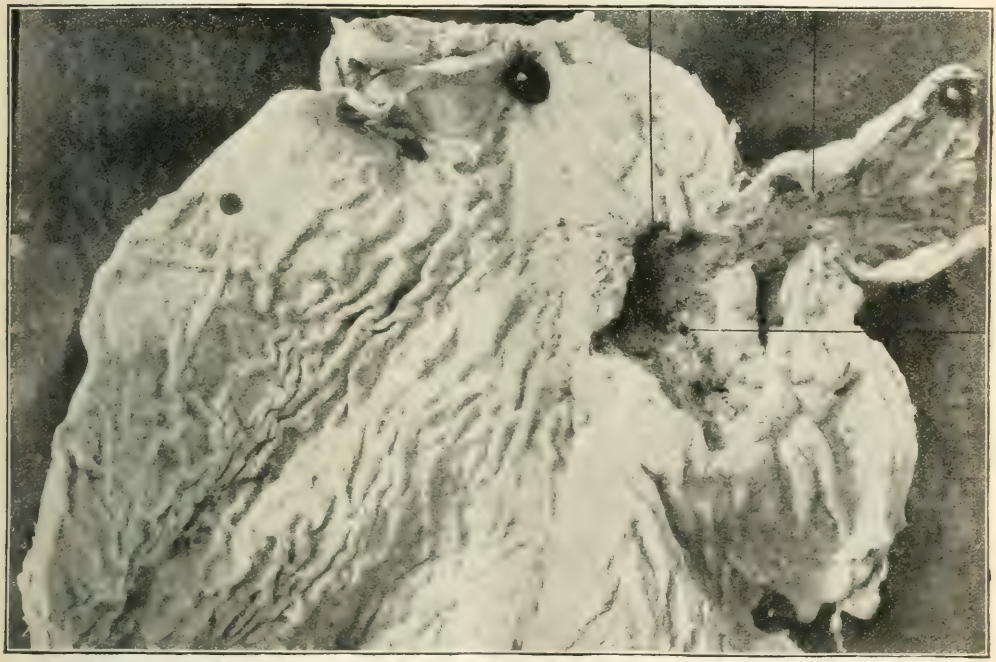

FIGURE 2.—Reproduction of a photograph of the opened stomach, showing the nearly circular ulcer, with comparatively smooth edges near the pyloric opening. The swollen, raised condition of the ulcer walls is well shown, as is also the normal, wrinkled condition of the gastric mucosa. The point where perforation occured is seen as a dark spot, to the right and a little above the centre of the ulcer. The stenosed condition of the pylorus is not shown, as the pyloric opening and the duodenum have been laid widely open. It can be seen, however, that the ulcer does not involve the duodenum. At one place a small cube of tissue has been removed.

in the floor of the ulcer, in the base and walls of which a carcinoma had developed. The stenosis of the pylorus was not absolute, a small passage, permitting with difficulty the entrance of a small lead pencil, still existing.

The Necropsy.—Section No. 124 was made twenty-four hours after death on February 2, 1897, by Dr. Delano Ames, assisted by Dr. A. A. Huntley, and the following notes were dictated at the time. The body is that of a negro, five feet eleven inches in height, and apparently fifty years old.

Muscular development is fairly good, but nutrition has been much impaired. Rigor mortis is well marked.

The usual post-mortem lividity is found in those dependent parts that were not in contact with the bed, and is more noticeable than usual in the negro, because of the light color of the subject.

There is a slight, dark, fluid discharge from the mouth. The tissues of the right hand and of the chest

are quite œdematous, but other than this there are no external signs of note.

Abdomen. Upon making the usual primary incision the muscles of the thorax and abdomen are seen to be of the normal color. The subcutaneous fat is almost entirely absent. On opening the abdomen the following conditions are found: The transverse and descending colons are much distended with gas and bulge through the opening as it is made, while the stomach lies lower in the abdominal cavity than normal, its greater curvature being about one finger's breadth above the umbilicus. But for this the abdominal contents occupy their normal positions.

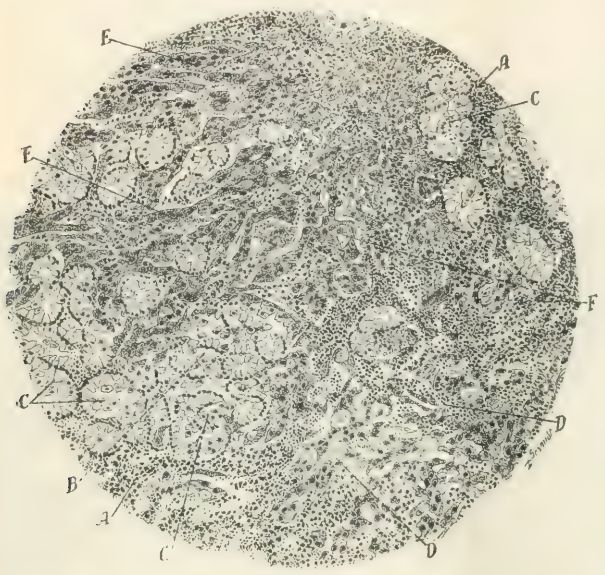

FIGURE 5.—A portion of the mucous coat near the ulcer. Objective, one-sixth; eyepiece, one inch. Magnification, about 350 diameters. Stained with hæmatoxylon and orange G.

EXPLANATION.—This plate shows very well the small-round-cell infiltration between the cross-sections of the gastric tubules, with here and there the cells very much crowded (*A*).

The exfoliation of the cells lining some of the glandular acini is also shown in places (*B*).

At one or two places the proliferation of the epithelial cells that line the glands, with breaking of these glandular structures and the escape of some of the cells into the surrounding tissue, is seen (*C*).

The entire obliteration of some of the glandular structures by masses of cancer cells (*D*), which in many places are strung out for some distance (*E*), and in a few others take on the pseudoglandular arrangement (*F*), is also well shown.

There is a small amount of sero-purulent fluid in the deepest portion of the abdominal cavity in which float numerous flakes of fibrin.

The peritoneum everywhere presents the following changes: Its vessels are engorged with blood, giving it a pinkish color and a slightly roughened surface. In places it is distinctly thickened, and in addition it has lost its normal lustre and is covered nearly everywhere with a thin film of soft whitish material, fibrin, that can be easily scraped off with the finger nail. Owing to the presence of this fibrinous exudate the various coils of the small intestine are glued together and the peritoneum covering them presents the same appearances as does that lining the abdominal cavity.

The mesentery likewise presents the same appearance, is thickened and bathed by a sero-purulent fluid, and more or less covered with fibrin. The position of the diaphragm on the two sides is normal.

Thorax: The ribs and costal cartilages present no changes. On removing the sternum the thoracic organs are seen to occupy their normal positions. The lungs lie free in the pleural cavities, except for one small adhesion that binds the lower lobe of the right lung to the diaphragm. In both pleural cavities there are about six ounces of clear serous fluid. The pleuræ present no changes.

The pericardium is apparently healthy and contains a small amount of a straw-yellow fluid.

The Heart: The heart is somewhat smaller than normal and weighs approximately eleven to twelve ounces. Its position is normal. Its surface presents no changes. The coronary veins are partly filled with dark fluid blood and the coronary arteries are soft and apparently healthy. All of the cavities of the heart are empty. There is no fluid or clotted blood in any of them. The aorta measures one and one-fourth inches in diameter; its walls are not thickened, and its intima is healthy. The same holds good for the pulmonary artery, which measures three-fourths of an inch in diameter. The closure of the aortic and pulmonary valves is perfect. The heart muscle is somewhat darker in color than normal. All of the valvular orifices are normal in size and the valve segments healthy. The thickness of the ventricle walls is likewise normal.

Lungs: In color, size, weight, and general appearance the lungs are normal. On section there is a small firm nodule, about the size of a hickory nut, in the apex of the right lung, which is probably a healing area of tuberculous disease. In the same location, in the left lung, there are a number of smaller nodules, each containing a cheesy material inclosed by a distinct capsule of dense, pearly-gray tissue, a fraction of a millimetre in thickness. Aside from these changes, the lung parenchyma is apparently healthy. A considerable amount of frothy pinkish fluid escapes from the left lung when it is cut and compressed. The bronchi are not altered.

The Liver: In size, weight, color, and general appearance the liver appears normal. In consistency it is softer than normal and is somewhat flabby. On section its color is darker than normal. The diaphragm is adherent in one spot to the upper surface of its left lobe. In all other respects this organ appears to be unaltered.

The gall bladder contains a moderate amount of greenish-brown bile, rather thick and sticky in consistency. There are no concretions.

The Spleen: This organ weighs four and a half ounces. Its capsule is smooth, and in color, consistency, and general appearance it seems to be normal.

The Intestines: The serous coat of the intestines, as already described, shows all the signs of an acute inflammation. The intestinal contents consist of a semifluid material and considerable gas. Upon opening the intestines the mucous membrane is seen to be very much discolored and in the upper portion, especially, to be bile stained. The glandular structures are unaltered, and the appendix, which is three and a half inches long, is healthy.

The Stomach: As already stated, the stomach is displaced downward, its greater curvature lying one finger's breadth above the umbilicus. Its serous coat is involved in the same general inflammatory process that involves the peritoneum and mesentery. Its vessels are all engorged, while its surface is roughened and

covered with a film of fibrin. Careful study of the stomach discloses the cause of the general peritonitis, for on its anterior aspect, not far from the pylorus and a short distance from the lesser curvature, there is a very small opening measuring from one and a half to two millimetres in diameter, through which there escapes a dark-colored fluid—the contents of the stomach.

Close inspection of the outer coat of the stomach in the neighborhood of this perforation shows, in addition to the general signs of inflammation already mentioned, many very slight, rounded elevations, the largest not so big as the head of a small pin, and many so small that they are only seen clearly with a magnifying glass. Palpation of the organ discloses considerable thickening and induration of its walls in the region of the pylorus, except just about the perforation, where the tissue seems to be very thin, this portion ending sharply in tissue that is unusually thick and firm.

Section: On opening the stomach it is found to contain about four ounces of a dark coffee-colored, mushy material which upon careful examination is seen to contain no blood. The mucous membrane appears to be quite normal and is thrown into prominent folds (see Fig. 2). If altered at all it is slightly thickened and swollen.

Near the pylorus there is a large, prominent ulcer, nearly circular in outline and measuring five centimetres in diameter. This has completely healed except in one place where perforation has taken place. The ulcer is evidently an old one. Its borders are elevated, thickened, slightly irregular, and but little undermined. Its base is comparatively smooth, there being but a few rounded elevations here and there. The portion of the stomach, which when examined from without gave the impression of being thin walled, is that which forms the base of the ulcer, just about the perforation, all the surrounding tissue being thickened and quite firm to the touch. Up to the edge of the ulcer the mucous membrane is intact. The pyloric opening has been involved in the ulcerative process and the contraction consequent to healing has resulted in an extreme grade of stenosis, so much so that the pyloric opening now admits only the end of a small lead pencil. Beyond this the duodenum appears to be healthy and does not share in the process of ulceration. The induration, which is most marked in the edges of the ulcer, is confined to its immediate neighborhood and rapidly fades away into the surrounding tissue.

The pancreas is adherent to the stomach in one or two places. It is of normal consistence and size, but is almost pure white in color.

The Kidneys: The right kidney is smaller than normal but healthy in appearance. Its capsule strips off easily. On section the cortex and medulla are of relatively normal dimensions and unaltered in appearance. The pelvis is normal.

The left kidney is considerably larger than the right but is of about normal size. In all respects it seems to be healthy. The pelvic viscera, brain, and spinal cord were not removed or examined.

Anatomical diagnosis: Acute general peritonitis due to perforation of the stomach and escape of stomach contents. Healed ulcer of the stomach with stenosis of the pylorus. Perforation of the stomach by a fresh ulcerative process engrafted on the old one. Probable cancerous infiltration of the walls and base of the old ulcer. Gastrectasia. Healed and healing pulmonary tuberculosis in both apices. Remains of a former, slight, localized pleurisy of the lower right lobe.

Microscopic Appearances of the Stomach Wall.[1]—Portions of the stomach wall were fixed in a four-per-cent. solution of formol, hardened in alcohol, embedded in both paraffin and celloidin, and stained both for a study of the histopathological changes and for any micro-organisms that might be present. The following appearances were noted:

The mucous coat: In the mucous coat the greatest changes were found in the immediate vicinity of the ulceration, and these gradually disappeared in the surrounding tissue. One of the most striking changes was the presence of enormous numbers of small round cells (Fig. 3). These were diffusely scattered throughout the entire thickness of the mucosa, being most numerous in its deeper layers, where in many instances they passed over and infiltrated the muscularis mucosæ and submucous layers. In many places these cells were grouped together into minute clumps, resembling in appearance early abscess formation. The farther one passed from the immediate vicinity of the ulcer, the fewer became these cells until finally they were not found at all. These small round cells were mostly of the character of the polymorphonuclear leucocyte of the blood, having lobulated and

[illegible] of the stomach [illegible] Objective, one-[illegible] eyepiece one inch. Stained with hæmatoxylon and orange G. Magnification, about 320 diameters.

EXPLANATION.—Cross-sections of bundles of muscle fibres from the muscular coat are shown (*A*), between which there are a large number of small-round cells (*B*) in places, and here and there large clumps of [illegible] cells (*C*), a few [illegible] this amongst *A* and *B*, and in formation [illegible] arrangement themselves in complete circles, while in others only a portion [illegible]

[1] The illustrations are taken from Hemmeter's "Diseases of the Stomach," P. Blakiston, Son & Co., Phila., 1897, and were made under the direction of Dr. Ames.

irregularly shaped nuclei which in some instances appeared to be composed of two or three separate parts, which upon close inspection were seen to be connected by slender threads of nuclear substance. A few of these cells resembled the small mononuclear leucocytes.

A further important change noticed in this layer of the stomach was the presence of larger and smaller clumps of quite large cells, each of which contained a clearly vesicular nucleus surrounded by considerable protoplasm. So closely were these cells packed in the clumps referred to, that only occasionally could the outline of the cell be made out. The clumps on casual observation seemed to be made up only of masses of nuclei and cell protoplasm; the outlines of individual cells not being visible (Fig. 3). In many instances the cells formed clumps of considerable size, that gradually tapered out into single rows of cells that lay between the cross-sections of the gastric tubules (Fig. 3). Groups and rows of these cells were most numerous in the very edge of the ulcer and were much scarcer a little distance from it. Occasionally these cells were arranged, as it were, in the form of a glandular acinus. This arrangement, however, was much more common in the submucosa, where the same cells were found in abundance (Fig. 5). These were apparently epithelial in character, and where they were most numerous the gastric tubules were completely destroyed, while about these areas the tubules were found to be very much altered (Fig. 3). Glandular acini were found from the walls of which the gland cells had been exfoliated; others to whose basement membrane a few cells were still attached, while within their lumina lay the degenerating bodies of those that had already been shed. While this process of exfoliation and cell death was most common in the areas in which the clumps of epithelial cells were found, one occasionally found an acinus the cells of which seemed to be in a state of reproduction. In these cases the lumen of the gland would be partly filled with new cells; about its margins there would occasionally be seen a double row of cells, and once in a while an acinus was found which had apparently broken and allowed the newly formed cells to escape into the interstices of the surrounding tissue, where they soon took on the character of the cells already described as forming the groups and clumps so numerous near the margins of the ulcer (Fig. 3 and Fig. 1 *A*). Whether or not this is a process of atypical cell reproduction which has given rise to all the extraneous cells of epithelial type seen in the tissue is a question. While glandular acini, such as we have just described, are not frequently found, it is possible that the epithelial cells so formed have continued to reproduce, as we know to be their custom in similar cases, and have so given rise to all of the new cells found. The supposition is at least plausible and would correspond closely to what Hauser and others have described as taking place in similar cases.

FIGURE 5.—A portion of an area in the submucosa largely composed of groups of cancer cells. Objective, one-sixth; eyepiece, one inch. Stained with hæmatoxylon and orange G. Magnification about 320 diameters.

EXPLANATION.—The fibrous tissue of the submucosa is infiltrated with many small round cells, which in some places are very numerous (*A*). The most prominent change appears in the numerous clumps of cancer cells, almost all of which lie in open spaces in the tissue (*B*). These clumps are like those seen in the other coats of the stomach, but the attempt at glandular formation is more marked here than in any other locality (*C*). In the upper part of the plate is seen the lower portion of the muscularis mucosæ (*D*), infiltrated with many small round cells, and containing a few of the masses of cancer cells.

There did not seem to be any formation of new fibrous tissue in this layer of the stomach, and a study of the proper secreting cells of the gastric glands did not disclose any important changes in them.

The muscularis mucosæ: While in general this layer of the stomach wall showed but little change, other than a moderate amount of small-cell infiltration, important changes were found in the immediate neighborhood of the ulcer in a number of places. In the areas referred to, the muscularis mucosæ was found to be very much thickened and its fibres widely separated by a most intense grade of infiltration with small round cells. Here in numerous places they were accumulated into small masses of about the head of a pin in size and lay one after another in a regular row. Between them the collection of cells was but little less pronounced. We evidently here had a collection of miliary abscesses, all the signs being those of an acute process (Fig. 6). It is to be remarked that although microscopic examination showed the muscularis mucosæ to be filled with numbers of these small abscesses, no pus could be expressed from the tissue at autopsy. In the neighborhood of these abscesses the accumulation of small cells had passed over and involved the deeper portions of the mucosa and to a less extent had spread also into the submucous coat for a short distance. So widely had the fibres of the muscularis been separated that it was difficult, with the small cells obscuring the image, to determine exactly what its boundaries were.

Only a very few of the cells of epithelial type, so numerous in the mucosa, were found in this layer. In a few places they were seen, and occasionally a small vessel was found plugged with them (Fig. 6, *C*).

The submucosa: About the base of the ulcer, and especially about the angle made where it turned upward toward the surface, the submucosa consisted of very dense, firm fibrous tissue, poor in blood-vessels. But

little of the infiltration with small cells, so marked in the upper two layers, was found. Just beneath the muscularis mucosæ in a number of places there were groups of cell clumps similar in all respects to those found in the mucous membrane. It was in this layer of the stomach wall that these cells were most frequently found to arrange themselves in the pseudo-glandular manner already described, which is well shown in Fig. 5, *C*, which represents an area of these cells found just under the muscularis mucosæ. Just under the base of the ulcer where it lies in the submucosa there were also a number of areas composed of groups and clumps of the same cells, and here too the pseudo-glandular arrangement was well shown.

The muscular layer: The chief point of interest in the muscular coat of the stomach was the presence of groups and masses of the epithelial-like cells between the bundles of muscle fibres in the neighborhood of the ulcer. In all respects these clumps and the cells that composed them were like those already described. They were not so numerous and the gland-like arrangement was not so frequently seen. The small-cell infiltration was also very much less marked (Fig. 4, *D*).

The serous layer: In describing the naked-eye appearance of the surface of the stomach it was stated that the serous surface in the neighborhood of the pylorus showed upon very close inspection, especially with a magnifying glass, minute elevated points varying in size from that of a pinhead to very much smaller. Upon microscopic examination these slightly elevated points were seen to be composed almost entirely of masses of cancer cells, like those already described. Instead of being diffusely scattered all through the serosa they were aggregated into small areas, each composed of numerous epithelial-cell clumps. The only points of difference noted were that the clumps themselves were considerably smaller than those in the other layers of the stomach wall, and that the individual cells were likewise smaller. No pseudo-glandular formations were found. One of these nodules in the serosa is admirably represented in Fig. 1 *B*. The serous coat in other places did not appear to be at all thickened.

Bacteriological Examination.—Sections were stained by Gram's method with both fuchsin and methyl violet for micro-organisms, with the following results: In the necrotic tissue lining the floor of the ulcer, the following organisms were found, all of which stained well, especially with methyl violet.

A bacillus. This appeared either as single, moderately long rods, sometimes staining solidly, sometimes showing clear open spaces in the protoplasm about the centre of the rod, while the ends stained deeply. In size these rods closely resembled anthrax bacilli and when they contained the open spaces just mentioned looked very much like anthrax rods with spores. In many instances this organism appeared swollen at one end, resembling in shape a baseball bat, and at other times one-half of the rod would be somewhat broader than the remaining half, the change in size being quite abrupt. Not infrequently what appeared to be the same organism was found in chains of from two to eight segments, some segments staining solidly while others showed the same open spaces found in the single rods. Even in the chain formation the peculiar morphology already mentioned was noted. By far the greater number of these organisms was found in the necrotic membrane on the floor of the ulcer, in both its superficial and deeper portions, but a few were also found in the living tissue beneath the ulcer, in the submucosa. In all respects this bacillus corresponded to one that was cultivated from the stomach washings and from the vomit, and it agrees with the description of a bacillus frequently associated with gastric carcinoma given by Oppler and Boas and by Kaufmann, and known as the "Oppler-Boas lactic-acid" bacillus. It is of peculiar interest in this case because of its association with the carcinoma engrafted on the old ulcer, as already mentioned.

Beside this organism the sections also showed, both in the necrotic base of the ulcer and in the living tissue below it, a few micrococci arranged in clumps and occurring singly, but never found in chains. While these were found in the location just mentioned, it is to be noted that a most careful search failed to reveal any micro-organisms whatever in connection with the numerous small abscesses found chiefly in the muscularis mucosæ and mucosa in the neighborhood of the ulcer.

A third organism was also found which, however, we have not as yet been able to classify exactly. In shape and general appearance it resembled very closely an ordinary yeast cell but was very much smaller, since when studied with a one-twelfth oil-immersion objective it appeared even smaller than a yeast cell would when viewed with a one-sixth dry lens. The usual shape of these organisms was either circular or oval, and they often appeared as though in the act of budding, a small knob-like projection being found on one side, usually about one-fourth the size of the parent cell. Sometimes the organism appeared as a double cell,

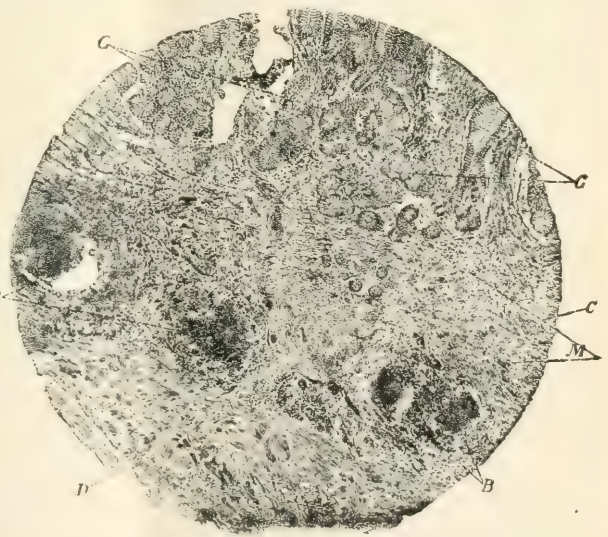

FIGURE 1.—Section showing the lower part of the mucous coat with the ends of some of the gastric glands, the muscularis mucosæ, and a small portion of the upper part of the submucosa. Objective, one-sixth; eyepiece, one-half. Stained with hæmatoxylon and orange G. Magnification, about 320 diameters.

EXPLANATION.—As in all the other sections, the small-round-cell infiltration is well marked, the cells chiefly filling up the muscularis mucosæ and invading the lower portion of the mucous coat. In the muscularis mucosæ these cells are aggregated into a number of small, circular, dense masses (*B*), miliary abscesses, between which they are but little less numerous. The fibres of the muscularis mucosæ have been widely separated by these cells. Few cancer cells are to be seen in this portion of the tissue, but in one place (*C*) they are found plugging completely a small vessel. In the upper part of the submucosa a few of the cancer cells can also be seen (*D*).

the two parts being of about the same size. In no instances were more than two such cells found together, and in this it differed from yeast, which often occurs in chains of several budding cells. The protoplasm of these cells stained a bluish-violet color and the capsule a somewhat darker tint. Within the protoplasm there was usually a number of darker-staining granules which were sometimes so numerous as to give the cell a coarsely granular look. In many respects these organisms resembled protozoa, to which class they probably belong. Their presence was probably purely accidental.

A good representation of the three organisms found in the tissue in this case is given in Fig. 1, *A*, *B*, and *C*.

The changes therefore found in the walls of the stomach point to three different morbid processes. In the first place, the ulceration. This was of long standing, as was evidenced by the fact that it had healed and in the healing had produced a gradually increasing pyloric stenosis. The fibrous tissue about the base and margins of the ulceration was firm, dense, and poor in blood-vessels. In one place the ulceration had progressed or a new ulcerative process had been re-established in the seat of the former and perforation had taken place, allowing an escape of stomach contents and the consequent production of an acute general peritonitis. This new area of ulceration was very limited in extent and the resulting perforation very small.

In the second place, within the tissue immediately surrounding the ulceration, that is, in the walls and base of the ulcer, there had developed a diffuse cancerous growth; atypical epithelial-cell reproduction had taken place, probably originating in tubules of the gastric glands, in some way affected by the process of ulceration and by the later process of cicatrization. The ulcerative process, it is conceivable, as pointed out by Hauser, reduces the natural tissue resistance, while the cicatrix formation produces a constant low-grade irritation; the result of these two being the stimulation of the glandular tissue to reproduce, the new cells being allowed to grow and develop in the spaces of a tissue less resistant than normal. That these cells may find their way into the lymphatics and blood-vessels is shown in Fig. 6, *C*, and in this way they may ultimately find their way into more distant parts. The peculiar tendency of these atypical glandular cells to reproduce the type of gland from which they originated by lining lymph spaces and spaces in the surrounding tissue is well shown in some of the sections. Had the patient lived long enough the new growth would probably have spread beyond the confines of the stomach wall and involved distant tissue, not only by successive invasions of contiguous tissue but also by being transported through the lymph and blood currents.

In the third place, a study of the tissue in the immediate vicinity of the ulcer showed an interesting condition that is not often seen. The lower layers of the mucous membrane and the muscularis mucosæ were the seats of a diffuse phlegmonous inflammation. Numerous very minute abscesses were found in the muscularis mucosæ and the signs of acute suppurative inflammation spead over and involved the under part of the mucosa as well. Owing to the presence of these small abscesses the muscularis mucosæ was greatly thickened and its fibres were widely separated by the large number of small cells present in the tissue. This particular morbid change is of interest, since it is so rarely found and especially because of its association with the ulcus carcinomatosum.

Let us resume once more the clinical aspect of this rare case. Pus is occasionally observed in gastric carcinoma,[1] and v. Leube mentions a case of simple gastritis with abundant purulent secretion, but does not classify this with phlegmonous gastritis. The discovery of the Oppler-Boas bacillus in the vomit was sufficient to induce us to refrain from an exact diagnosis of the cause of the stenosis. Oppler and Boas' first called attention to these characteristic large bacilli in gastric contents from cases of carcinoma. In unstained preparations they can be recognized by their considerable size, immotility, and form. Most of them have the shape of a baseball bat, gradually becoming thicker at one end. According to Kaufmann they possess the property of forming lactic acid abundantly from various kinds of sugar. In twenty cases of carcinoma Kaufmann succeeded in demonstrating their presence nineteen times. In only one case were they not found and in this lactic acid was also absent. There was a constant parallelism between the enormous occurrence of these bacilli and large amounts of lactic acid, and Kaufmann suggests that if this fact can be confirmed, the complicated analysis of lactic acid might be replaced by the simple investigation of a drop of the stomach contents or vomit under the microscope.

According to Schlesinger and Kaufmann,[2] who first succeeded in obtaining this form of lactic-acid bacillus in pure culture, the presence of numerous large bacilli of this kind speaks with great probability for gastric carcinoma. The negative result of searching for these bacilli is as valid a proof as the absence of lactic acid itself. If a pyloric stenosis is evident, they argue that the absence of the Oppler-Boas bacilli speaks against its origin from carcinoma. Although these organisms are not pathognomonic of cancer of the stomach, and although there are many other bacteria that can form lactic acid, they are nevertheless very significant and important for the diagnosis of carcinoma. F. Riegel[3] confirms the occurrence of this bacterium in enormous numbers in cases of gastric cancer and regards them as significant ("bedeutungsvoll").

The remarkable facts about this case were that it had undoubtedly originated in a gastric ulcer and conclusions were justifiable that gastrectasia was due to cicatricial stenosis. There were two signs that made us hesitate in making a definite diagnosis, and these were the constant presence of the Oppler-Boas bacillus and a pronounced progressive cachexia.

It will be evident from the appended analyses that lactic acid was found only once and that hydrochloric acid was present at every analysis, the smallest amount found being equal to 12° decinormal NaOH. From the work of Oppler, Kaufmann, and Schlesinger referred to, one may conclude that lactic acid is an unavoidable accompaniment of the Oppler-Boas bacilli, and that they rarely or never occur when hydrochloric acid is present in normal amount. Here was a case in which these characteristic bacilli were repeatedly found by Dr. Whitney and Professor Hemmeter in the stomach contents before death, and which were found, as already shown, by Dr. Ames in the walls of the stomach at autopsy, and in which there was normal and sometimes hyperacidity with an absence of lactic acid.

The absence of lactic acid we might explain by the fact that the man had for two weeks at a time been fed almost exclusively by the rectum, and when he really did receive nourishment by the stomach it contained mainly proteid diet, such as whipped egg, meat pulp, albumen water, and brandy. It is true that Ewald test meals were repeatedly analyzed, but then the work of Ferdin, Langguth,[4] and of Feiertag[5] makes

[1] Boas, "Diagnostik und Therapie d. Magenkrankh.," p. 5.

[2] "Z. Kenntniss d. Magencarcinoms," etc. Deutsch. med. Woch., 1895, No. 5.

[3] Wien. klin. Rundschau, 1895, No. 15.

[4] "Die Erkrankungen d. Magens," p. 174.

[5] Archiv f. Verdauungskrankh. von Boas, B. i., S. 355.

[6] Inaug. Dissert., Dorpat, 1894.

it clear that very little lactic acid is contained in the test breakfast, many times none at all. One essential condition for the production of lactic acid is the suppression of the secretion of hydrochloric acid; in this case there was some stagnation but normal amounts of hydrochloric acid, and at times some hyperacidity, so that the absence of lactic acid in the gastric contents is traceable to the absence, or nearly absence, of carbohydrate ingesta and to the presence of hydrochloric acid at all times.

According to the observations of Rokitansky and of Dittrich, and later of Hauser,[1] there can be no doubt that atypical cell proliferations, which may entirely possess the character of gastric carcinoma, may arise on the basis of a benign ulceration. Such a metamorphosis is, however, infrequent. In 1891 Kollmann[2] collected fourteen cases and in 1895 Boas could add but eight more,[3] so that although the phlegmonous suppurative gastritis which was found at autopsy is a rare disease, well authenticated cases of carcinoma arising from gastric ulcer are equally rare, thus making this report doubly interesting.

In from five to six per cent. of gastric ulcers a carcinoma develops in the margins.[4] The diagnosis is based upon the presence of progressive cachexia with tumor, and normal or supernormal secretion of hydrochloric acid.[5] In spite of absence of hydrochloric acid, however, a carcinoma may nevertheless have originated from an ulcer. The diagnosis is supported by the previous characteristic history of ulcer and the course of the disease. An ulcer does not suddenly strike into the existence of an individual as carcinoma does, and ulcus carcinomatosum occurs in individuals who, as a rule, have suffered for years with gastric pain. If hæmatemesis and bloody stools are recorded in the anamnesis, the diagnosis acquires some certainty.

The diagnosis between gastric carcinoma *ex ulcere* and tumor-like induration of a simple ulcer is difficult. Boas holds that in some cases the secondary metastasis in the liver or other organs, and such other signs as ascites, peritoneal carcinosis, etc., may give the deciding clew. Such aids, however, are very rarely obtained. Among other conditions hypertrophic stenosis of the pylorus may have to be eliminated. Cases have been described in which the only symptoms were those of ulcer with cachexia, no tumor mass at the pylorus being palpable, and which yet at autopsy showed an ulcus carcinomatosum.

We had no hesitation in establishing a diagnosis of carcinoma in our own case, based upon the progressive cachexia, the tumor mass at the pylorus, and the presence of the Oppler-Boas bacillus, and as there was no doubt about the previous existence and probable persistence of an ulcer the diagnosis of ulcus carcinomatosum was made very probable.

The diffuse suppurative (phlegmonous) gastritis which was found at the autopsy in the form of numerous miliary abscesses in the mucosa and in the muscularis mucosæ, in the floor, and in the margins of the neoplastic ulcer, was not diagnosed ante mortem, for although micrococci and pus were observed in the gastric contents, these are not infrequently noted in connection with carcinoma, and as the temperature was almost continually normal or subnormal, the possibility of phlegmonous inflammation of the stomach did not enter our minds, and finding it in the sections was a great surprise. The method of hardening, sectioning, staining, etc., has already been described by Dr. Ames, who made the autopsy and studied the tissue with the assistance of Dr. A. A. Huntley, his assistant in the pathological laboratory in the Baltimore Medical College.

FIGURE 7.—Section of tissue from twelfth; eyepiece, one inch. Stained Magnification, 1,060 diameters.

b, A micrococcus which occurs singly and in clumps, but never in chains. the Oppler-Boas bacillus and the next organism to be described were found both

yeast cell. Budding forms are seen, and the granular protoplasm in some, and the few large, deeply staining dots in others, are well represented.

This section should have been in colors; owing to its complex reproduction it was impossible to insert it except in black, and in consequence the organisms only are shown in their exact positions, the tissue in which they lay not being represented.

In many particulars our case resembles one of phlegmonous gastritis following gastric cancer reported by S. Mintz,[1] who at that time collected forty-one cases. In a new compilation we give all the cases of phlegmonous gastritis referred to in the literature, amounting in all to ninety-five references, as well as a list of all works referring to the subject. These are mainly from the reports of Mintz,[2] the text-books of Ewald, Boas, Rosenheim, and Riegel; the fourth volume of the Edinburgh Hospital Reports; an article by R. F. C. Leith, pp. 51–114; from Debove and Rémond,[3] and from the various journals quoted. It is appended under the bibliography at the end of this article, together with the bibliography of ulcus carcinomatosum.

Analysis of Stomach Contents of George Williams.—March 4, 1896, Maryland General Hospital. Meal at 11:30 A.M. Ewald meal at 3:30. Contents of stomach examined at 4:40.

Macroscopic examination: Amount, 180 c.c. Clear. Acid odor. No apparent fermentation. Normal amount of mucus. Rice. Small pieces of meat probably indigestible. No blood. Small amount of bile.

[1] "Das chronische Magengeschwür." Leipzig, 1893.

[2] Kollmann: "Zur Differentialdiagnose zwischen Magengeschwür u. Magenkrebs." Berlin. klin. Wochenschr., 1891, Nos. 5 and 6.

[3] "Diagnostik u. Therapie d. Magenkrankheiten." Leipzig, 1895, p. 189.

[4] Hauser, l. c.

[5] Rosenheim: "Zur Kenntniss des mit Krebs complicirten runden Magengeschwürs." Zeitschr. f. klin. Med., B. xvii., S. 110.

[1] Deutsch. Archiv f. klin. Med., Bd. xlix., p. 1[illegible].

[2] L. c.

[3] "Maladies de l'Estomac," p. 1[illegible].

Chemical examination: Reaction acid to litmus, congo paper, and Boas reagent. Negative to Uffelmann's test. Total acidity: 5 c.c. filtered contents treated required 5.4 c.c. alkali to neutralize. Total acidity, 108.

Dr. Whitney's conclusions at this time were as follows: Marked hyperacidity. Some atony. Probably gastric ulcer with pyloric obstruction.

The patient was put upon rest, milk diet, bismuth, Carlsbad water, Blaud's pill with arsenic for a time, lime water, and bicarbonate of sodium. Local treatment for pains.

Result: Cure. Patient discharged May 1, 1896.

Second Examination: Stomach contents drawn at 8 A.M. No food since the previous day.

Macroscopic examination: Amount, 900 c.c. Color brownish. Large amount of grumous disintegrating blood. Traces of pus. No other solid particles. Odor normal. No bile. No excess of mucus.

Chemical examination: Acid to litmus. Acid to congo paper. Acid to dimethyl. Free HCl present. Lactic acid absent. Sugar, very faint trace. Erythrodextrin absent. Peptone present. Acidity: free HCl, 32 per cent. Organic acids and acid salts, 29 per cent. Combined HCl, 1 per cent. Total acidity, 62 per cent.

December 6, 1896. Maryland General Hospital meal at 8 A.M. Ewald meal at 12 M. Contents drawn at 1 P.M.

Macroscopical examination: Contents large, 1,200 c.c. Odor slightly offensive. Small bits of bread from Ewald meal. Egg yellow present from Maryland General Hospital meal. Small bits of tissue, apparently meat. Small amount of mucus. No blood. No bile.

Microscopical examination: In addition to food the small bits of tissue showed numerous flat epithelial cells. No sarcinæ. Sections will be made of the tissue.

Chemical examination: Acid to litmus. Acid to congo. Acid to dimethyl-amido-azo-benzol. Free HCl present. Lactic acid absent by Boas test. Acetic acid (?). Erythrodextrin absent. Sugar present. Peptone present. Free HCl, 14 degrees. Combined HCl, 24 degrees. Acid salts and organic acids, 46 degrees. Total acidity, 84 degrees.

December 7, 1896.—Maryland General Hospital meal at 8 A.M. Ewald meal at 12 M. Contents drawn at 1 P.M. The stomach was washed thoroughly at 7:30 A.M. and all drugs were stopped.

Macroscopic examination: Contents large, about 350 c.c. Filtrate faintly cloudy, 300 c.c. No blood, bile, or excess of mucus. Odor faintly sour and slightly unpleasant. No meat or milk left from Maryland General Hospital meal. Small bits of egg yellow and bread. No bits of mucosa to be found.

Chemical examination: Acid to litmus, congo, and dimethyl. Free HCl present. Lactic acid absent. Acetic acid (?). Sugar present. Erythrodextrin absent. Peptone present. Total acidity, 70 degrees. Free HCl, 12 degrees. Combined HCl, 24 degrees. Acid salts, etc., 34 degrees.

December 17, 1896.—Last food given the evening of December 16th. Contents were drawn about 8:30 A.M., December 17th.

Macroscopic examination: Amount about 500 c.c. Odor faintly unpleasant. No food contents recognizable. Small particles of bismuth from former days. No blood, bile, or excess of mucus. Pus present. Filtered readily. Filtrate clear. Slightly brownish tinge.

Chemical examination: Acid to litmus, congo, and dimethyl. Free HCl present. Lactic acid absent. Butyric acid absent. Acetic acid absent. Erythrodextrin absent. Sugar present. Peptone present. Total acidity, 84 degrees. Free HCl, 20 degrees. Acid salts and organic acids, 57 degrees. Combined HCl, 7 degrees.

January 8, 1897.—Stomach washed out in the morning and then Maryland General Hospital meal at 8:10. Ewald meal at 12:10. Contents drawn at 1:10.

Macroscopic examination: Amount, 1,100 c.c. Odor offensive. Small amount of blood shown in the filtrate. Slight excess of mucus, no bile. Bread, meat, egg, rice, present in contents. Filters slowly. Filtrate brownish, clear.

Chemical examination: Acid to litmus, congo, dimethyl. Free HCl present. Lactic acid absent. Peptone present. Erythrodextrin present in small amount. Sugar present, nearly normal. Free HCl, 27 degrees. Combined HCl, 7 degrees. Organic acids and acid salts, 53 degrees. Total acidity, 87 degrees.

Ferments: Pepsin and rennet present in about normal power.

Synopsis of the Urine Examinations of George Williams:—The amount varied from 470 to 680 c.c. in the twenty-four hours. The reaction was in every instance but one alkaline. The odor was as a usual thing normal. The specific gravity varied from 1.021 to 1.032. Albumin was never detected. Sugar was never detected. Globulin was never detected. Indican was always in excess. Urophen was normal in three examinations and in excess in two. Urea varied from 12.22 to 20.06. Uric acid varied between 0.3326 and 0.4737. Chlorides varied from 0.658 to 1.53 gm. as NaCl. Phosphates varied from 0.7884 to 1.3 86 gm. as P_2O_5. Bile pigments were always absent. Acetone was absent in all but one examination, when it was marked. Bile salts were always normal. Blood was always absent. Hæmoglobin was always absent. Diacetic acid was always absent. Creatinin was always in excess. Uroerythane was present but once. The microscopic examination showed epithelial cells, some pus, triple phosphates, mucus, and amorphous urates.

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THE SCIENTIFIC TREATMENT OF TUBERCULOSIS.[1]

BY JOSHUA LINDLEY BARTON, M.D.

[illegible]

THE discovery of the tubercle bacillus by Dr. Koch in 1881 marked an epoch in the history of tuberculous disease; first, because up to that time the etiology of the disease was obscure; and secondly, the treatment, being largely symptomatic, was defective.

"The great desideratum in nomenclature, as applied to disease, is that the name of each disease shall express the morbid condition involved." Not only is the proper nomenclature of this disease, however, in doubt, but also the exact pathological conditions intended to be described by the synonyms used. We find it mentioned by medical writers as consumption, tuberculosis, and phthisis. These terms are applied to a number of inflammatory conditions which may be either acute or chronic, incipient or far advanced, pneumonic, tuberculous, or fibroid. Granting that in nearly if not quite all of these cases the tubercle bacillus is the cause of the disease, it still remains true that clinically much perplexity exists because of a failure sufficiently to appreciate the fact that "tuberculosis and phthisis are distinct and different conditions," while the term consumption may be applied to an entirely different form of disease.

The practice of medicine is both a science and an art; but "Science is knowledge reduced to principles;" "Art is knowledge reduce to practice." We can, therefore, hardly wonder that our art so often fails to master this disease, when we ignore the first principles of sound practice and treat the disease by name, regardless of the pathological conditions.

Since 1881 tuberculosis has severely taxed the ingenuity of the profession. The etiology of the disease being so simple and due to one cause, the conclusion has been natural that if we can remove the cause we shall cure the disease. We have, therefore, been too apt to ignore the patient, considering him simply as a culture medium for the disease germs, and have paid our respects almost wholly to the tubercle bacilli.

Tubercle bacilli are minute vegetable bodies, about one-three-thousandth of an inch in length. They are ubiquitous, omnipresent—in the water we drink, in the air we breathe, and in the food we eat. They seem to have neither beginning of days nor end of years. High and low, rich and poor alike, are liable to their visitations. It is, therefore, of much interest to inquire why it is that some individuals are attacked while others escape.

The consensus of clinical experience and scientific opinion seems to be that malnutrition, heredity, and irritation of the respiratory mucous membrane, from whatever cause, are all-powerful factors predisposing to the disease; and that when the tubercle bacilli gain entrance to soil prepared by one or all of these agencies they take root, and shortly the sufferer presents himself with the clinical phenomena of pulmonary tuberculosis.

Curability of the Disease.—Medical authorities[2] are quite unanimously of the opinion that a large percentage of the incipient cases can be cured by appropriate treatment, while in the more advanced and chronic forms the disease may be greatly delayed and life rendered fairly comfortable. But it should not be forgotten that *alterum alterius auxilio eget* is a *conditio sine qua non* to success.

Prophylaxis.—The old adage that an "ounce of prevention is worth a pound of cure" is eminently true in connection with pulmonary tuberculosis. But prophylaxis should embrace not only a prohibition of expectoration in public places and an additional hospital for the proper care of a few of those who are ill; it should also provide for the destruction of all infected animals and for our tenement-house population large, airy living-rooms into which the glorious sunshine may come.

Plan of Treatment.—The plan of treatment should take into consideration, first of all, the pathological condition, *i.e.*, whether the case is one of simple tuberculosis or of phthisis; whether the disease is quiescent or progressive; and whether the conditions of cure are present or absent; *i.e.*, whether the patient has the vitality or recuperative power to respond to the treatment.

Hygienic Management.—The general health of all persons suffering from this disease should be carefully promoted. Their sleeping-apartments should be large and well ventilated; they should spend several hours each day in the open air; their nervous systems should be stimulated to healthy action; physiological errors in digestion and assimilation should be corrected; the blood should be improved in quality, so that it may furnish to the individual cells those elements which will build up and improve the tissues.

Mechanical Treatment.—No mechanical device yet suggested exceeds in value the "pneumatic cabinet," as a therapeutic agent in the treatment of pulmonary diseases. "The mastery of its physics, a thorough knowledge of physiology, and a correct appreciation of the pathological condition in each particular case are of course indispensable."[3] Some of the most important results obtained by a judicious use of this instrument are as follows, viz.: the muscles of respiration are developed; the lungs are made to expand; portions of lung tissue which have been comparatively idle are made to perform their physiological function; "inflammmatory stasis is prevented; septic products and mechanical obstruction to circulation and respiration are removed; lymphatic absorption is increased, and the nutritive supply is augmented."[4]

Topical Treatment.—A recent writer upon "The Surgical Treatment of Tuberculosis" makes the assertion that "tuberculosis is amenable to treatment in direct ratio to our ability to attack it locally." If this is true of tuberculosis of the skin, bones, joints, kidneys, and pleura, it is also true of tuberculosis of the lungs.

The late Dr. Horace Green, of this city, as long ago as 1838, taught that pulmonary tuberculosis could be treated locally by means of injections into the trachea and bronchi through the mouth and larynx. In 1840 he brought the subject before the New York Medical and Surgical Society, and reported fifteen cases of severe laryngeal and bronchial disease which had been cured by this means. Between October, 1854, and February, 1856, he had treated one hundred and six cases. Of these, seventy-one were classed as cases of tuberculosis. Of these tuberculosis cases, thirty-two were considered as cases of advanced tuberculosis, *i.e.*, cases

[1] Read before the Medico-Surgical Society, April 5, 1897.

[2] Prof. Hughes Bennett, Prof. A. L. Loomis, Prof. Francis Delafield, Dr. Richard Quain, Dr. James Pollock, Prof. W. H. Thompson, Dr. James Henry Bennett, Dr. C. E. Quimby, Dr. James R. Leaming.

[3] Dr. Von Ruck.

[4] Dr. C. E. Quimby, in a paper read before the American Climatological Association, June, 1892.

in which tuberculous cavities were recognized; and thirty-nine as cases of early tuberculosis. Of the subjects of advanced tuberculosis, twenty-five were more or less improved—their lives being apparently prolonged by this means of medication. Of the thirty-nine cases of incipient tuberculosis, twelve had apparently recovered at the time the report was written, and five more were nearly well. Of the remaining twenty-two cases, seventeen were greatly improved, three were moderately benefited, and three failed to receive any benefit whatever. Of the twenty-eight cases of bronchitis, sixteen were cured, and all of the others greatly benefited. In six cases of asthma treated by this means—in all except one—the disease was entirely removed. Four years later in a paper read before the Medico-Chirurgical College, he adds: "Such has been the amount of success which has continued to attend this plan of treatment that I am now ready to affirm, after an experience of many years in a field of observation unusually large, that, if I were required to relinquish all other known therapeutic measures or topical medication in the treatment of thoracic diseases, I should choose the latter with hygienic means alone, in preference to the entire class of remedies ordinarily employed in the treatment of these diseases."[1]

The technique is simple. An ordinary aspirating syringe with an endo-laryngeal tube, a head mirror, a laryngeal mirror, a Mackenzie condenser, and a cocaine spray constitute the necessary apparatus; while a steady hand, a cool head, and some knowledge of laryngology will enable any physician to treat the disease topically by means of intrabronchial injection.

"This method of medication has several advantages, viz.:

"1. The remedy is applied directly to the irritated mucous surface.

"2. It immediately alleviates the most distressing symptoms, adding at once to the comfort of the patient.

"3. In a certain number of cases the antiseptic effect of the medicine is very pronounced, as shown by the longer interval between febrile attacks, and by their lessened intensity when they do occur.

"4. The tracheal and bronchial mucous membrane rapidly absorbs the medication, so that we may expect a general as well as a local effect.

"5. We avoid disturbing the patient's stomach with nauseating doses, and the shattering of his nervous system with opiates.

"6. This method of alleviating the most distressing and annoying symptoms does not interfere in the slightest degree with any other line of general treatment which may be deemed advisable.

"7. In cases characterized by an atrophic condition of the tracheal mucous membrane, or of pulmonary disease with cavitation leading to retention and decomposition of the secretions, intrabronchial injection will remove the disgusting fetor of the breath consequent upon this condition."[2]

Local applications to diseased areas, in phthisis, may also be made by means of intrapulmonary injection. An exhaustive review of the history of this procedure will be found in an excellent paper written by Dr. Beverley Robinson and published in the MEDICAL RECORD, of January 10, 1885.

The technique is fully described in an admirable paper by Dr. J. Blake White and published in the MEDICAL RECORD of November 13, 1886. The results obtained by means of topical medication in pulmonary diseases should inspire us with confidence that a very large number of cases may be amenable to scientific treatment which were formerly considered hopeless.

[1] B. P., 125; B. P., vol. 52.

[2] Dr. Joshua L. Barton, in a paper read before the laryngological section of the New York Academy of Medicine, March 25, 1890.

Medicinal Treatment.—A long list of remedies has been suggested for administration in tuberculosis; but with the exception of those which promote nutrition there is little to encourage their use. When the fact is clearly recognized that a restoration of normal nutrition is of greater value in the treatment of tuberculous disease than the whole class of so-called antiseptics, and that, owing to the physiological and pathological complications, a specific remedy is out of the question, a brighter day will have dawned for both patient and physician.

There are two remedies, however, in addition to those commonly prescribed, to which I wish especially to call attention. First, the chloride of gold and sodium with the iodide of manganese, brought prominently before the profession as a therapeutic agent in tuberculosis by our honored president, Dr. J. Blake White, is a most valuable remedy as well as a powerful nutritive stimulant, and is deserving of a much more extended trial than it has yet received. Secondly, the tuberculin of Koch, "regarded for a short time as a specific in tuberculosis," is a remedy of the greatest value when used in small doses, as suggested by Dr. Von Ruck. After an experience of some years his testimony is that "its effects are as reliable and uniform as we can expect them to be when we take into consideration individual idiosyncrasy, the stage of the disease, and the pathological complications which are usually present." Doctors Trudeau, Muir, Bermingham, and many others bear testimony to its therapeutic worth, and I may venture to add that my own experience with this remedy has been of the most satisfactory character.

The initial dose should never exceed one-twentieth of a milligram and should be increased only after tolerance has been established, the rule being never to give a dose large enough to cause a febrile reaction. The second week the dose may be increased to one-tenth of a milligram, and the third week to one-fifth of a milligram, and so on, until the maximum dose which a patient can take has been reached. Should a reaction occur the remedy should be discontinued for a time and then resumed, the minimum dose being given as in the first instance.

It is best administered in a one-half-per-cent. carbolic solution, so prepared that five minims of the solution will contain one-twentieth of a milligram of the tuberculin. This may be injected with a hypodermic needle into any convenient part of the body.

"Whenever a point is reached where the improvement is radical and the active symptoms have entirely subsided, the remedy should be discontinued and the patient kept under observation for some weeks. If the cure seems to be permanent the patient may then be discharged; otherwise a repetition of the treatment is necessary."[1]

Change of Climate.—The theory that tuberculosis can be speedily eradicated or more successfully treated by establishing hospitals and sanatoriums in certain localities is fallacious in the extreme. Back of tubercle bacilli are causes which are operating to produce malnutrition and a lowered vitality. The people need to be taught how to live rightly. Instead of more sanatoria, let us have schools of physiology and hygiene, and instead of introducing military drill let the public schools teach cooking and dietetics.

Climate undoubtedly exerts some influence over the processes of nutrition, but it has been greatly overrated as a curative agent in pulmonary tuberculosis.

Modern methods of scientific treatment, combined with a liberal diet of good nourishing food and several hours spent each day in the open air, are worth far more than any change of climate can possibly be to the vast majority of sufferers from this disease.

[1] Dr. Von Ruck.

Length of Time during which Treatment Should be Continued.—If eternal vigilance is the price of liberty, eternal patience and perseverance upon the part of both physician and patient are the price of success and of cure in connection with pulmonary tuberculosis. The treatment must be continued, not only until the tubercle bacilli have disappeared, but until the general condition and nutrition of the patient have been restored.

A plan of treatment which combines the hygienic, the mechanical, the topical, and the medicinal is full of hope for those who suffer from this disease. The day is not far distant—indeed it has already come—when a large class of patients may be led to hope not only for a temporary improvement in their condition, but for a radical cure for their disease.

I have treated during the past year twelve cases of tuberculosis; six of these were cases of early tuberculosis and six cases of advanced tuberculosis, *i.e.*, cases in which either consolidation or cavities were recognized. Of the early cases, two have apparently recovered and three more are nearly well, while all of the others have been greatly benefited.

Report of Twelve Cases.—Case I.—Mr. B——, aged twenty-eight, works in tobacco factory. This patient presented himself at my clinic at the department of out-door poor, Bellevue Hospital, in March, 1894. He complained of cough, night sweats, loss of flesh, and profuse expectoration. He had been taking cod-liver oil and creosote for six months with no apparent benefit. Examination revealed prolonged expiration with fine râles over the whole upper lobe of the right lung. The sputum showed tubercle bacilli. In this case the cod-liver oil and creosote were continued and the patient was given one-twentieth of a milligram of tuberculin three times a week by hypodermic injection. This treatment was continued for five months. The patient improved steadily, the cough gradually became less, the expectoration ceased, the appetite improved, the night sweats stopped, and there was a marked increase in weight. The treatment was discontinued for two months and then resumed, intrabronchial injections three times a week being added.

This treatment was continued for six months longer, when, all the active symptoms having disappeared together with the tubercle bacilli, the patient declaring that he felt perfectly well, he was discharged cured. This patient has since been kept under observation and is to all appearances in perfect health.

Case II.—Mr. P——, merchant, aged thirty, had measles in April, 1896, from which time his general health has been much impaired. He began to cough about July, 1896. At the time when he came under observation he was expectorating about two ounces daily, temperature ranging from 99° to 101.6° F. Examination revealed prolonged expiration over the apex of the left lung, with slight roughness of the breathing sounds. The sputum contained tubercle bacilli. This patient was treated by intrabronchial injection, hypodermics of tuberculin, and the pneumatic cabinet. The treatment was continued daily and the patient steadily improved until November 27th, when he suddenly developed pneumonia after an exposure to cold. For three weeks the treatment was discontinued with the exception of the intrabronchial injections, which were repeated two or three times a week. At the end of the third week the full treatment was resumed and continued daily, and the patient improved all of the time until February 18th. An examination of the sputum upon that date showed that the tubercle bacilli had disappeared. Treatment by intrabronchial injection and the pneumatic cabinet was continued, however, until March 17th, when, the active symptoms having all disappeared, the patient was discharged apparently cured.

Case III.—Mr. S——, pilot, aged thirty-four. This patient came under observation in the lung department of the New York Throat and Nose Hospital, August 28, 1896. No definite history of his previous condition was obtained. He complained of cough, expectorated freely, was losing flesh, and the sputum contained tubercle bacilli. The trouble was located in the apex of the right lung. This patient was treated three times a week by intrabronchial injection, hypodermics of tuberculin, and the pneumatic cabinet. This was continued until December 26th, when, the active symptoms having disappeared together with the tubercle bacilli, the treatment was discontinued. With the exception of a slight cold, this patient has continued to improve and is now to all appearances in perfect health.

Case IV.—Mr. B—— had pleurisy in the right side in September, 1895, and had not been well since. He complained of cough, rise of temperature, and expectoration. Examination revealed consolidation of the middle lobe of the right lung and the sputum contained tubercle bacilli. Treatment has been by intrabronchial injection, the pneumatic cabinet, and hypodermics of tuberculin, repeated daily since November 30th. There is a marked subsidence of all of the active symptoms. Respiration is much better and the general condition and nutrition of this patient are greatly improved. He is still under treatment.

Case V.—Mr. H——, aged twenty-nine, plumber, some years ago strained his left side, after which he spat up blood. He has had six hemorrhages, has cough, and expectorates quite freely. Examination revealed prolonged expiration over the left apex, with subcrepitant râles at the level of the second rib, near its junction with the sternum. The sputum contained tubercle bacilli. The treatment in this case has been by intrabronchial injections, the pneumatic cabinet, and hypodermics of tuberculin repeated daily. The cough and expectoration have been much diminished and he has increased in weight. His general health has been much improved. He is still under treatment.

Case VI.—Miss W——, aged fourteen, came under observation December 29, 1896, complaining of cough, loss of appetite, night sweats, and vomiting after meals. Examination revealed prolonged expiration over the upper lobes of both lungs. The sputum showed tubercle bacilli. The temperature ranged from normal to 101° F. The treatment in this case has been by intrabronchial injection, pneumatic cabinet, and hypodermics of tuberculin repeated three times a week, with an occasional dose of sulphate of atropine for the night sweats. Her general health has greatly improved. The night sweats have ceased. She eats well and has gained fourteen pounds in weight. She is still under treatment.

Case VII.—Mr. C——, bookkeeper, aged twenty-four. Family history not very good. Cough for three months. Expectorates freely. Has night sweats. Whole upper lobe of right lung involved. The sputum does not contain tubercle bacilli. This patient has been treated by the pneumatic cabinet, intrabronchial injections, and hypodermics of tuberculin repeated three times weekly since January 9th. There has been a marked improvement in his general condition; cough is less and the expectoration diminished. The night sweats, however, continue. He is still under treatment.

Cases Reported by Dr. Carpenter.—Case VIII.—Mr. ——, aged thirty-five years, German bartender. Cavity at left apex, both lungs diseased throughout, night sweats very profuse, bloody expectoration, breathing very shallow, had lost over thirty pounds in last year, bacilli numerous. This man had been taking creosote three months, with slight improvement, before I used the intrabronchial injections. He has been

steadily improving in every way since and at the present time is working regularly; he coughs very seldom, has no expectoration; night sweats have stopped entirely; he has a ravenous appetite and has gained thirteen pounds in weight. Intrabronchial injections began June 6, 1896. For the past month examination has failed to disclose any bacilli.

Case IX.—Mr. M——, aged twenty-eight years, German salesman. For one year previous to treatment by intrabronchial injection he had a slight cough, and, although he had been under constant treatment, had lost twelve pounds and his condition had not improved. Both lungs were affected, and he had night sweats two or three times a week. On September 3d this patient received the first intrabronchial injection which I repeated three times a week. Night sweats have entirely disappeared; he coughs very little, principally in the morning after getting up; the expectoration is very slight and his appetite is much improved. The patient looks much better and shows improvement in every way. October 7, 1896, says he has gained four and one-half pounds in the past month. Still under treatment.

Case X.—Mrs. M——, aged twenty-seven years, married three years, had a cough for over one year. Slight expectoration; occasional night sweats, not very severe; bacilli found in expectoration not very numerous; slight dulness found over apices of both lungs; has tuberculous laryngitis. Intrabronchial injections began August 15, 1896, and were repeated three times a week. Throat symptoms began to improve from the beginning; cough is much relieved; appetite has returned. October 7, 1896, has not had a night sweat in over two weeks; her breathing is much freer. Still under treatment.

Case XI.—Mr. S——, aged thirty years. Marked consolidation at the apex of the left lung; nodules throughout both lungs. He also has tuberculous laryngitis. Numerous bacilli were found. First intrabronchial injection June 16th; these were continued daily, beginning with one-half drachm and increasing to two drachms; creosote internally, beginning with three drops and increasing to ten drops three times a day. June 23d, cough softer and easier; expectoration more free; throat feels much better; night sweats diminished. September 28th, cough much improved; expectorates very little; has not had a night sweat in six weeks; throat does not bother him at all; has gained five and one-half pounds in weight; about half the previous number of bacilli found in sputum.

Case XII.—Mr. S——, aged thirty years, salesman, had been sick six months. Severe cough and night sweats, profuse expectoration, gradual emaciation. Took aseptolin without any improvement whatever. First intrabronchial injection June 1st, repeated daily until July 1st, then discontinued because he was feeling so well. At the first examination bacilli were quite plentiful. June 25th, bacilli were very few. After the injections had been discontinued for two weeks bacilli became more numerous again and he dropped back into his old condition. He went to the country July 15th, and I have not seen him since. I believe in this case that if patient had continued treatment a good result would have been secured.

Iodoformism, after wounds and operations, and especially burns due to a localized or generalized reflex polyneuro-dermatitis, has been studied by Tussau. After a period of toleration in which the wound does well an inflammatory area develops at the periphery of the wound and a lymphangitis may develop in a limb, followed by necrosis which may threaten loss of limb if not of life. Iodoformic herpes is only the first stage of this reflex polyneuritis.—*Dublin Medical Journal.*

A DISCUSSION OF THE COMPOSITION OF CREAM AND A CONSIDERATION OF THE DESIRABILITY OF ESTABLISHING A STANDARD.[1]

By J. H. HUTCHINSON, M.D.

"Modified milk" has become such a routine prescription for bottle-fed children that all of its components deserve the most careful study, and one of them, cream, has apparently as yet had less than its share. For those cases in which the condition of the stomach demands more than ordinary care the milk laboratory has demonstrated its usefulness, even perhaps its necessity; but laboratory milk is expensive and its use is therefore practically limited. Different pædiatrists have taught us how the materials for home modification may be supplied by letting the milk stand a sufficient number of hours and then skimming it for the cream; by this means a cream of sufficiently nearly constant composition can be obtained, but this method delays the preparation of the bottles of milk to a somewhat late hour in the day, and there seems to be no reason why the cream required should not be obtained directly from the dairy, just as the milk is obtained. There is also sufficient economic reason for an inquiry into the amount and character of a food material received daily by an immense number. Led by those considerations, I have tried to find out something of the present condition of the cream supply in this city, and, as published matter on cream is rare in medical literature, I have turned to the reports of the dairy division of the United States department of agriculture and to the reports of various agricultural experiment stations. This information has been supplemented by much most valuable advice from Dr. E. J. Lederle and also from Chemist Martin, of the city health department; from Mr. E. N. Ehrhart, sanitary engineer; Mr. J. A. Howell, of the Howell Condensed Milk and Cream Company; Mr. L. B. Halsey, of the Sheffield Farms Company, and others.

The Milk Reporter, the official journal of the milk trade, states that during 1896 there were received in New York City practically nine million quarts of cream, a daily average of nearly twenty-five thousand quarts, and three hundred and twenty million quarts of milk. The district which supplies this immense amount is shown by the statement that about two million cans came over the D., L., & W. R. R., one and a half millions over the Erie, the same over the Ontario, and the rest in smaller amounts over nine or ten other roads. Orange, Dutchess, Chenango, and Delaware counties supply over one-half of the total amount sent. The farthest point from which milk is shipped to New York is over three hundred and twenty-five miles away, and the journey to the city occupies about twenty-four hours. Much the greater part, however, is brought in less than ten hours.

Cream comes to the city either in forty-quart tin cans or in glass bottles; cans are most used on account of their smaller freight charges (twenty-eight cents for forty quarts in a can, forty cents for the same amount in bottles). According to its method of manufacture it is divided into two classes: gravity, *i.e.*, hand-skimmed, or Cooley cream, and machine or separator cream. The proportion of machine cream to the gravity is said to be about ten to one. About half of the cream supply of New York is sold to families, the other half is sold to ice-cream factories, bakers, and confectioners. The immense amount used in these trades is shown by the fact that during the four summer months of May, June, July, and August, 1896, there was received a total of about four million

[1] Read before the section on [illegible] meeting of the Academy of Medicine, May 25, 1897.

six hundred thousand quarts of cream, *i.e.*, more than in the other eight months put together.

The gravity cream, which is almost entirely taken by the ice-cream makers, restaurants, and hotels, varies in fat content, although the great bulk of it ranges from twelve to sixteen per cent. It is usually raised by gravity in "Cooley" cans, which have a faucet at the bottom by which the lower part of the contents can be drawn off without disturbing the upper; these are submerged in cold water for about twenty-four hours and then skimmed by drawing off the milk below the cream. The cream thus collected does not keep well and there is said to be frequently added, therefore, a composition of borax and salicylic acid, called "Preservitas."

The machine cream is separated from the milk by the use of some one of the several centrifugal separators. It can be made very quickly, and therefore does not need the twenty-four hours practically necessary for gravity cream. It can usually be delivered in from twenty-four to thirty-six hours from the cow, but, as it keeps well, it is frequently not shipped, in winter at least, for ten days or two weeks, and sometimes for even longer. Most cream delivered in New York is at least seventy-two hours old before it reaches the city. If there happens to be a surplus, the extra cream is kept buried in ice for days. Nearly all the cream furnished to private families is separator cream, and, though brought to the city in forty-quart cans, is put into half-pint, pint, and quart bottles before delivery. Bottling in the city is now under the regulation of the health department, and must be done in such a manner as to prevent "contamination by dust from the streets or by other impurities." Moreover there are certain regulations as to cleansing and caring for the bottles. Certain dairies, however, send their cream to the city in bottles filled and sealed while the cream is fresh. Milk bottles are prepared in the same way, and if these are carefully carried much less time is required for the cream to reach the top after delivery than when the bottles are filled just previous to delivery. The practice of supplying milk and cream in bottles is now about twenty years old, and in that time the methods have been immensely improved. When the bottling is done in a properly equipped laboratory under sanitary regulations there is no doubt that the bottles form the best and safest means of delivering the milk, but when the bottling is done in an unsuitable place, with improperly cleansed and unsterilized material, there is also no doubt that the bottling system is one of the most objectionable. In 1896 less than five million quarts, *i.e.*, less than one-sixtieth of the whole amount, came to the city in bottles, but as there are about 1,700,000 bottles in daily use in the city the immense importance of supervision of these possible infection carriers is evident. Clubs, hotels, restaurants, and ice-cream factories also get the machine cream, but usually have it supplied in cans. The great bulk of this variety is 20 to 30 pound cream, but there are prepared and shipped with greater or less regularity 15, 18, 20, 25, 30, 35, 40, 50, and even 55 pound cream. This means that the number of pounds specified of butter can be made from a forty-quart can of the cream. That this classification, however, is a commercial one of the roughest character may be seen from the accompanying analyses which have been made of ten samples of each class:

15.75	[illegible]	[illegible]	[illegible]	38.25	46.05
[illegible]	[illegible]	[illegible]	30.50	[illegible]	[illegible]
11.25	13.5	35.70	38.90	37.20	41.70
11.75	18.00	29.90	36.50	36.40	42.88
[illegible]	[illegible]	[illegible]	[illegible]	34.02	[illegible]
14.35	[illegible]	[illegible]	33.33	35.93	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14.35	[illegible]	[illegible]	29.93	37.40	38.23
[illegible]	[illegible]	32.15	26.95	[illegible]	38.25
[illegible]	[illegible]	[illegible]	26.85	42.35	42.99
17.85	16.95	33.83	[illegible]	38.93	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	37.59	[illegible]

As will be observed, some 20-pound cream has less fat than some 18-pound cream, and other 20-pound cream has nearly as much fat as some 25-pound cream; moreover, the 25 and 30 pound creams differ in their average fat content by only about one per cent. The inexactness of this classification, however, is probably due to the fact that there is yet no considerable well-formulated demand for a cream of a known fat content. The Walker-Gordon milk laboratory, which furnishes two classes of cream, one containing sixteen per cent. of fat and the other thirty-two per cent. of fat, has a patronage which is almost the only exception. Even the rough division specified is used almost exclusively by the wholesale dealers, and the usual reply of the retail dairy or milk men, when asked for information about the cream, is either that they have but one grade and that that is "a good cream, good enough for anybody," or, in the case of some special dairies, that they have two grades, a "light" and a "heavy" cream. The exact composition of the particular cream or creams is usually unknown to them. Every dealer knows practically how good a cream must be in appearance, that is, to sell in his neighborhood; and he secures from the wholesale dealer a cream having about that appearance. Whatever the character of the cream, the retail price at any of the fifty-five hundred milk stores in New York is nearly the same, about five times as much as milk, *i.e.*, it is approximately forty cents a quart through much of the city, though seventy-five cents and ten cents per quart have been noted as extremes. The wholesale rates for ordinary cream vary with the price of milk from $4.50 to $6.00 for a forty-quart can. Heavy (40-pound) cream varies from $11.00 to $13.00 per can. Dr. Van Slyke, chemist of the New York Agricultural Experiment Station, has pointed out that everywhere in the State "the sale of cream is absolutely without control or supervision, except that the agricultural law defines pure cream as cream taken from unadulterated milk. Anything passes as cream which the consumer is willing to accept, whether it contains ten, fifteen, twenty, or twenty-five per cent. of fat."

Such is the present state of the cream supply, but not a necessary state. Any grade of cream required may be easily furnished with a centrifugal machine, simply by supplying the milk to the separator at a greater or less rate of speed. The amount of fat in the milk used for the cream must be known. For example, if the milk contains four per cent. of fat and a twenty-pound cream is desired, as many quarts of the four per cent. milk must be used in the separator as four is contained in twenty—that is, five. Fourteen cans of average milk are necessary to make one can of fifty-pound cream, twelve cans of milk to make one of forty-pound cream, and so on.

I cannot forbear saying a word here of the by-product in the production of cream, the skimmed milk. This has the following average composition: Water, 90.34; fat, 0.15; sugar, 3.98; casein, 4.80; salts, 0.78. At present it is used largely in the manufacture of skim-milk cheese, and also to some extent in feeding calves and pigs, and is sold to farmers at ten cents for a forty-quart can. An immense amount of this nutritious and readily digestible food could probably be sold in New York at a price which would make it one of the cheapest of good foods were it not for the clause in the sanitary code which says that "no milk which has been . . . changed in any respect . . . by

the removal of cream shall be brought into, held, kept, or offered for sale at any place in the city of New York." This evidently forbids the use of milk freed from fat by a milk laboratory. That skimmed milk may be sold by unscrupulous dealers as whole milk hardly constitutes sufficient reason for prohibiting its sale for what it is.

The factors necessary for the production of cream of definite fat contents are a skilled dairyman, an efficient separator, milk of uniform composition (to obtain this the day's milk supply must be put in a vat, thoroughly mixed, and its composition tested), and a Babcock tester for the rapid determination of the amount of fat. This last instrument is in brief a centrifugal apparatus containing a bottle in which the cream to be tested in placed together with sufficient sulphuric acid to set free the entire fat content. In less than ten minutes the fat can be all brought into the long neck of the bottle and its total amount read on an attached scale. At my suggestion the Sheffield Farms Dairy Company kindly undertook to produce for a week a cream which should contain uniformly forty per cent. of fat. This cream was made daily; a specimen was analyzed the following day by Dr. Lederle and the following list of percentages resulted: 41.20, 38.50, 40.50, 39.00, 40.80, 38.50, 41.00, 40.00. No specimen was more than one and one half per cent. from the prescribed forty per cent., and an error of that size in cream of that grade may be safely neglected.

Accepting then this as a demonstration that cream of a uniform composition can be produced, and noting the statement of Mr. Halsey, the president of the company, that it can be produced without greatly increased cost, it remains to be observed that cream of one composition does not always have the same appearance. Cream thickens with age, and it is therefore a very frequent practice, especially in cold weather, to hold back cream from delivery for several days that it may appear richer. This increase in thickness of the cream is due to bacterial growth. Russell reports that, in seven samples of cream taken when the cream was from six to eighteen hours old, the average content was a little over a million bacteria per cubic centimetre; and that in fifteen samples taken when the cream was from thirty to forty-two hours old, the average content was somewhat over nine million bacteria per cubic centimetre. Still it should be added that the work of the last few years has emphasized the fact that the number of bacteria present in milk is of very little significance. The widest possible variations in the numbers seem to be found under almost identical conditions. The difficulties in the way of obtaining from the cow milk without bacterial contamination are extremely great and practically insurmountable. The milk even when first drawn from the cow usually contains bacteria, probably on account of the ease with which the milk is contaminated in the milk duct. On the other hand the variety even of non-pathogenic bacteria is all-important. Considerably over two hundred distinct types of ordinary milk bacteria have been described in literature up to the present time. It has been shown, for example, that it is to the growth of a few well-studied species that the aroma and flavor desirable in cream and butter are due, and it is not less true that the disagreeable flavor and odor occasionally noted in cream are due to other bacteria. Conn's bacillus No. 41 has been shown to give butter the flavor which is known among experts as that of "June butter." The effect of sterilization or pasteurization is to make a cream which is thinner in appearance than unsterilized or unpasteurized cream. This effect has been regarded as a detriment, and at the Wisconsin Agricultural Station it has been shown that cream can be artificially thickened by adding a solution of cane sugar in lime water, that is a sucrate of lime, "viscogen" so-called, with, it is said, no injurious results to the cream.

The physical action of separation is of value in diminishing the number of bacteria in cream, for a varying proportion is caught in the slime of the separator. Many other bacteria, however, are carried over into the skimmed milk, and, according to Dr. Moore, especially into the cream. For example, examination of milk artificially infected with bacilli of tuberculosis, and then separated, showing that in 16 per cent. of the preparations of the skimmed milk, and in all of those of the cream, tubercle bacilli were found. They were also more numerous in the preparations made from the cream than in those made from the milk, and this result was always the same, without regard to the rapidity of revolutions of the separator. It has been shown too along the same lines that butter may serve to carry typhoid fever, tuberculosis, and certain other germ diseases. Separation, therefore, is not an adequate means of obtaining a sterile cream.

That, in the absence of the few desirable bacteria, it is a distinct advantage to have cream as nearly sterile as is possible without any alteration in its physical characteristics, hardly needs argument. Sterilization by any method now in use is known to change the character of cream so as to make it unsuitable for many purposes, notably for use in infant feeding. That pasteurization probably modifies the milk somewhat is shown by the fact that the coagulum produced by hydrochloric acid is different in character in pasteurized milk from that in fresh milk. There should, however, in pasteurized milk be no "cooked" taste. The temperature at which this taste appears is not a definite and distinct point, however, but varies somewhat with the treatment given to the fluid: moreover a marked cooked taste may be perceptible immediately after heating, and then disappear when the milk is cooled. Nevertheless, milk heated above 70 C. usually has a slight cooked taste. That pasteurization as usually performed leaves a considerable number of bacteria is shown by Russell, who found as an average of fifty-eight samples of unpasteurized twenty-five-per-cent. cream 8,700,000 bacteria per cubic centimetre, and in the same pasteurized an average of 24,250 bacteria per cubic centimetre: he has isolated fifteen species of bacteria from pasteurized milk and cream, numerous enough to make it certain that they were derived from the milk. Of these only six predominated; and by a study of these he came to the conclusion that to a large extent the lactic-acid bacteria are destroyed by pasteurization, that half of the ordinary forms present seem to have no effect on the physical character of the culture medium, and that the bulk of the remainder belong to the rennet-forming bacteria. Bacteriological study of pasteurized cream has shown that old cream, which is more apt to have spore-bearing germs, is not at all well suited for pasteurization. It has sometimes happened, for instance, that cream pasteurized on Monday has failed to keep as long as that pasteurized on the Saturday previous. This was due of course to the large number of spores present in the older cream. The cost of pasteurizing milk on a large scale is less than that of sterilizing the milk; and, as the result of a careful study of the subject at the Wisconsin Agricultural Station, Russell says that the actual cost of pasteurizing cream is merely nominal, although it varies somewhat under different conditions. Where a business of any magnitude is carried on, the cost of operating the plant could not, under ordinary conditions, be more at most than a very few cents a gallon.

To the energy and interest of Dr. H. L. Coit, of Newark, is due the supply to that city of what is called "certified milk;" a committee of physicians stated

formally certain conditions, on the acceptance and the proper carrying out of which by a milk dealer under inspection they were willing to allow him to mark the milk "certified," and to furnish a certificate, signed by this committee, as to the character of the milk. Would it not be possible here in New York to establish a similar process of certification for cream; that is, might not a committee of physicians lay down certain conditions of production, of analysis, and of care, under which they would permit the use of the name "certified cream"? Collier in a comparative study of the profits derived from selling milk, butter, cheese, and cream finds that selling cream is by far the most profitable; and points out that the reason is that the consumption of cream is comparatively small, consumers regarding it as a great luxury, and that they are not aware of the fact that it would often be more economical to purchase milk and raise their own cream. It may be mentioned that the milk experts have for some time advocated the sale of both milk and cream on the basis of the fat content; then a three-per-cent. milk, for example, would have a certain price, a three and one-half per cent. a higher price, a four-per-cent. still higher; while there might well be grades of milk fortified by addition of cream which should be six per cent., seven per cent., and so on. Then every person selling milk at retail should be compelled by law to place in conspicuous figures on each can or vessel, in or from which milk is sold, the percentage of fat in the milk; he should be required to guarantee this, and be prosecuted if an examination showed the milk to be below the guarantee. Purchase of milk and cream on this basis of fat content is actually carried out at the present time in many cheese factories and creameries.

The main propositions of this paper are, in brief:

1. Cream in this city is at present milk containing an amount of fat greater than five or six per cent.

2. Cream containing any desired percentage of fat could be regularly furnished without material increase in cost.

3. Cream is now usually old when it reaches the consumer.

4. Cream as fresh as milk could be furnished to the consumer.

5. Cream is now usually so laden with spore-bearing germs at delivery that pasteurization is to a great extent ineffectual.

6. Cream could be pasteurized while fresh at the dairy at little cost.

7. An easy means of securing a supply of cream of known composition, age, and bacterial condition would be certification by a responsible body.

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THE CREPITANT RÂLE AN INTRAPLEURAL SOUND.

By F. A. BURRALL, M.D.,

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In the MEDICAL RECORD, of June 5th, ult., is a clear and instructive article by Dr. Louis H. Jones, of Atlanta, on the seat of the crepitant or vesicular râle, which is worthy of careful reading.

I think this is especially true, because, notwithstanding all that has been said and written concerning this râle, the method of its production still remains somewhat unsettled. Not very long since, at a meeting of the Academy of Medicine, one of the speakers referred to the crepitant râle as diagnostic of pneumonia, which showed that this view is still existent. The older teachings were that the crepitant râle was pathognomonic of pneumonia, but it seems to me that an impartial examiner of Dr. Leaming's writings on this subject must arrive at an entirely opposite conclusion. My friend, Dr. J. H. Anderson, first called my attention, several years ago, to Dr. Leaming's views. They were the result of careful and continuous study, and have been of the greatest service to me in my practice. About the time when I first heard of them I had been treating a class of cases in which the febrile reaction and constitutional disturbance were not very marked, in which the crepitant râle was present, yet they were not pneumonia and would run their course in about ten days.

I thought them, yet in an unsatisfied way, to be subacute œdemas of the lungs, but when in the light of Leaming's teachings I discovered plastic exudation with intrapleuritic râles the diagnosis cleared up. Since that time I have seen fewer cases of pneumonia, and can conceive one reason why this should be so, with a more satisfactory knowledge of the mechanism of the crepitant râle. I cannot but think also that one reason why I found so few of my cases of influenza complicated with pneumonia must be that the teachings of Leaming led me to place the vesicular râle of "acute epidemic bronchial catarrh," or influenza, within the pleural cavity instead of in the lung. My own experience, which, like that of most general practitioners, has embraced many cases of the grippe during recent years, leads me to believe that if the elements of rest, with early and steady support, as well as careful avoidance of hepatic obstruction (a term used for want of a better), be avoided, the grippe is not very likely to run into pneumonia.

Dr. Leaming was very confident of the correctness of his views and I have often talked with him upon the subject.

With regard to the diagnosis of this râle and its situation, Dr. Jones writes that this sound "lacks the element of distance. While not a loud sound, yet the ear placed in contact with the naked chest wall will recognize that it hears a sound which is immediately beneath the surface and not produced deep down in the lung tissue."

I would suggest that additional aids in the study of the vesicular râle are found in the phenomena of superficial dulness with light percussion over an area in which the râle is audible and deep resonance with harder percussion over the same area. A reasonable explanation is that the superficial dulness proceeds from percussion over the layer of plastic exudation, while harder percussion over a lung not engorged develops a resonant sound.

It is very desirable that, with our present knowledge on this subject and our improved methods of investigation, the mechanism of the crepitant or vesicular râle should be fully and clearly understood.

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THE REGULATION OF MARRIAGE.

DR. E. T. RULISON read a paper on this subject before the Academy of Medicine of Buffalo, last winter, in which he gave a brief history of marriage and called attention to the Jewish canonical laws on the subject of the marriage contract. He showed that to the care exercised in marriage is due the constant and wonderful progress that this race has made and its prominence commercially, politically, and intellectually. The Greeks selected their wives with a view to the health and vigor of their children. Parentage is too serious a question to be left to chance, as is now, at least in this country, usually the case. Any one who is in doubt as to the influence of heredity should read Ribot's work on this subject. Darwin says: "Man scans with scrupulous care the character and pedigree of his horses, cattle, and dogs before mating them, but when it comes to his own marriage he rarely or never takes any such care." Both sexes ought to refrain from marriage if they are in any marked degree inferior in mind or body; but such hopes are Utopian and will never be realized until the laws of heredity are understood.

The low, diseased, and vicious marry early and beget a numerous progeny, while the thrifty usually marry later and have fewer children. With savages the weak in mind and body are soon eliminated, but we do all in our power to prevent this elimination by building asylums and hospitals, and using every effort to prolong their lives. Dr. Rulison gives alarming statistics as to the increase of the criminal, insane, and defective classes, and shows the great expense of their maintenance. Simply to name inebriety, tuberculosis, syphilis, idiocy, and epilepsy is to remind us of the fact that the burden we are carrying is almost overwhelming. "You who were fortunately born must be the keeper of your dangerous though perhaps unfortunate brother man, or he will overpower and ruin you." It should be the first duty of the State or nation to protect the lives of future generations, as well as the lives and property of those now living. The law protects us against scarlet fever, diphtheria, and small-pox; why not, he asks, against ill-advised marriages, the results of which are almost as serious? Education has done nothing for us in this direction so far. Wealth and social position are important factors in making up the sum of human happiness, but how insignificant when compared with health! "If we are to be left perfectly free to follow our own impulses, or ambitious promptings to attain wealth or social position through matrimony, regardless of physical consequences, then I can see no relief for the great majority of our people, but perpetual ill-health and misery." Our schools, pulpits, and periodicals might enlighten our boys and girls, might teach them that parentage is the prime object of marriage, and prepare them to assume the responsibility.

In Brazil, it is said, there is a self-imposed law among the higher classes in relation to marriage. The man about to marry is compelled to furnish a certificate from one or more physicians to the effect that he is free from diseases of a certain character and from signs of diseases that could be transmitted to offspring. The physician consulted must testify that, as far as he can learn, the union is in accord with the laws of sanitation. At a recent woman's congress held in Paris resolutions were adopted to the effect that all families must secure certificates of health from intending sons-in-law in order to guard the daughters of the Republic from risk and to prevent hereditary maladies in the fathers of a later generation.

"As society is at present constituted and controlled, the unhealthy and vicious class is increasing more rapidly than the desirable one. In the days of Malthus the danger lay in the population increasing more rapidly than the means of subsistence. This danger no longer threatens, but a more serious one in the survival and overwhelming increase of imperfect physical and mental beings."

Dr. Rulison suggests that a medical staff be appointed to examine all boys and girls from twelve to fifteen years of age, relative to their physical condition and family history and that records be kept. He suggests three classes: (*a*) Those being physically and mentally sound, of good habits, and having no history of hereditary disease for at least three preceding generations. (*b*) Those having the same qualifications but with a family history extending to the grandparents only. (*c*) All those not included in classes *a* and (*b*). No one should be allowed to marry outside of the class to which he or she belongs. This would tend to make classes (*a*) and (*b*) continually stronger and better. Class (*c*) would at first predominate, but, if those included in it were not permitted to marry outside of their class, nature in a few generations would solve the problem by eliminating them.

Perhaps the time will come, in the course of the evolution of the human race, when methods such as those suggested by the author can be put in practice. But by the time mankind is ready to adopt this marriage regulation, disease will doubtless have been banished by other means, so that the course of true love will continue after the present fashion, uninterrupted by committees of unromantic and meddlesome doctors.

The Sale of Cocaine, except upon the written prescription of a legally qualified physician or dentist, has been forbidden by an act of the Colorado legislature.

UNUSUAL MODES OF POISONING WITH LEAD.

In view of the manifold and obscure channels through which lead may enter the system, as well as the difficulty oftentimes of referring the symptoms of intoxication to their proper cause, especially when a knowledge of contact with the metal is to be acquired only by direct and searching inquiry, the report by Pel, of Amsterdam (*Centralblatt für innere Medicin*, June 12, 1897), of three uncommon modes of poisoning with lead is not without interest and importance. The first case occcurred in a shoemaker, nineteen years old, who suffered from pain in the testicles, which was increased by walking. The pain was constant, though marked by exacerbations. In the course of three months pain appeared also in the right shoulder, with corresponding amelioration of that in the testicles. For several days there had also been pain in the hypogastrium. The bowels were constipated; the appetite was impaired. The patient was emaciated and sallow. Examination of the gums disclosed the presence of a blue line. There was at times difficulty of micturition; the urine contained urobilin and hæmatoporphyrin. Under treatment with opium, purgatives, and potassium iodide, improvement soon followed. On inquiry it was learned that the patient had been employed in the manufacture of shoes for the government, using tinned nails, in the preparation of which lead entered. For convenience' sake, the man held the nails in his mouth, from which he removed them one by one as required. It was not known that other men employed in the same factory exhibited symptoms of lead-poisoning. The neuralgic pains were considered to be of toxic nature.

The second case occurred in a cigarmaker, forty-four years old, who for fifteen months had suffered from rheumatic pains in the arms, legs, back and hypogastrium, and from headache. The man was nervous and sleepless and constantly languid and tired. The bowels were torpid, the appetite was poor, the complexion sallow, and the nutrition impaired. There was a blue line at the margin of the gums and the urine contained urobilin and hæmatoporphyrin. In this case it was learned that the patient in the process of making the cigars rolled them upon a board covered with a tin plate, in the composition of which lead entered. Upon this plate also the cigars were cut with a knife which the man was in the habit of holding in his mouth.

The third case occurred in a man, twenty-nine years old, who had been employed for fifteen years in embedding diamonds in a warmed lead mass, manipulating this with the fingers moistened with saliva. On account of impaired eyesight the man was compelled to give up this work and seek employment elsewhere, becoming a clerk in a bakery. In the course of five months symptoms of acute lead poisoning made their appearance—nausea, vomiting, colic, constipation, increased arterial tension, typical urinary phenomena, and a blue line on the gums. Cases of similar kind have been previously observed in Holland, though rarely.

These cases serve to illustrate some of the less common modes of poisoning with lead, and their recital should stimulate the clinician always to the most searching inquiry in the determination of the origin and nature of apparently simple and uncomplicated cases, as well as those of greater complexity and obscurity.

THE POPE ON WHAT TO EAT.

The Pope in his extreme old age has been giving some sound advice in the matter of food. Although the dietary set before us by the Pope is not an especially luxurious one, still there are many persons who would be only too glad to be able to follow his advice. In fact it will strike most persons who read it that the Pope is not a bad judge of what is good for him, and is himself a proof of the efficiency of his maxims. He writes: "Pay attention before all to cleanliness, that the table appointments are spotless, glass bright, napery immaculate, that from the cellar comes the purest wine of the Albanian Hills, which exhilarates the spirit and drives away trouble: but do not trust Bacchus, so do not be sparing in diluting wine with water; obtain from healthy grain well cooked bread, eat sparingly of chicken, lamb, and beef which are most nourishing to the body; meat should be tender without abundant sauces or root vegetables, which spoil it; fresh fruits are excellent whether raw or slightly cooked: an abundant quantity of foaming milk, it nourishes infants and assists old age; also honey, celestial gift, but this Ibleo nectar [from Mount Ibla in Sicily] use frugally; add to this the sweet herbs and fresh vegetables that the garden supplies; add ripe fruit according to the season, and especially tender apples, which with their pink tints brighten the banquet; lastly comes the drink, which in hard seeds fertile Moka sends you, softly sipping the black liquor that comforts the heart." From the foregoing it would appear that Leo is a disciple of Horace. Certainly the menu has quite an Horatian flavor.

A Proposed College for Medical Missionaries.—The guild of St. Luke, in London, has under consideration a proposal to establish a college of St. Luke for men training as medical missionaries in connection with the Church of England. The *British Medical Journal* says that it is proposed that the institution should be purely residential. Its principal would be a medical man, and it would have a chaplain, while the students would receive their medical education at the London medical schools. Those who intended to become medical missionaries after qualification would be supported by the guild or other society, entirely or in part, but other students would also be received. At a recent meeting a discussion took place on the subject, and the hope was expressed that such a residential college would be the means of providing suitable men for many medical posts in connection with mission stations which it had hitherto been difficult to fill.

News of the Week.

The Surgeon-General of the Navy.—The term of service of Surgeon-General Tryon has expired, and it is expected that the announcement of the appointment of his successor by the President will soon be made. Dr. Tryon has been thirty-five years in the medical department of the navy, and has an enviable record for efficient service at sea and on shore. It is to be hoped that the President will see his way to reappointing Dr. Tryon to the post which he has filled with such credit to himself and benefit to the service.

Yellow Fever on the Gulf Coast.—A fever which has been prevailing for some weeks at Ocean Springs, Miss., on the Bay of Biloxi, and which was thought to be dengue, has been pronounced yellow fever. About two weeks ago the health authorities made an investigation. There had been several hundred cases then, but very few deaths, and a board of experts declared the disease dengue fever. The death rate increased, however, and the symptoms looked more like those of yellow fever; the alarm now became so great that the health authorities again convened, and, after a searching investigation, pronounced the disease yellow fever. It seems probable that there was first an epidemic of dengue and that the yellow fever was brought in later, but passed unobserved for a time in the midst of the cases of the prevailing fever. The Marine Hospital service has sent several surgeons to the place to examine the cases and to take the necessary precautions if the diagnosis of the State health authorities should be confirmed.

The Tri-State Medical Society of Alabama, Georgia, and Tennessee.—The ninth annual meeting of this society will be held in the senate chamber of the State Capitol, Nashville, Tenn., Tuesday, Wednesday, and Thursday, October 12, 13, and 14, 1897. The secretary of the society is Dr. Frank Trester Smith, of Chattanooga, Tenn.; the president, Dr. W. F. Westmoreland, of Atlanta, Ga.; and the chairman of the committee of arrangements, Dr. W. D. Haggard, Jr., of Nashville, Tenn.

A Collective Investigation of Infantile Scorbutus.—The American Pediatric Society is making a collective investigation of infantile scurvy as occurring in North America, and earnestly requests the co-operation of physicians, through their sending of reports of cases, whether these have already been published or not. No case will be used in such a way as to interfere with its subsequent publication by the observer. Blanks containing questions to be filled out will be furnished on application to any one of the committee. A final printed report of the investigation will be sent to those furnishing cases. The committee is composed of Drs. J. P. Crozer Griffith, chairman, 123 South Eighteenth Street, Philadelphia; William D. Booker, 853 Park Avenue, Baltimore; Charles G. Jennings, 457 Jefferson Avenue, Detroit; Augustus Caillé, 753 Madison Avenue, New York; and J. Lovett Morse, 317 Marlboro Street, Boston.

The Fate of the Idiot.—The *Journal of the American Medical Association* has in a recent issue a long and unconvincing argument in support of its proposition to kill all idiots. This is, of course, a very easy solution of the problem of what to do with these poor creatures, and the same remedy would be extremely efficacious in the case of the incurably insane, the crippled, sufferers from cancer, the blind, the aged, and all who are more or less of a trouble for society to take care of. We trust, however, this is not to be regarded as an opinion stamped with the approval of the trustees or any other officers of the American Medical Association.

The British Medical Association.—At the closing session, on Friday of last week, Dr. Saundby, president of the British Medical Council, introduced a motion recommending the election of the Governor-General of Canada, and Lord Strathcona and Mount Royal, to honorary membership in the association. Dr. Roddick, the retiring president, introduced a resolution indorsing the scheme for the organization of a system of district nursing in the isolated portions of Canada. He remarked that many people refused to emigrate to Canada on account of the great distance they would be, particularly in the Northwest, from nursing and medical assistance. It was contemplated to establish an order of nurses which would work throughout the dominion, and the name Victorian Order of Nurses had been suggested by the Countess of Aberdeen, with whom the scheme originated. On Saturday the members of the association went on an excursion to Ottawa, where they were entertained by the local medical profession, and after a luncheon were shown through the Parliament buildings and taken about the city on electric cars.

Tuberculosis at an Agricultural College.—The board of regents of the Kansas State Agricultural College at Manhattan has discovered that many of the cattle, sheep, and hogs kept on the college farm are infected with tuberculosis. Several of the attendants who have been employed at the stables are seriously ill, and one who has had more direct charge of the cattle is not expected to live, having been suffering with the disease for several months. Others connected with the college, but who have not been brought into direct contact with the diseased cattle, are also tuberculous, and it is thought that they may have become infected through drinking the milk of diseased cows.

Dr. Luys, of Paris, died recently at the age of sixty-seven years. He was an extreme believer in the wonders of hypnotism, believing that he could narcotize people by holding near the brain a closed vial containing morphine. Some years ago these cases were investigated by Mr. Ernest Hart, and it was shown that the subjects wilfully deceived the too credulous experimenter.

A Woman's Medical Society in Europe.—There are between thirty-five and forty medical women in Switzerland, and a number of them recently got together and founded a club of female physicians, which is said to be the first of its kind in Europe.

Diarrhœa in London.—The prevalence of and mortality from diarrhœa in London among children under five years of age are exciting much comment. The death rate from this cause is higher than it has been for very many years. By many people it is thought to be due in the poorer portions of the great city to defective drainage, as in children so young the cause can hardly be the one usually given—the consumption of unripe fruit. It really seems that something must be wrong in the sanitary conditions of London, for, in addition to diarrhœa, diphtheria is more rampant than for some time.

The Johns Hopkins University has recently been beaten in a suit against the receivers of the Baltimore and Ohio Railroad, by which it endeavored to establish its claim to be a preferred creditor. The court has decided that such a claim is untenable, and the university will suffer in consequence a considerable reduction in its income.

Honors for Professor v. Kolliker.—The Imperial Leopold-Carolina Academy of German Scientists of Halle has awarded the gold Comenius medal to Professor von Kölliker, of Würzburg, who recently celebrated the completion of his eightieth year and the jubilee of his appointment as professor.

The American Academy of Railway Surgeons.—The next annual meeting of this society will be held in Chicago, October 6, 7, and 8, 1897.

American Electro-Therapeutic Association.—The next annual meeting of this association will be held at Harrisburg, Pa., September 21, 22, and 23, 1897. The preliminary programme contains a list of nineteen papers on a wide variety of subjects.

Typhoid Fever is prevailing to an alarming extent in several places in Germany. In many of the small epidemics the milk supply has been incriminated, and the Berlin health authorities have issued a special warning to the public against the use of unboiled milk.

Cruelty to Convicts.—An investigation into the condition of the convicts in Georgia has revealed the existence of many shocking abuses, both of cruelty and flagrant disregard of sanitary provisions, occurring in private camps, where misdemeanor convicts were leased to individuals in violation of law. Of seventeen hundred and ninety-two misdemeanor convicts, about four hundred are thus hired. The rate of mortality in private camps is about double that in the public camps. In the private camps the law requiring a daily record of the conduct of each convict as a basis for the good-conduct allowance of four days a month is ignored. In one camp thirty negroes and one white convict slept chained together in a close unventilated room, only fifteen by seventeen feet, with the window nailed up. In another camp, at his first visit the inspector found forty-six negroes and fifteen whites sleeping in a room nineteen feet square and less than eight feet high. It is said that the governor of the State contemplates pardoning all of the convicts in private camps, as the only way in which he can rescue them before the expiration of their terms.

Failure of Koch's Rinderpest Remedy.—The government of the Cape of Good Hope is now regretting the money spent in securing Koch to elaborate a protective serum for use against the rinderpest. The undertaking has ended in absolute failure, for the inoculation treatment has had no effect in preventing the cattle from dying of the disease. It is said that Koch is about to return to South Africa to renew his experiments and try once more to make an effective serum. The *Medical Press* says that the Cape government, "has not found that its introduction of a German professor into the colony has had any other effect than that of costing it a large sum of money. Perhaps, upon the next occasion that some official bacteriological investigations are required, it will bear in mind that science made in Germany is no better than science made elsewhere," and, our contemporary might have added, it has of late acquired a decidedly commercial character.

The Study of Apparent Death.—A committee has been formed in Naples for the study of the question of apparent death. The president is Dr. Oscar Giacchi, and the members are Drs. G. Albertolli, F. Bonelli, E. Chiaisio, S. Lanza, F. Conti, L. Lombar, and P. Vandoni, and Miss Elizabeth Berkeley-Barter. The secretaries of the committee are Dr. F. Bonelli and Signor C. Gallo.

The Fatal Bargain Counter.—A woman was killed recently in London in the crush at a bargain sale. The crowd of women was so large and so disorderly that it required the services of twenty-two policemen to hold it in check. The verdict of the coroner's jury was that the woman "died from syncope caused by the exertion and excitement of getting into a bargain sale, and that such death was due to natural causes."

Murders by the Brute Creation in India.—During the year 1896, according to the official statistics just published, 1,133 persons in India died from the effects of serpent bites, and 291 were killed by tigers and other wild animals. The figures are much below those for the preceding years.

Obituary Notes.—Dr. George W. Vogler, of Philadelphia, died at Este's Park, Col., on August 26th, in his forty-second year. He was graduated from the medical department of the University of Pennsylvania in 1876, and was subsequently resident physician in the German and Philadelphia hospitals. Later he became consulting physician to the German Hospital, and was chief of the out-patient department for diseases of women.—Dr. William Brodie died suddenly at Forest Grove, Pa., on September 3d, of nephritis, at the age of forty-two years. He was born in Philadelphia, and was graduated from the medical department of the University of Pennsylvania. After a year's practice in Philadelphia he removed to Pineville, and subsequently to Forest Grove.—Dr. H. R. O'Conner, of Pittsburg, Pa., died at Charles River, Mass., on August 31st. He had been engaged in practice for more than twenty-five years, and was one of the physicians to the Southside Hospital and also a pension examiner.

Society Reports.

BRITISH MEDICAL ASSOCIATION.

Sixty-Fifth Annual Meeting, Held at Montreal, Canada, August 31, September 1, 2, 3, 1897.

Special Report for the Medical Record.

GENERAL SESSIONS.

(Continued from page 340.)

Third Day—Thursday, September 2d.

THE PRESIDENT called the meeting to order at 3 P.M.

The Surgeon of Old in War. — The address in surgery was delivered by MR. T. MITCHELL BANKS, of Liverpool (see page 340).

At the conclusion of the address a hearty vote of thanks was tendered Mr. Banks for his instructive discourse.

The meeting then adjourned, a large number of members visiting the General Hospital, where the cornerstone of the new Nurse's Home was laid by Lord Lister at 4:30 P.M. The annual banquet of the British Medical Association was held in the evening.

Fourth Day—Friday, September 3d.

The meeting was called to order by the president at the usual hour.

Preventive Medicine in the City of New York. —DR. HERMANN M. BIGGS, of New York, then delivered the address in public medicine. The speaker acknowledged his appreciation of the honor conferred upon him by the invitation to deliver the address on public medicine, but he interpreted that invitation as a tribute to the work of the health department of New York City, with which he had been so long connected, and regarded it as a command from the council to select for the subject of his address the discussion of some of the measures which have more particularly distinguished the work of the New York health department, rather than the consideration of any general topic of public medicine. It has been the custom of sanitarians of all nations to look to England for guidance and direction in matters connected with public health, and the low mortality statistics, especially from zymotic diseases, in England testify in no uncertain language to the value of English sanitary methods and the efficiency of their execution. The advances in sanitation in Great Britain have preceded those in every other country.

In the United States there is no national board of health, each State having its own health board and sanitary laws, and consequently there is no uniformity in regulations and methods. Speaking broadly, in the rural districts and in the smaller towns the sanitary methods are crude, while in many of the large cities there is an enlightened and progressive policy to be found, equal to that in any of the great cities of the world. New York may be taken as a type of the best conditions and methods of sanitary work to be found among the greater cities of the United States, and the speaker said that he would confine himself, therefore, to the discussion of the sanitary work in New York City.

The health department of New York City is an entirely independent sanitary organization, not being subject even to the jurisdiction of the State board of health. The jurisdiction of the board extends over the whole city, containing at present about two million population; and in 1898 a similar board, increased to five members, will have jurisdiction over Greater New York, with a population of three million two hundred and fifty thousand. Ordinarily the duties of sanitary authorities relating to the infectious diseases are limited to the inspection of reported cases of only a few of the infectious diseases, the removal of patients to hospitals when required, and the subsequent disinfection of the premises. In New York City, however, all matters connected with the scientific investigation, diagnosis, care, or sanitary supervision in every way of the infectious diseases are regarded by the board of health as properly coming within its province.

The Bacteriological Laboratory.—The first important departure in New York City from the older methods was made in 1892, by the establishment of a bacteriological laboratory, this being the first bacteriological laboratory ever established under municipal control. Ordinarily designed to afford facilities for the bacteriological diagnosis of Asiatic cholera and for the investigation of questions relating to disinfection, the scope of its work was soon extended to include the bacteriological diagnosis of diphtheria. The investigations of the New York City health department relating to diphtheria laid the foundation of municipal bacteriological laboratories and made them necessary to the proper conduct of sanitary work. In October, 1894, investigations in connection with the production of diphtheria antitoxin were begun, and in December of that year a special annual appropriation (antitoxin fund) of $30,500 was made by the city authorities for the prosecution of this work. The special antitoxin fund made possible the establishment of a research bacteriological laboratory devoted to the production of diphtheria antitoxin and other bacteriological products, and to general experimental investigations in relation to the infectious diseases. In 1896 arrangements were completed for placing at the command of the physicians of New York City Widal's test for the diagnosis of typhoid fever, and recently arrangements have also been made for the administration of Pasteur's treatment for the prevention of rabies. A special laboratory and stable are devoted to the production of bovine vaccine virus, and this is freely distributed and vaccination is performed free of charge by the medical officers of the department.

Every case of contagious disease reported to the department is inspected by the medical inspectors of the district in which it occurs, and when necessary such cases are removed to the department hospitals. Disinfection is then performed and is compulsory in every case, all infected materials being taken to the disinfection station for destruction or disinfection by steam. The work of inspection is carried on by a number of different corps of inspectors. These include the district medical inspectors, the district and special vaccinators, the inspectors for the administration of diphtheria antitoxin, the diagnosticians, the summer corps of inspectors, the medical inspectors of schools, etc. There are also a number of sanitary and food inspectors, who are not necessarily medical men, such as the inspectors of plumbing and ventilation, the sanitary police, the inspectors of offensive trades, the inspectors of meat, fish, milk, etc., and the inspectors of mercantile establishments—these last having under their charge the regulations as to the employment of women and children in such establishments. Besides these, there are veterinary inspectors, who have the supervision of the application of the tuberculin test for the diagnosis of tuberculosis in cattle and the diagnosis of other infectious diseases in cattle and horses.

Dr. Biggs then described in detail the method of procedure followed by the officers of the health department when the existence of a case of diphtheria comes to their knowledge.

The Prevention of Tuberculosis. — The speaker then explained the attitude assumed by the health department of New York City toward pulmonary tuber-

culosis, and recounted the measures adopted for its prevention. The health board first began an educational campaign in relation to the causation and prevention of tuberculosis in 1889, and leaflets based on a communication on this subject, giving the essential facts as to the nature of this disease, were widely distributed. In 1893 it was determined to institute more comprehensive measures for the prevention of this disease. The measures then adopted required notification of all cases of pulmonary tuberculosis occurring in public institutions, and requested reports of cases occurring in the practice of private physicians; they also included arrangements for the bacteriological examination of sputum; the inspection of all reported cases in tenement houses, lodging-houses, hotels, and boarding-houses, and the instruction of the patients and their families as to the nature of the disease and the means to be taken for its prevention; the inspection of the premises in all instances where deaths were reported as due to tuberculosis, and the issuing of orders, where it was deemed necessary, upon the owners of apartments which had been occupied by consumptives and vacated by death or removal, requiring that such apartments be thoroughly renovated by painting, papering, or kalsomining, before they were again occupied; and the education of the public, by wider and more comprehensive methods, as to the nature of tuberculosis. In 1894, 4,166 cases of tuberculosis were reported; in 1895, 5,818; and in 1896, 8,334. All cases reported, so far as possible, except those in private houses, were visited or the premises where they occurred were inspected, and, in addition, the premises occupied by persons dying from tuberculosis (numbering each year nearly 6,000) were inspected and such action was taken as was considered possible and desirable. In the beginning of 1897, on the recommendation of Drs. Biggs and Prudden, the health board of New York City finally declared pulmonary tuberculosis to be "an infectious and communicable disease, dangerous to public health," and required the notification of all cases occurring in the city, in the same way as is required of cases of small-pox, scarlet fever, diphtheria, etc. The health department has also elaborated with great care methods for protecting the public, as far as possible, from infection by the meat and milk of tuberculous animals. Since 1895 no milk is allowed to be sold within the city without a permit from the health department, and before these permits are issued information must be furnished as to the source from which the milk is obtained, the number of animals, the character of the food supply, and the sanitary conditions surrounding the dairy. There are also special regulations controlling the sale of milk, and the permits may be revoked if these regulations are not complied with. All milch cows in the city are subjected to the tuberculin test, and animals found to be diseased are killed. There also exists a careful inspection of animals slaughtered for food and of all meat sent into the city, and the carcasses of those found to be tuberculous are destroyed. Most beneficial effects, the speaker said, have already resulted from the various measures instituted for the prevention of tuberculosis. Not only has there been a very material decline in the number of deaths occurring from this disease, but there has been a most gratifying increase of knowledge and intelligence among the poorest class of the population as to its nature. This increase of intelligence, and the precautions resulting from it, afford the greatest promise in the future of a persistent and still more rapid decline in the frightful mortality caused by the tuberculous diseases.

School Inspection.—Early in 1897, under the authority of a special resolution of the board of estimate, one hundred and fifty medical school inspectors were appointed and a system of medical school inspection was begun. During three months, sixty-five school days, in which this system was in operation, there were examined 63,812 children, and 4,183 were excluded from school for the following diseases: Measles, diphtheria, scarlet fever, croup, whooping-cough, mumps, contagious eye diseases, parasitic diseases of the head and body, chicken-pox, and skin diseases. This system of school inspection has thus far given most satisfactory results and promises still more for the future.

The Educational Work of the Health Department constitutes a very important feature of its usefulness. It has been the custom of the department for some years past to issue from time to time circulars of information on various topics, and especially those connected with infectious diseases—their diagnosis, treatment, or management. Some of these circulars are popular in character, very large editions being published, fifty thousand or more at a time, and are designed for general distribution, particularly among the tenement-house population. These circulars are also published by the various medical journals and by the daily papers in New York City, and thus gain a very wide circulation. They are also sent by mail or delivered by messenger to the physicians of the city. Numerous scientific bulletins have also been issued from the bacteriological laboratories, detailing the results of original investigations in connection with infectious diseases, and these bulletins are widely distributed among the profession of New York City. The value of this educational work in disseminating information in regard to the results of the latest studies in infectious diseases is incalculable, and there have been constantly exhibited in New York the most gratifying indications of the influence of the information thus distributed, on both the general public and the medical profession. The criticism has often been made, particularly in Europe, and in the earlier work of the New York City health department, that the methods proposed are impracticable. The results have shown that they are not impracticable. What has been described is not something that it is purposed to do, but it is a statement of what has been done, and the work, as briefly outlined in some of its phases, is to be considered as only introductory. It is the purpose of the health board to establish a supervision of all infectious diseases along the lines which have been thus far developed, in relation to tuberculosis and diphtheria, as rapidly as the scientific knowledge at command will make such a course possible.

Reduced Death Rate in New York City.—The final test of the efficiency of any scheme of sanitary control, Dr. Biggs continued, is found in the mortality statistics. Various factors and conditions, however, may influence these, such as density of population, nationality of the inhabitants, and physical conformation of the country. The conditions in New York City are in many respects very unfavorable. The average density of population of the larger part of New York—that is, on Manhattan Island—is greater than that of any other great city of the world. Sanitary district A of ward 11, New York City, has a population of more than 800 to the acre; ward 10, over 640 to the acre; ward 13, 540; ward 17, 430. The only localities approaching these wards in density of population is a small area in Paris, where the population is 430 to the acre; one district in Prague, with 485 to the acre; and the Whitechapel district in London, which has a population of about 300 to the acre in Spitalfields, Mile End, and Newtown, and 365 in Bethnal Green. The density and cosmopolitan character of the population of New York also render the sanitary problems presented extremely difficult of solution. Then, too, the physical conformation of Manhattan Island, which is long and very narrow, produces

overcrowding, fully three-fourths of the population living in tenement-houses, which are five, six, or more stories high, and contain from two to four or more families on each floor.

A comparison of the mean death rate for decennial periods in New York City since 1834 shows that there was an increase during the first three periods ending in 1863, and that since that date there has been a continuous and marked decline in the rate, especially in recent years. The mortality in New York rose to such a point that the inhabitants became alarmed, and in 1866 the health department as now constituted was organized. In the decennial period ending in 1843 the mean death rate was 28.03; for the period ending 1853 it had risen to 33.81; the next period, ending in 1863, it was 33.94. Since that time it has declined to 31.11 for the decennial period ending in 1873; to 26.87 for the period ending in 1883; to 25.78 for the period ending in 1893; while in the year 1894 it was 22.76; in 1895, 23.10; in 1896, 21.54; and for the first half of 1897, 19.60. The population meanwhile has increased from 312,000 in 1840 to an estimated population of 1,990,000 on July 1, 1897. The mortality rate is normally higher for the first half of the year than the second half, and it is therefore probable that the rate for 1897 will be a fraction over 19, or a diminution of twenty-five per cent. on the death rate for the decennial period ending in 1893. The largest reduction has been in the zymotic death rate, including diarrhœal diseases of children under five years, and there has been also a steady decline in the death rate from tuberculosis since 1886. A reduction in the mortality from diphtheria and croup, amounting to nearly forty per cent., has occurred since the introduction of diphtheria antitoxin with the beginning of 1895. This reduction has taken place in spite of an increase in the number of reported cases of the disease. Up to the beginning of 1895 there had been a steady increase for some years in the mortality from diphtheria and croup, and for the year 1894 the death rate was higher than that from any other single disease, excepting tuberculosis and pneumonia—pneumonia really including a number of different affections. The combined death rate from measles, scarlet fever, diphtheria, croup, small-pox, and typhoid fever has been reduced exactly one-half within ten years—the rate for 1896 for these diseases being 1.64 per 1,000 population, as contrasted with 3.26 for 1887; for 1897 it will apparently be still lower.

The government of the United States is democratic, but the sanitary measures adopted are sometimes autocratic, and the functions performed by sanitary authorities paternal in character. We are prepared when necessary to introduce and inforce, and the people are ready to accept, measures which might seem radical and arbitrary if they were not plainly designed for the public good and evidently beneficent in their effects. Even among the most ignorant of our foreign-born population, few or no indications of opposition or resentment are exhibited to the exercise of arbitrary power in sanitary matters. The public press will approve, the people are prepared to support, and the courts sustain any intelligent procedures which are evidently directed to the preservation of the public health. The belief is never aroused in any class of the population, however ignorant, that the institution or inforcement of any sanitary measure is primarily designed for the restriction of the individual freedom. There is nowhere to be found any jealousy or distrust of law and government, as such. It is therefore possible to adopt measures more arbitrary in many respects than could be adopted in most other countries, simply because our government is democratic. This gives the keynote to the attitude of the sanitary authorities of New York.

In concluding, Dr. Biggs said that there is no great city in the world to-day which, in the broad sense, is cleaner and healthier than New York. By "clean" is meant purity of the atmosphere, cleanliness of the streets, abundance and purity of the water supply, and efficiency of the sewerage system. Nowhere can there be found a fuller recognition than in the United States of England's high standard of excellence in public medicine, or a more sincere appreciation of her vast contributions to the progress of sanitary science. But she must look well to her laurels if her cities are to be kept cleaner than the great cities of the United States, or her urban population is to be healthier and happier than the same class on this side of the Atlantic.

SECTION IN MEDICINE.

First Day—Wednesday, September 1st.

On the Influences that have Determined the Progress of Medicine during the Preceding Two and a Half Centuries.—Dr. Stephen Mackenzie, of London, delivered the address of the chairman, taking this as his subject. These influences were varied, the first place in point of time and one of great importance being yielded to anatomy. Of any one influence, however, that has helped the advance of scientific study and the progress of medicine, probably the increasing perfection of the microscope has been the greatest. With each new development of this instrument a greater range has been given to our researches, and, with the assistance of chemistry, it is continuing to reveal to us fresh facts that have created new branches of science. The thermometer, again, has been of invaluable aid in the study of diseases, allowing us to measure and record the degree of fever, and to watch its progress with such a degree of accuracy as to furnish us with evidence of the greatest value in the diagnosis, prognosis, and treatment of disease. Electricity, by the laborious and complete investigations of Dubois-Reymond, has revealed to us the mode of action of nerve and muscle, that would have been impossible to obtain in any other way. Though the hopes at first entertained of its value in the treatment of diseases have not been altogether fulfilled, it is still of much service in this respect, and perhaps still more valuable as an aid in diagnosis. The ophthalmoscope, introduced by Helmholtz, has enabled us to understand diseases of the interior of the eye, which without its assistance was impossible. It has allowed the exact examination of refraction, and has revealed changes in the termination of the optic nerve, in the retina, and choroid, not only valuable in themselves, but so important in the light they throw on pathological changes occurring in the nervous system and in the body generally that the use of this instrument has become a necessity of practical medicine. The laryngoscope, perfected by Czermak, has given precision not otherwise attainable to the diagnosis and treatment of diseases of the throat, and has important bearings on general medicine in the recognition of paralysis of the muscles that move the vocal cords, in aneurism, and in disease of the central nervous system. The sphygmograph, the cardiograph, the arteriometer, and, the latest invention of this class, the sphygmometer, have enabled us to ascertain the exact condition of the circulatory system, and are of the greatest service not only in studying the problems of normal and abnormal physiology, but in the recognition of disease and its tendencies and in the influence of remedies. Nothing from the time of Harvey gave such an impetus to the study of exact medicine as the introduction or discovery of auscultation by Laennec in 1816; and, indeed, Harvey's great discovery had

little practical application in clinical medicine until its introduction. Auenbrugger had introduced percussion in 1761. Laennec had adopted it, and his discovery of auscultation, with his zeal as a morbid anatomist, enabled him to work out most of the great problems of diseases of the thorax. The knowledge thus begun has, by the labors of many workers, increased in range and accuracy down to the present time, and the diagnosis of diseases of the chest has reached a degree of precision unequalled in any other department of practical medicine. We are now able not only to recognize disease of each of the valves of the heart, but to estimate its degree and the influence of the lesion on the greater and lesser circulations, and to trace the course and effects of emboli carried along the blood stream. Our knowledge of diseases of the lungs is nearly as complete as that of the circulatory system. The speaker then reviewed the progress that had been reached in clinical medicine, dwelling especially on fevers, renal diseases, diseases of the nervous system, Addison's disease, and myxœdema.

The Symptoms and Diagnosis of Cholelithiasis.—Dr. J. E. Graham, of Toronto, read a paper with this title. He said that for the success of surgical interference in gall-stone disease it is incumbent upon the physician to make an early diagnosis so that calculi may be removed before a serious damage is done by their presence either in the gall bladder or in the large bile ducts, and before the system is irreparably injured by obstructive jaundice. Cases of gall-stone disease are often divided into two classes: those without, and those with jaundice. This is at best an artificial classification, since bile pigment may be found in the urine when calculi are situated in any part of the gall bladder or bile ducts, although its presence is much more marked when they are arrested in the hepatic or common bile duct. The symptoms are influenced very much by the length of time required for the formation of the calculi. It is generally thought that they grow very slowly, but Naunyn is of the opinion that ordinary gall stones of the soft variety may form in a few days, even in a few hours. Biliary concretions may exist in the gall bladder a number of years without producing any symptoms, at least any sufficient to lead the patient to consult a physician. They have been found in one-tenth of all post-mortem examinations and in one-fourth of all in which the subjects were elderly women. Frequently indefinite symptoms have been noticed, such as bilious headache, bilious attacks without headache, and a feeling of pressure over the stomach after certain articles of food. If a frequent and careful examination of the urine were made, bile would be found in many of these cases, especially when cholecystitis exists. This latter condition in the chronic form may end in contraction and atrophy of the gall bladder. Courvoisier has collected sixty-three such cases, in seven of which the biliary passages were not obstructed. The speaker had for a number of years a patient under observation who had xanthomata of the eyelids and who suffered from frequent attacks of biliousness but with no local sign. She died of intestinal hemorrhage and the gall bladder was found filled with calculi. Fremitus has been noticed and stones have been detected by sounding. This is not a safe procedure if cholecystitis be present. When in addition to calculi there is an invasion of pyogenic organisms, very grave symptoms rapidly supervene. Pain and tenderness over the region of the gall bladder often set in suddenly. The pain is not of the nature of colic, unless the cystic duct has been entered. Symptoms of localized peritonitis and irregular high temperature, anorexia, nausea, and vomiting come on.

The speaker saw a very interesting case of this kind. The patient, a man of full habit, was in ordinary health, when, while walking, he felt a pain in the right hypochondrium, accompanied by much tenderness in the hepatic region and tension of the right rectus. Irregular fever followed, with occasional rigor, and death took place in about six weeks. The autopsy showed the gall bladder filled with calculi, the mucous surface separated by ulceration, and pyæmic abscesses in the liver and kidneys.

Eberth's bacillus is the infective agent in some cases of cholecystitis. The amount of ectasis of gall bladder varies in different cases, and when occlusion of the cystic duct exists the distention may be very great. Biliary calculi sometimes escape into the peritoneal cavity, connective tissue, or liver; such escape into the back peritoneal cavity may occur during a paroxysm. In one case the bile flowed into the peritoneal cavity, was removed by successive tappings, and the patient recovered. In the great majority of cases of rupture, previous ulceration of the bladder wall has existed, and the calculi enter the surrounding connective tissue. When calculi pass into the cystic duct the well-known symptoms of colic supervene. This colic occurs in less than one-half of all gall-stone cases. An attack may be brought on by error in diet, emotional disturbances, active movements of the body, menstruation, confinement, or after removal of abdominal tumors, etc. Hagen has collected eighteen cases occurring during the course of typhoid fever. The seat of pain is usually in the gall-bladder region, but also in the epigastrium, left hypochondrium, right shoulder, and right inguinal—simulating appendicitis. The severity of pain depends more on the shape than on the size of the stone. Death has occurred during an attack. Potain believes acute dilatation of the right ventricle may take place, as evidenced by *bruit de galop* or pulsation in the epigastrium. This he thinks is due to a spasmodic contraction of the pulmonary capillaries and consequent obstruction of the circulation.

The diagnosis of biliary colic without jaundice is often not easily made; especially is it difficult to separate from spasmodic closure of the pylorus with painful distention of the stomach. If seen during an attack the gastric distention may be evident. Excess of free hydrochloric acid in the gastric juice points to the stomach as the seat. Rigors with fever and perspirations, especially referred to by Osler, have occasionally been observed. This condition resembles urethral fever, and probably results from toxin poisoning and does not necessarily indicate suppuration. Jaundice occurs in one-half of the cases of calculi, but the presence of bile in the urine is a valuable sign. The breaking down of calculi does not often occur. When a stone is arrested in the cystic duct the completeness of obstruction may depend on the axis of the stone, and a change of its direction may materially change the symptoms. There is no proof that calculi have origin in the cystic duct. When the calculus becomes lodged in the cystic duct the gall bladder becomes distended. If obstruction is complete the viscus becomes distended with mucus. In some cases the calculi form a ball valve, allowing the entrance but not the exit of bile. As much as ten pints of fluid has been removed from the gall bladder.

The diagnosis between a distended gall bladder and a displaced right kidney is often a matter of difficulty. The differential points are: 1. History of biliary colic. 2. Movement of tumor with respiration. 3. The lower extremity is movable, whereas the upper is fixed. 4. The kidney may be felt behind the tumor. 5. The colon lies in front of the kidney and behind the gall bladder. 6. In pyonephrosis the urine may contain pus, and in distended gall bladder bile pigment may be present.

The two following cases illustrate this difficulty of differentiation:

Case I.—The patient, a married woman, fifty-two years old, had suffered during the summer from occasional attacks of pain, together with general malaise. In October a tumor was discovered below the liver, extending downward nearly to the crest of the ilium. It was large, smooth, elastic, and tender. The right kidney was displaced, as shown by the absence of kidney dulness. Under chloroform the kidney could not be found separate from the tumor. The latter did not move with respiration, nor was the lower extremity any more movable than the upper. The urine was free from pus, but contained a small amount of bile pigment. Symptoms of suppurative fever were present. Dr. Temple operated, and found a distended, suppurative gall bladder and a stone in the cystic duct. The patient made a good recovery.

Case II.—A female patient complained of severe pain in the gall-bladder region, which was accompanied by swelling below the margin of the ninth and tenth ribs. The pain occurred irregularly at intervals of weeks or months, and was nearly always relieved by pressure over this region. The tumor, which was thought to be a distended gall bladder, was found to be a distended cystic kidney. The urine was negative. The length of time, eight years, during which the patient suffered from the pains should have decided against a distended gall bladder. The operation was followed by recovery.

When the calculus has passed through the cystic duct, it usually finds its way without difficulty until obstructed by the narrow duodenal outlet. In many cases, however, it is found in different parts of the canal, but near the outlet in thirty-five per cent. of cases. The symptoms of passage of calculi through the common bile duct are similar to those already described in connection with the cystic duct. Obstructive jaundice is the marked differential sign between the two conditions. Many calculi pass through the natural channels without producing any symptoms. When there is complete obstruction the bile finds its way into the blood-vessels through the lymphatics. Cholelithiasis is now given as one of the causes of cirrhosis. The pressure of bile in the distended ducts, as well as irritation due to calculi in the extrahepatic and intrahepatic ducts, together with microbes and their products, are probably the principal agents. In all cases of biliary obstruction from calculi there is a danger of the introduction and growth of bacteria, leading to suppurative cholangitis and cholecystitis. The pain in this condition is usually not severe, and although an abscess may form it is not large and may contain hepatic calculi. The abscesses vary in size and number. The bacteria usually found are bacillus coli communis, streptococcus, staphylococcus aureus, and the diplococcus pneumoniæ.

The diagnosis of calculous abscesses of the liver is always difficult. Naunyn gives the following points in distinguishing the jaundice of chronic lithiasis from that due to other forms of obstruction: 1. The continuous or occasional presence of bile in the fæces. 2. Distinct remissions in the intensity of the jaundice. 3. Normal size or only slight enlargement of the liver. 4. Absence of distention of the gall bladder. 5. Presence of febrile disturbances. 6. Duration of jaundice for more than a year.

In acute yellow atrophy there is a decreased area of hepatic dulness. Fever is sometimes present in carcinoma of the liver. Calculi in the gall bladder and biliary canals are often the cause of carcinoma. Pernicious anæmia has followed biliary obstruction. Calculi sometimes pass through the ducts into the intestines and there increase in size and produce acute obstruction, which usually occurs at the ileo-cæcal valve. A calculus may ulcerate through the gall bladder from a fistula, which may extend upward through the diaphragm into the pleural cavity or lung, forming a broncho-biliary fistula. A case has been recorded of perforation into the left pleura, into the mediastinum, and then into the pericardium. Perforation may also take place into the stomach, pelvis of kidney, or portal vein. When the perforation is into the abdominal wall the fistula is usually tortuous.

The Dietetic Treatment of Diabetes.—Dr. Robert Saundby, of Birmingham, England, opened the discussion on this subject. When the diagnosis of diabetes mellitus has been established, he said, sometimes when only the presence of sugar in the urine has been detected, it is the very general practice to place the patient upon a so-called "diabetic diet." That is to say, he is furnished with a list of permitted and forbidden articles of food and drink arranged upon the principle that all carbohydrates are injurious, and he is told that he must keep to this diet until the sugar has disappeared from his urine. But carbohydrate food is not the only source of sugar. In severe diabetes glycosuria continues, although much reduced in amount, when the patient is placed on a flesh diet, and this is explained by the discovery that a carbohydrate molecule is formed in the process of converting albumin into urea, in the proportion of forty-five per cent. This fact, duly appreciated, must convince every one of the futility of persisting in withholding carbohydrates in the hope of removing the glycosuria. If it is conceded that the disputed data of physiologists do not afford a sound basis for our treatment of diabetes, but that we must look to clinical results before we say that a means is good or bad, then the old routine method is doomed. Instead of ordering a stereotyped diet in every case, we must try experimentally in each individual how much carbohydrate, or rather what combination of proteid, fat, and carbohydrate gives the best result. This was the method which the speaker would advocate, and it had been adopted solely upon the basis of clinical experience. The method, he said, does not involve a great sacrifice of time on the part of the doctor; in fact, all the most important observations can be made and a register kept by the patient himself. The only thing he cannot do is the analysis of the urine. The patient should once weekly get weighed, and collect and measure the whole of his urine for twenty-four hours; a specimen of the urine should be sent to the doctor, who should determine the total amount of sugar. Of these observations, the body weight is the most important, for if it continues to be stationary or tending upward, we have the best proof that the diet is properly regulated, even though the sugar shows a moderate increase. In order to determine the diet most suitable to each patient we must proceed experimentally, and this is better done by gradually increasing the amounts of saccharine and starchy food. Many patients suffer from polyuria and great thirst, and these symptoms can best be checked by strict diet for a limited time, combined, if necessary, with the administration of a grain or two of extract of opium every night. Further, the result of strict diet affords valuable information for prognosis, as it is only in the milder cases that the sugar disappears under its influence. The patient should, if possible, make one meal—for example, breakfast—of fat bacon or eggs and bacon, with which he may eat cabbage and starchless, not gluten, bread or biscuits. He is, of course, allowed other green vegetables, any animal food, tea or coffee with cream, and, if he desires it, two to three ounces of sugar-free alcohol, with mineral water. When after a week of this diet the sugar is found to have disappeared entirely, or almost entirely, six ounces of baked potatoes and one and one-half pints

of milk, containing between them the equivalent of about eleven hundred grains of sugar, may be added. If this causes no glycosuria, four and one-half ounces of dry toast, of which about eight hundred grains are starch, may be given, as also a bottle of light wine containing very little sugar, such as ordinary Bordeaux or Moselle, or in some cases a pint of bitter Burton ale. If such a diet causes no return of symptoms, the doctor may be satisfied and the patient is generally contented, and if sugar continues to be absent the quantity of toast or bread may be gradually increased to double the amount. Such cases are, however, exceptional. As a rule, the sugar, though diminished, persists. In such a case we may give first the milk and then the potatoes, and if there is no return of distressing symptoms we should not retrace our steps because there is some moderate increase of sugar, but watch the body weight. If that shows no loss, we may keep the patient on this diet for many weeks before venturing to make a trial of ordinary bread, and often the patient has to be content to do altogether without it. The speaker preferred to increase the potatoes, for he was of the belief that the starch of cereals is for some reason more productive of glycosuria than that of potatoes.

Dr. Sidney Coupland, of London, said that no one at the present day proscribes entirely the carbohydrates, but he agreed with Dr. Saundby that we are not liberal enough. Each case is a law unto itself in this respect, as a very slight restriction is necessary in some instances, while in others there is greater call for it. Diet alone, however, will not always effect all we could wish, for codeine was of very great value in one of the speaker's cases. We should be very cautious about restricting the diet too much, for such a course may favor the occurrence of coma.

Dr. Shingleton Smith, of Bristol, said we should be very clear as to the dietary indications in each case, and in young patients especially we must restrict the ingestion of carbohydrates. He cited one case in a middle-aged patient in whom there was always glycosuria after a small quantity of gluten bread had been eaten, even after the sugar had been absent for years. Certainly there should be more liberality in diet than is usually the case. Very often the patients do not follow out the orders of the physician, thereby materially reducing their length of life. Such patients often prefer a shorter life with liberal diet than a greatly restricted menu.

Dr. Ebenezer Duncan, of Glasgow, said that if diabetes is due to disease of the pancreas neither diet nor anything else will have much effect on the symptoms. When, however, the diabetes is of neurotic origin, then more can be effected. He thought the diet should be quite strict as long as the patient could stand it.

Dr. Tyson, of Philadelphia, said that his method was practically the same as that of Dr. Saundby, that is, he varied the diet according to the condition of the patient. We must distinguish between the mild cases in which the excretion of sugar can be prevented by careful diet and the severe cases in which no treatment will arrest it. He felt sure that many, if left alone, would outlive their diabetes. He was in the habit of placing diabetic patients for two days each month on proteid diet, but if the sugar exceeds two per cent. the diet must be very strict. The polyuria of diabetes is an effort of the system to rid the blood of sugar. A proteid diet produces diacetic acid in the urine, and may cause the coma. It is practically impossible, however, to keep patients on purely albuminous diet, and this is fortunate, as it probably often saves the patient's life.

Dr. A. Jacobi, of New York, described the course he usually pursued. He regulated the diet according to the age: young patients cannot take carbohydrates with impunity, while old patients may thrive on them. Children will live longer with a strict proteid diet, but will probably never get well. The speaker had never seen diabetic patients get worse with milk but nearly always they improved, and it was his custom to give it in some form, such as sweet milk, buttermilk, or skim-milk. A rigid milk diet, however, cannot be recommended. Old persons will do better on a mixed diet than on a strict diet.

Dr. Wright, of Ottawa, drew a sharp distinction between glycosuria and diabetes. The former occurs chiefly in elderly people and these patients may follow a very liberal diet rule. He spoke of a type of cases which he had encountered in apparently healthy young men whom he examined for life insurance. In these cases sugar appeared in the urine without polyuria or any other symptoms of diabetes. One patient, who gave a history of hard work and worry, had been under observation for the past fifteen years. The question was whether treatment was necessary in cases in which only this symptom was present, and also whether such a person was a suitable risk for life insurance.

Dr. Mackenzie thought that the reaction against the blind routine would undoubtedly do good. In this disease there is greater hope for good results than we formerly thought. We should be guided in our treatment by the patient's condition, and not exclusively by the amount of sugar in the urine.

Dr. Saundby, in closing the discussion, said that at the commencement of his adddress he had expressed the hope that some of those present would be able to echo his opinions, and he was more than pleased that so many held the same views of treatment as he did. Even in the case of children a little carbohydrate, especially potato, four to six ounces, may be given without bad results. Of course in children the prognosis is very bad, but their life should be made as agreeable as possible. Giving about a quart of milk daily he thought was very beneficial. The percentage of sugar in the urine is misleading, but an estimation of the total amount passed in twenty-four hours is a good index.

With regard to Dr. Wright's question he thought that such cases of temporary glycosuria often develop into true cases of diabetes; this at least was the opinion of some authorities.

TWELFTH INTERNATIONAL MEDICAL CONGRESS.

Held in Moscow, August 19, 20, 21, 22, 23, 24, 25, and 26, 1897.

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SECTION ON INTERNAL MEDICINE.

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First Day—Friday, August 20th.

The session opened with Dr. Pavlinov, of Moscow, in the chair. The following were appointed presidents of the section for the day: Drs. Senator and Gerhardt, of Berlin; Brault, of Paris; Crocq, of Brussels; Grunmach, of Berlin; Ebstein, of Göttingen; Le Gendre, of Paris; Laache, of Christiania; and Ughetti, of Catania.

Clinical Classification of Nephritis.—Dr. Brault, of Paris, read a paper with this title. The attempts at classification of nephritis, he said, have been numerous. The first were due to the labors of Bright and of Rayer, but for anything like a satisfactory classification we must come down to our own day, when the pathology of the kidney, like that of other organs, has been completely changed by the studies and discoveries in general pathological histology. The name

of Virchow marks the beginning of this last period. The speaker did not wish to say that only good came from this revolution, for there is even some question as to whether the pathology of the kidney has really benefited from the application of these ideas. It was in order, the speaker said, to inquire of what use is a clinical classification, and whether it is more rational and practical than are others. The most used of the histological classifications divided nephritis into parenchymatous (Virchow, 1852) and interstitial (Beer, 1859). The discovery of the connective tissue in the kidney and its importance in disease led Traube to reject completely the parenchymatous nephritis of Virchow. Kelsch, following in his footsteps, declared that inflammation could develop only in connective tissue. The improvements in the microscope soon cleared up the question, and almost all microscopists accepted as exact this simple division of parenchymatous and interstitial nephritis. Nevertheless certain authors still refused to admit the existence of a parenchymatous nephritis, maintaining that interstitial nephritis alone was capable of causing atrophy of the organ. Carrying this idea to extremes, forgetting that the kidney is formed after the type of a gland, they affirmed that its epithelium could degenerate but could not become inflamed; that, finally, all the processes of nephritis being essentially interstitial, acute inflammation of the kidney is an acute interstitial nephritis. They showed as an example of this the nephritis of scarlet fever. So we see at this period, from a histological point of view, everything was confusion; as for pathological physiology and etiology, they were of so little importance that they are scarcely mentioned. In 1875 Bartholow described an acute and chronic parenchymatous nephritis, and an interstitial nephritis or induration of the cellular tissue of the kidneys (under which he comprehended simple atrophy, cirrhosis, sclerosis, and granular atrophy). At the same time Lancereaux substituted for interstitial nephritis the term primary diffuse nephritis, and for parenchymatous nephritis epithelial nephritis. Shortly after this Charcot called attention to the identity of parenchymatous nephritis and large white kidney, and of interstitial nephritis and small contracted kidney.

Following this came the studies of Klebs and Bamberger, who declared the division into large white kidney and small contracted kidney wrong, because they found microscopically in each form lesions affecting both the parenchyma and connective tissue. Weigert (1879), Cohnheim (1880), and Wagner (1882) said that the epithelial lesions always precede the alterations in the connective tissue, and they declared (especially Weigert) that if the lesions varied in different cases it was only a difference of degree. Cornil and Ranvier had already expressed this opinion in 1876.

The most natural classification, Dr. Brault said, would be an etiological one. In 1884 the speaker, working with Cornil, wrote a thesis on diffuse and systemic nephritis, and in 1893 he discussed again the division of nephritis. At that time he contended that there was no longer a question of the unity or duality of Bright's disease. If the diseased kidneys vary in their size, their consistence, their form, their coloration, their granulations, etc., all these elements depend on whether the process is rapid or slow, violent or slight. Infectious diseases irritate, inflame, destroy *en masse;* chronic diseases, the dyscrasias, and prolonged intoxications destroy the organ by a series of local inflammations or cause it to degenerate little by little.

A clinical classification is possible only as regards duration: as transitory, acute, subacute (or prolonged), and chronic nephritis, this last comprehending only the latent varieties, namely, those with serious lesions but appearing healthy. A symptomatic classification such as Weigert and Wagner have proposed, as nephritis with or without œdema, nephritis with or without hemorrhage, is not practicable, for allowing such a nomenclature the question of classification still remains.

In all cases of nephritis in which the duration is prolonged we see constantly hypertrophy of the heart. It is therefore useless in the understanding of a nephritis to have recourse to the old divisions of parenchymatous and interstitial, for, if we have (1) the cause of the nephritis and (2) the date of its appearance, we possess sufficient data to explain what has already taken place, to foresee the future course, and to deduce the corresponding anatomical form.

Chronic Parenchymatous and Interstitial Nephritis.—Dr. Crocq, of Brussels, then presented a communication with this title. He said that albuminuria was due to desquamation of the renal epithelium, and we could not have even a so-called physiological albuminuria, a transitory condition, without such cause, although the cause of the albuminuria might be of short duration and so escape our notice. For example, we may have a hyperæmia which can be active as well as passive, as in inflammation of the kidneys due to valvular disease of the heart. Moreover, usually a parenchymatous inflammation of the kidneys is the cause of the excretion of albumin, which almost invariably points to chronic Bright's. Interstitial nephritis is quite another thing. In this we have an inflammation of the connective tissue which binds together the parenchymatous elements. If the epithelium is not affected there is no albumin in the urine, but if the inflammation extends to the epithelial elements it at once appears. Clinically therefore the author would distinguish two kinds of chronic nephritis—one with, the other without, albuminuria. These are identical with the anatomical forms distinguished as parenchymatous and interstitial.

The Pathogenesis of Chronic Nephritis.—Dr. Senator, of Berlin, read a communication on this subject. When this affection is not due to the persistence and further development of frank acute nephritis, he said, it is the result of latent inflammations of the kidney long continued. Any, even the smallest amount of albuminuria is a sign of a pathological process in the kidney. Albumin can leak through the filter that was meant by nature to retain it only when there is an organic affection of the organ. Chronic nephritis is often due to this latent process that so easily escapes notice.

In discussing this paper, Dr. Gerhardt, of Berlin, said that he did not think slight albuminuria was always due to organic lesions of the kidney, but often to functional derangement. In some people, in fact, it seemed as though there was such a thing as physiological albuminuria.

The Employment of Bleeding in the Treatment of Uræmia.—Dr. Laache, of Christiania, read a paper with this title, in which he recommended bleeding in certain forms of kidney disease, accompanied by uræmic symptoms, in which the blood pressure is increased.

Etiology of Chronic Nephritis.—Dr. Pavlino, of Moscow, said that, contrary to the opinion of Charcot, Eichhorst, and Liebermeister, his observations proved the existence of a chronic scarlatinal nephritis, parenchymatous and interstitial, and in this he was supported by many authorities. In accordance with the accepted doctrine concerning inflammation and as one would naturally deduce from observation of the clinical evolution of nephritis, we find at the autopsy a chronic epithelial nephritis when the duration has been short, and an interstitial nephritis when the course of the disease has been tedious. It is necessary

to remember that the duration of a chronic nephritis is generally much longer than is set down in the text-books, the speaker said, and according to his own observations the duration of the parenchymatous form of chronic nephritis might be from five years, and that of the interstitial form from twelve to seventeen years. In his experience chronic nephritis develops in subjects from twenty-one to twenty-four years old, and when we find it at this age we must bear in mind the possibility of its origin from scarlet fever. Admitting scarlet fever as one of the causes of chronic nephritis, we can explain in certain cases its etiology and so diminish the number of cases occurring without apparent cause.

The Pathogenesis of Obesity.—Dr. P. Le Gendre, of Paris, sent a paper with this title, which was read by Dr. Chavrin. He spoke first of the etiology of the affection. Heredity, either similar or under the appearance of arthritism, is active among the predisposing causes, as is also sex, women being more liable to suffer than men, in the proportion of two to one. The exciting causes are unsuitable diet, especially the consumption of starchy and saccharine foods, dyspepsia, the abuse of alcohol and perhaps the ingestion of any fluids in too large quantity, a sedentary life, and (as was observed after the siege of Paris) a sudden return to comfort after long privation. The speaker then discussed metabolism as it related to the disposition of ingested fat or the formation of fat in the organism from other substances, such as sugar or albumin. The factors which clinical experience has shown us to be active in the production of obesity may be grouped under two heads. The first of these moments are those which offer a resistance to the destruction of fat in the economy by diminishing the supply of oxygen needed for its combustion. Among these are anæmia and chlorosis, large hemorrhages, and a sedentary life. Dyspepsia also acts by lessening the amount of bile and pancreatic juice, and so preventing the splitting up of the fats in the intestine; the fat is thus absorbed in the form of an emulsion, which is much more difficult of oxidation. In the second group we find those causes which increase the production of fat in the economy, either through an increased ingestion of fatty food or by favoring the conversion into fat of sugar. Whether the ingestion of large quantities of water favors obesity has long been a disputed point, but Robin's experiments have shown that water favors that form of obesity which is the result of increased assimilation, but exerts no effect when the increase of fat is due to diminished disassimilation. The action of alcohol is exerted in several ways, the chief of which are by causing dyspepsia and by retarding nutrition. The influence of the nervous system in the causation of obesity is very evident in certain cases, but its mechanism is not very clear.

The Diagnosis of Internal Diseases by Means of the Roentgen Rays.—Dr. Grunmach, of Berlin, exhibited several skiagraphs showing enlargements of the heart, aneurisms, and tumors of various kinds. In all the diagnosis had been arrived at by means of the *x*-rays.

The following papers were read by title: "The Pathogenesis of Vesical Calculus," by Dr. Ebstein, of Göttingen; "The Pathogenesis and Treatment of Gout," and "The Therapeutic Value of Prepared Foods," by Dr. B. Laquer, of Wiesbaden; "Febrile Uræmia," by Dr. Ughetti of Catania; and "The Clinical Classification of Nephritis," by Dr. von Leyden, of Berlin.

Second Day—Saturday, August 21st.

The following were appointed honorary presidents for the day: Drs. von Ziemssen, of Munich; Crocq, of Brussels; Widal, of Paris; Marchiafava, of Rome; Daland, of Philadelphia; and Thayer, of Baltimore.

The High-Altitude Treatment of Tuberculosis.—Dr. von Ziemssen read the first paper of the day. Looking back over the history of tuberculosis, he said, we see a motley conglomeration of methods of treatment, for during the present century almost every year has brought with it a new remedy. All these have now been discarded and but two agents remain to be considered, namely, tuberculin and climate. In regard to the first, the "specific" treatment, there is little to say. Koch's old tuberculin has been forgotten, the value of the new has not yet been proven, and most people already doubt its efficacy. In speaking of tuberculosis, he said, he meant particularly pulmonary tuberculosis; other forms, such as lupus, have without doubt been cured, but for the pulmonary form, the most frequent and therefore the most serious, nothing really has been done. The complexity of the lesions make a cure by means of a specific seemingly impossible. Other forms have their specifics, for tuberculin will often cure lupus, and iodoform will cure tuberculosis of the joints, but as yet we have no specific for tuberculosis of the lungs. There remains therefore only the climatic treatment. As far back as we can see in the history of medicine fresh air has been one of the requirements in the treatment of tuberculosis, but it is only of late that the advantage of high altitudes, at least for many cases, has been clearly demonstrated. That tuberculous patients can get a quantity of fresh, pure air in these regions is evident to any one visiting the places. On the mountains in the centre of Europe, mountains covered with snow during the entire winter, one can see patients sitting in the sun drinking their morning coffee, with snow all around them, yet the sunbeams are so warm and pleasant that they are perfectly comfortable. But the fresh air that surrounds them is not all; the altitude brings about an excitation of the blood-making organs that increases the corpuscular elements in the blood. Even in health this reaction takes place, but not so markedly as in diseased states. There are contraindications to high altitudes which prevent us from sending all patients there. A tuberculous patient with fever should never be sent to a height, for he will certainly become worse and the fever will be increased. Almost always patients without fever do well, though they sometmes find it difficult at first to acclimatize themselves. If the fever is due wholly to the presence of bronchitis or pleurisy, it does not act as a contraindication.

The best results are obtained when the patient is sent to a place near his own home, for a long journey is always depressing, and the comfort of seeing friends, especially to a sick man, is very great. The stage of the disease must be taken into account in deciding this matter. If the case is much advanced, the patient should be kept as near home as possible.

The speaker took up the subject of sanatorium treatment for the poor. He feared the number of the rich is too few to build sanatoria for all the world, but that should not paralyze all effort, for every case cured and every case isolated are steps toward the conquest of the disease.

Dr. Senator said that his personal experience with tuberculin had not been very extensive. He had tried it carefully in a dozen cases, but without good results. In a few it seemed to moderate somewhat the fever, but in the others it acted as poison. He was convinced that the only treatment of value was the climatic, and he believed high altitudes were often of especial value. He did not believe that good was done by increasing the number of red corpuscles because he had seen more than one case in which elevation had no visible influence on the corpuscular ele-

ments of the blood and yet the patient improved. He agreed with the reader of the paper that the principal contraindication to high altitudes was fever, for there is great danger in such cases of hæmoptysis. Nevertheless some cases of hæmoptysis without fever (when the hemorrhages are slight) do well in these regions. He regarded altitude as a factor second only in importance to fresh air. Sunlight is also of great value and the sun's rays themselves exert a particular influence. Pharyngeal and laryngeal cases do not improve, and in fact always become worse, so that Dr. Senator regarded such complications as a positive contraindication to the high-altitude treatment of pulmonary tuberculosis.

Dr. von Leyden said that in his hands the specific treatment had failed, and he did not believe there could be any sure success with tuberculin. The specific may come but we cannot wait for it. We must not look to the future; we are living in the present and must treat in the present. So far the only treatment that has given any positive success, he said, is the climatic. His best results had been obtained in the mountains, but the place and its climate must be selected to suit the individual patient. A patient should not be sent far from home, for the nearer he is to friends the more comfortable and contented he will be and the better, as a rule, will be the results.

Dr. Körnig, of St. Petersburg, said that he had found an increase in the red blood cells in patients who had gone to high altitudes, and he was inclined to attribute to this increase a large part of the benefit derived from a stay in these mountain sanatoria.

Dr. Dehio, of Dorpat, said that observations of the sanatoria in Russia, for instance Hallila in Finland and Lindheim in Livonia, have shown that the climatic peculiarities of the Russian winters have an effect on tuberculosis very similar to that of high altitudes.

Dr. Jarvein, of St. Petersburg, reported the results of a trial of tuberculin in the clinic of Professor Janowsky in the military academy at St. Petersburg. It was tried in eight cases, five of which were very mild and in the first stage. They began with one-five-hundredth of a gram and increased daily to one milligram. At first the patients showed no reaction to the drug, but when the dose of one-fiftieth to one-twenty-fifth of a milligram was reached the temperature began to rise to from 37.8° to 38.5° (100° to 101.3° F.) and after two weeks three of the patients began to have hemorrhages. From this time (after two weeks), five patients began to grow steadily worse, and by the end of two months it became absolutely necessary to stop the use of the tuberculin. The three other cases were complicated with fever. The reaction occurred sooner and the rise of temperature was greater. The last case was that of a physician with tuberculosis of the pharynx. In the beginning he reacted feebly, so that the dose was gradually increased to three milligrams. Then appeared some fresh miliary tubercles, the temperature rose quickly to 38° to 39° to 40° (100.2°–104° F.), and in three months he died with all the symptoms of general miliary tuberculosis. After listening to the greatest authorities in Europe on the treatment of phthisis in sanatoria, the speaker thought that there can be but little doubt left in the minds of those present that this is at present the only mode of treatment; and as to the question of sanatoria for the poor he was sure that there were in Moscow and all over the world many rich men who would be willing to give generously for such a purpose if it was properly presented to them on the authority of the international medical congress that such was the only method of treatment.

The Climatic Treatment of Tuberculosis.—Dr. Vivant, of Monte Carlo, continued the discussion by the reading of a carefully prepared paper. The discovery of the tubercle bacillus, he said, has taken nothing from the importance of the climatic treatment of tuberculosis, in particular that of pulmonary tuberculosis, the most difficult to handle. The bacillus of tuberculosis resists alike high and low temperatures, so that there is no climate with absolute immunity. The climates most justly regarded as of value in the treatment of this disease offer a certain number of features in common, viz.: pure air—that is, oxygen in unlimited quantity; and relative dryness—that is, absence of fogs, of air charged with moisture, to interrupt the light, heat, and chemical action of the sun's rays. We know the importance of light for animal and vegetable cells, and we recognize that solar light rapidly kills bacteria. Air to be pure ought not to contain dust, especially pathogenic dust; it would be therefore useless to choose a windy place. Pathogenic dust is found especially in the midst of crowded places, and the danger of mixed infection arises; hence a person with pulmonary tuberculosis should especially avoid large cities. The temperature of the air as regards its influence upon the respiratory tract is of little importance; yet there is an advantage on the side of heat, inasmuch as cold climates expose the human organism, especially when feeble, to a variety of serious circulatory troubles included under the general term "colds." The stations on the Riviera, the plains of the deserts, the high-altitude resorts, all offer in different degrees all these active elements in climatic treatment; but the plains and the deserts offer no shelter from the heavy winds, the principal agents of colds and principal disseminators of dust. The Mediterranean resorts offer the advantage over the mountains that, with a superior solar radiation, they are less cold, permitting the patient to live in the open air continually in light, thin clothes, giving the air and light the best chance to exert their favorable therapeutic action.

The Foundation of a Rational Treatment of Phthisis.—Dr. Drozda, of Vienna, read this paper. The subject, he said, resolves itself into several parts: 1. It is necessary to destroy the accumulated toxins following the invasion of tubercle bacilli, streptococci, and staphylococci. 2. Since there can be no question of an immediate rapid excretion of micro-organisms, we must seek to diminish as much as possible the virulence of the bacteria already present. 3. We must endeavor to strengthen the vital energy of the affected organs. 4. We must take care to allow the free elimination of infiltrated masses which have softened. 5. The micro-organisms which have already passed into the lymphatic system must be rendered innocuous.

The Malarial Parasite.—Dr. Gautier, of Moscow, read a paper giving certain details in the structure of the parasites of Laveran during their evolution. Following in the path marked out by Golgi and Romanofsky, he said, we can study the details of the structure of the parasite which are not to be distinguished by other methods of staining. In cases of intermittent fever studied in the Caucasus, the author had observed in the blood three species of hæmatozoa. Each of these had a characteristic life cycle, by which it could be distinguished from the other two. One of these corresponded to the parasite of tertian fever, and another to that of quartan, as Golgi has described them. The third was probably identical with the parasite observed in Italy by Marchiafava in cases of tertian autumnal fever. According to the author's observations, the life cycle of the last parasite was two days. The fever produced by it might be classed among the irregular fevers, having sometimes a tertian, sometimes a quotidian type. These three species of hæmatozoa, different one from the other, undergo during their evolution a series of modifications common

to all. The most interesting of these processes is the development of the nucleus, the retrograde evolution of this nucleus, its disappearance, the reappearance in the body of the parasite of new rudimentary nuclei, which become the centres for the formation of young parasites, after which division of the parasite occurs and a new generation arises.

This paper was accompanied by colored pictures, showing the different parasites in all their stages.

Dr. Thayer, of Baltimore, said that he had been much impressed by the extremely interesting observations of Dr. Gautier, with some of which the speaker was already familiar through Gautier's excellent book on the parasite of Laveran. In the observation of over two thousand cases of malarial fever occurring in Baltimore during a period extending over the last seven years, in sixteen hundred and thirteen of which cases the parasites were carefully studied and the types differentiated, Dr. Thayer had been led to distinguish three varieties of the malarial parasite—the tertian, the quartan, the æstivo-autumnal or, as Welch has happily termed it, the hæmatozoon falciparum. Each of these three varieties of parasites is associated with a characteristic type of fever. The speaker said that he and his fellow-workers had not been able to separate the æstivo-autumnal type into two distinct varieties, as have some of the Roman school and Mannaberg, and they believed that the æstivo-autumnal parasite is a single organism, the length of whose cycle of development may vary materially under different circumstances, lasting more commonly about forty-eight hours, but not infrequently being considerably shorter. Between these three varieties of parasites they had never observed any transitional stages, nor were there any facts in their experiences which would suggest that such transitional forms exist. Combined affections may occur, but they are rare; they were present in a little more than two per cent. of the cases studied by the speaker. He did not agree with those observers who consider that the malarial parasite is a single though polymorphous organism, for his experience inclined him to the view that these three forms represent separate varieties or species of organisms. While agreeing entirely with Dr. Gautier as to the types of parasites, he had to confess that he had not succeeded in obtaining the same beautiful results in his stained specimens. It is not impossible that this might be due, he thought, to the fact, as pointed out by Dr. Gautier, that this result is to be obtained with certainty only when especial varieties of methylene blue are used.

On the Increase of Eosinophilic Cells in Trichinosis.—Dr. Thayer, of Baltimore, then read a paper containing a *résumé* of the studies of Dr. Brown on two cases of trichinosis. Dr. Brown's paper, he said, would appear in the *Journal of Experimental Medicine*.

Case I.—R. T——, aged twenty-eight. Previous history negative. The subjective and objective symptoms all pointed to trichinosis, and besides a small piece of muscle cut from the biceps showed living trichinæ. On the day of admission, March 8th, examination of blood showed red blood corpuscles, 4,232,000; leucocytes, 16,500. Differential count of leucocytes: Small mononuclear leucocytes, 5 per cent.; large mononuclear and transitional forms, 7 per cent.; polymorphonuclear neutrophiles, 50 per cent.; eosinophiles, 38 per cent. The total number of leucocytes ranged between 13,000 and 35,000. The percentage of eosinophiles ranged between 8 and 68. The small and large mononuclear elements remained throughout at a percentage slightly higher than one would have expected with the degree of leucocytosis existing, while the number of polymorphonuclear neutrophiles was in directly inverse proportion to that of the eosinophiles. Thus, on the 23d of April, with a leucocytosis of 17,000, the differential count of the leucocytes was: Small mononuclear leucocytes, 19.5 per cent.; large mononuclear, 5.2 per cent.; polymorphonuclear neutrophiles, 6.6 per cent.; eosinophiles, 68.2 per cent.

Case II. F. B——, twenty-nine years old, showed few if any of the classical symptoms of trichinosis. Such a condition was not thought of till after the blood examination. This showed red corpuscles, 5,000,000; colorless corpuscles, 13,000. Differential count: Small mononuclear forms, 11 per cent.; large mononuclear, 5 per cent.; polymorphonuclear neutrophiles, 37 per cent.; eosinophiles, 44 per cent. Dr. Brown, remembering the case of trichinosis with the high percentage of eosinophiles, examined a piece of the muscle from the calf, and found living trichinæ. In this case, as in the former, the same inverse proportion existed between the number of neutrophilic and the eosinophilic leucocytes.

Conclusions: 1. In two instances of trichinosis the circulating blood has been found to contain a larger percentage of eosinophilic cells than has ever previously been demonstrated. 2. This increase in eosinophiles, occurring in connection with a moderate or well-marked leucocytosis, always occurs at the expense of the polymorphonuclear neutrophiles, which are correspondingly decreased in number, the small and large mononuclear and transitional forms being present in normal proportions in a percentage slightly below normal, not far from what one would expect with a leucocytosis of the existing degree. 3. Whether these changes in the blood are characteristic of trichinosis, or are also to be found in extensive myositis from other causes, remains to be shown. 4. The remarkable inverse proportion between the eosinophiles and the neutrophiles in these instances, as well as the changes observed by Brown in the histological study of the muscle, forms suggestive evidence in favor of the view that the increase in eosinophiles in these cases occurred by a direct transition from the polymorphonuclear neutrophilic elements.

Dr. Daland, of Philadelphia, said that without doubt this was something original in the diagnosis of trichinosis, and the fact of an increase of eosinophiles at the expense of the polymorphonuclear neutrophiles was intensely interesting.

Dr. Ewald, of Berlin, inquired whether Dr. Thayer had found any connection between the toxins created by the trichinæ and the increase in eosinophiles.

Dr. Thayer said that he believed more eosinophiles were found in the muscles than in the circulating blood, so much so that it seemed to suggest that the polynuclear cells after leaving the vessels became eosinophiles.

The following papers were read by title: "The Displacement of the Heart in Left-sided Pleural Effusions" and "The Physio-Pathological Signification of 'Ictus Cordis,'" by Dr. Queirolo, of Pisa; "Are the Different Forms of Malaria Caused by One or Several Parasites?" by Dr. Celli, of Rome; and another with the same title by Dr. Sakharov, of Tiflis; "The Unity of Paludism," by Dr. Coronado, of Havana; "The Parasite of Pernicious Fever and its Clinical Forms," by Dr. Marchiafava, of Rome; "Some Remarks on Diseases of Malarial Type," by Dr. Da Rocha, of Coimbra: "Note on the History of Epidemic Paludism," by Dr. Mejia, of Mexico; "Tuberculous Splenomegaly," by Dr. Widal, of Paris; and "The Rôle of Heredity in the Etiology of Certain Diseases," by Dr. Kabanov, of Moscow; "The Curative Action of Nitrate of Silver and of Ergotin in Pulmonary Tuberculosis," and "The Efficacy of Revulsion in the Treatment of Pulmonary Tuberculosis," by Dr. Crocq, of Brussels.

Correspondence.

OUR LONDON LETTER.

[From our Special Correspondent.]

TO MOSCOW—TO INDIA—THE MILITARY MEDICAL SERVICES—COMBATANTS' PREJUDICES—A JUSTER ABBREVIATION—THE NETLEY SCHOOL PRIZES—GENERAL BUTLER'S ADDRESS—ADVERTISING IN LAY JOURNALS—A GREATER SCANDAL AT MERCER'S HOSPITAL—STARVING PATIENTS—CHOLERA ALARMS—DANGEROUS STATE OF THE RIVER BRENT—STATISTICS OF HOSPITALS—ACCIDENT TO OUT-PATIENTS—PAUPER NURSING ABOLISHED—EXPLOSIVE HAIR WASHES—CONGRESSES—DEATHS OF DRS. NELSON AND DU PASQUIER.

[London, August 21, 1897.]

THE International Medical Congress will have a fair representation from these islands, as in spite of other attractions and the long journey a number of our brethren will undertake the trip to Moscow.

In consequence of the Indian troubles a number of army medical officers have been detailed for duty on the northwestern frontier. Nine surgeon-majors and surgeon-captains leave London to day to catch the P. and O. steamer at Brindisi for Bombay. Of course all leave is stopped and there must be pressure on the department.

Though the Indian service will not want men, the prospects for the army are not pleasant, in the face of the failure of the last examination to attract competitors. There have been serious rumors as to Lord Wolseley's health, and though these were contradicted it is again affirmed that he will have to resign. If Sir R. Buller succeeds as commander-in-chief it will be only an exchange of log for stork, so far as the medical staff is concerned. If he should be passed by, Lord Roberts would have the post, and he is held to be a just man with an open mind, and as such would be certain to lend an ear to the medical service and then the grievances must be redressed.

The offensive conduct of military officers is so constant a source of annoyance that it is pleasant to chronicle an occasional appreciative utterance, such as that of Major-General Sir Wm. Butler, who distributed the prizes at the close of the last session of the Netley School. In his address he spoke of the profession as in one sense the highest, and told the medical officers they represented the humanizing influence, the openness or freedom of mind and independent thought, which are of the greatest value in the profession of arms, where the chief mental danger is a too restricted idea of the horizon of life. In illustration of his meaning he referred to the two brave and honorable surgeons at St. Helena, who, undeterred by official censure, fixed in the immutable traditions of honor, truth, and justice, protested against the mean and stupid persecution of the dying Napoleon. "It is true," he said, "they lost everything, but they won more than the world's applause, for in a measure they redeemed the national honor when the action of their official superiors had compromised it." The general also referred to Baron Larrey, whom Napoleon pronounced the "most virtuous man I have ever known:" and in conclusion alluded to his own debt for the care and sympathy and skill bestowed on him at Netley five and twenty years ago, and to which under Providence he ascribed his survival to address those entering on their honorable career, in which he wished them prosperity and happiness. Among other notabilities present on this occasion was Sir Joseph Fayrer, who also made a short speech, in which he pointed out to the Indian officers the grand career before them in a service which had produced most brilliant men and which he believed would be even better in the future than in the past.

What is medical advertising? The question seems always with us. An anonymous correspondent of the *Medical Press* attacked Dr. Brunton for permitting a review of a work of his to appear in the *Glasgow Herald*. Dr. Brunton replied regretting he had not specially instructed his publishers not to send the book to lay journals. The *Herald* is indignant with the *Press* and the doctor, and says: "Medical etiquette is surely the strangest wild fowl in the whole menagerie of conventions"—a view it would be no easy task to refute. The *Herald* says it will not be deterred by the tyranny of medical journals from giving its readers the best expert opinion of whatever publications it chooses, and there are plenty of ways of obtaining books besides the gifts of publishers. The *Press* retorts that if every lay journal were to give a lengthy review of medical works as they appeared, the nation would soon be a collection of feeble-minded neurotics through perusing the lay papers. This is rather strong, certainly, but is it true in any degree? Reviews could never occupy so much space as quack advertisements now do. These lay papers (by the way, is not the word lay getting very much abused, its meaning indefinitely extended?) will not be dictated to and the medical ones are open to the retort that they want to drive advertisements into their own columns. It is not many years since the leading medical journals advertised unblushingly their contents in the "lay" papers, and the contents were scarcely ever suitable for family reading. When this became too blatant, the advertisements were restricted to the *Times*, and for years that paper was held to be a permissible medium for advertising medical books. Now the purists include it in their objections. Assuredly the *Times* will not be intimidated by the loss of a few advertisements from commenting upon medical as well as sanitary questions, and it is somtimes difficult to draw the line. The "lay" papers will do whatever they think pleases the great public, whatever the professional journals may say, and there is not much danger of medical books becoming popular. Other forms of advertising are certainly more offensive and within each man's own control, while publishers have a finger in this.

The Mercer's Hospital scandal has developed into something that looks like a crime. I am credibly informed that the house committee discharged all the patients under Mr. O'Grady and in order to compel them to leave they were refused all food for twenty-four hours. When Mr. O'Grady heard of this he bought food for them and brought it in. The plan of starving the patients has been defended by the registrar in a letter to the newspapers. How long is such a committee to be suffered to afflict the sick? If one had died, a verdict of manslaughter might have been the consequence. Irish lawyers are proverbially acute, and it will be strange if none of them can bring the members of this committee to book for endangering the lives of patients intrusted to their care. Every one of those who were guilty of this act should be placed in the criminal dock.

[London, August 28, 1897.]

WE have had what the newspapers call a "cholera scare," but it must be admitted that London has taken the sensation with abundant *sang froid*, and with good reason, too, considering the circumstances and our state of sanitary preparedness. The case reported certainly exhibited some of the symptoms of cholera and the patient died in a state of collapse after seventeen hours' illness. A working girl at the east end of London went to bed well after a supper of bread, butter, cheese, tomatoes, and fried potatoes. She was attacked with vomiting and diarrhœa in the night. A

doctor was called in the morning, who found her in a collapsed condition with a temperature of 94° F. At the post-mortem ecchymoses were found on the brain, the lungs were collapsed, the blood was tarry, and the intestines contained a greenish fluid. Bacteriological examination was negative. The jury at the inquest returned a verdict of English cholera, and the county council on the strength of the bacteriological reports stated it could not be the Asiatic scourge. There was absolutely no source of infection to be incriminated and the disease did not spread. In the absence of cholera in Europe "scare" was uncalled for and in fact took place only among the journalists in search of sensation. Cases of so-called English cholera occur during most summers, and it must be admitted that some of them present symptoms that are held to be the appanage of the Asiatic variety, and it may be impossible from symptoms alone to differentiate all the varieties of purging and vomiting ending fatally. In this case it is possible some ptomain poisoning may have been at the bottom of the mischief.

While cholera, whether Asiatic or English, excites public fears, the holocaust of infants from summer diarrhœa goes on from year to year with little notice. The mortality of London and all the large towns has lately been rising, the chief cause being this summer ailment of infants. The number of deaths reported in London from diarrhœa has been 270, 459, 575, and 651 in the four weeks up to the 14th instant. Of this mortality over ninety per cent. is due to the deaths of children under five years of age. What must have been the extent to which diarrhœa in some degree affected patients who recovered? The advent of colder weather is making itself felt, but it is difficult to reconcile one's self to the annual sacrifice of these young lives. While much is doubtless due to waves of heat, it seems impossible to admit that we are helpless. The powerful effect of diet and suitable regimen ought to enable us to save many of these infantile victims. But so long as the public fancies that every disturbance of the alimentary canal is caused either by eating fruit or by "biliousness," the great majority will go on feeding their progeny in an improper way and calling in the doctor only when too late. It must be admitted, however, that infantile diarrhœa offers a broad field for further investigation into its etiology, treatment, and prevention.

The foul state of the River Brent has at length roused the local government board and the Middlesex County council has been instructed to cleanse it forthwith. None too soon, for the stream has become in places an open stagnant sewer and the pleasant villas on its banks are almost uninhabitable on account of the horrible stenches arising from the sewage. It is averred that all the local authorities have discharged only clear effluents, but ocular and olfactory evidence proves that some of them have only imperfectly treated their sewage, if indeed it has not been allowed to escape without any treatment at all. Another cause for the dangerous and nauseating state of the stream seems to be that a canal company impounds the water under an old act, to such an extent as to arrest the flow. Now that the government board has spoken, men are at work in an effort toward improvement, which can only be temporary. It must follow up its action by some legislative measure so as to restore the once delightful valley to a sanitary condition.

Burdett's "Hospitals and Charities" for 1897 opens with a chapter on the Queen's commemoration. Her Majesty is patroness of more than sixty hospitals and dispensaries and of some ninety other charities. As an example of the progress of charitable institutions it may be stated that in the hospitals patronized by the Queen there were, in 1837, 2,500 beds, which had increased in 1895 to 3,331. These were used by about 28,000 patients in 1837 and the past year by 36,514. The book gives statistical and other information respecting all sorts of institutions for the relief of the sick and suffering, and describes the various systems of relief which are adopted in the various parts of the English-speaking world. These institutions expend collectively a sum of from twenty to twenty-five millions sterling.

A singular accident occurred at St. Bartholomew's hospital on Saturday. A number of out-patients were waiting to be admitted when the portico under which they were standing collapsed. Most of them made good their escape but several who were near the door were caught by the falling débris, and so injured that they had to be taken into the hospital.

The "order" of the local government board forbidding the employment of paupers in nursing is giving much satisfaction to poor-law reformers, who have long urged that the evil should be abolished. A further "order" requires a superintendent nurse to be appointed in any workhouse employing three or more nurses under the medical officers' control. The *Medical Press*, always well informed on these matters, urges the Irish board to follow the example, stating, however, that this authority is but the servant of the guardians, and although possessed of good intentions takes years to consider them, while the English board, being master and controller of the guardians, can act without hesitation and so effect a reform in a few months.

The county council has prosecuted a number of hairdressers for keeping petroleum without a license. Considering that a lady was lately burned to death in a hairdresser's establishment through a petroleum wash taking fire, it seems incredible that any one should go on employing such a material to cleanse the hair. One would suppose too that no one would run the risk of such a painful death as that which lately shocked the community. The council will follow up the matter and exact the penalties in all cases.

Next year the Pharmaceutical Congress is to be held at Belfast and the Institute of Public Health at Dublin. The British Dental Association's annual meeting was held in Dublin last week and the attendants had a splendid reception from the citizens. This is but natural when we remember the proverbial Irish hospitality, on which many will count for next year.

The death is announced of the venerable Dr. D. H. Nelson, formerly professor of medicine in Queen's College, Birmingham, and author of various contributions to our literature. He took his M.D. at Edinburgh in 1848. He retired some years ago. He was in the eighty-eighth year of his age when he died on the 10th inst.

The death of Dr. Du Pasquier, F.R.C.S., took place last Friday at the age of eighty-six years. He also had long retired, though he is well remembered by many who knew him when he practised in Pall Mall and was surgeon-apothecary to the Queen and the Prince of Wales.

OUR VIENNA LETTER.

(From our Special Correspondent.)

A CONSERVATIVE MEDICAL POSITION AS TO BICYCLING FOR SEDENTARY PEOPLE—GROWING DISFAVOR OF CHLORATE OF POTASSIUM OWING TO RECENT ACCIDENTS—A BRAIN LESION IN POISONING FROM ILLUMINATING GAS—PROFESSOR ADAMKIEWICZ AND THE PHYSIOLOGICAL IMPOSSIBILITY OF INCREASED INTRACRANIAL PRESSURE.

VIENNA, August 16, 1897.

ABOUT the beginning of the summer most of the bothersome police regulations affecting bicyclists were

done away with. It is no longer necessary to have a police license, or to carry a number prominently displayed, or to appear at the prefecture of police and exhibit your dexterity in riding and mounting and dismounting as a preliminary to the license. While the liberty thus granted has led to a great increase in the number of riders, it has by no means caused the rage for wheeling that was anticipated. For a town of over a million inhabitants, bicycles are comparatively infrequent on the streets of Vienna.

For a good deal of this the doctors are responsible. The profession is extremely conservative here, and the bicycle as a means of exercise does not commend itself overmuch to them. Certain of the older practitioners, when consulted about its advisability by patients, shake their heads dubiously. When a family physician is asked to grant permission for bicycle riding, the examination of the individual is apt to be as complete as if there were question of application for an insurance policy. When there is any symptom of heart trouble permission is at once refused, or allowed only tentatively and with the most careful directions and precautions. If the urine shows any signs of kidney trouble the same result is to be expected. There has been a number of sudden deaths among enthusiastic bicyclists reported from various quarters here in Europe, and hence the medical carefulness. As one of the best-known clinical professors here puts it, it constitutes a form of exercise that is very easily overdone, because the rider only thoroughly realizes his fatigue after dismounting from his machine. After a certain time the habitus of the monotonous motion required for pedalling is acquired by the muscles involved, and they do not give the usual signs of fatigue. General exhaustion readily supervenes, and the wheelman easily exceeds his strength before he realizes it. When there are circulatory or emunctory disturbances already at play, though practically symptomless, they may easily lead to serious consequences as a result of the overexertion and the exorbitant call for additional energy and increased elimination. With regard to the heart, it is clear; as to the kidneys, it has been noted a number of times that if an ordinarily healthy but sedentary individual, in whom, however, there is not the slightest suspicion of kidney trouble, ride with ordinary speed for a couple of hours, blood and some hyaline casts with some traces of albumin may be found in his urine. All this would seem to be the result of sudden call for excessive elimination on organs that were unused to the strain of getting rid of so much waste muscular material at a time. Perhaps the conservatism may not be entirely old fogyism, but be a lesson worth considering when the question of medical advice and direction in the matter comes up.

A recent death from chlorate-of-potassium poisoning here has reawakened the feeling against the drug. It was a simple accident, but it is another warning against lightly prescribing the drug in family practice. During the past winter a well-known actor died from causes that his physician could not explain, and the autopsy showed that it had been chlorate-of-potassium poisoning. Subject to hoarseness and chronic sore throat, he was accustomed to take a certain amount of the drug. During the course of a severer pharyngitis than usual, he sent for a well-known physician, who prescribed chlorate-of-potassium in rather large doses, but so combined as to disguise its taste. The patient continued his own additional doses of the drug, and died by poisoning from it. As the most recent investigations would seem to show that the drug has no specific action in affections of the mouth and throat, and owes its clinical efficacy to its rather limited antiseptic power, it has come into general disfavor here. There are many better antiseptics known now that have not its poisonous properties, and there would seem to be no reason for taking the risks involved in its use. This has come to be considered so rational that there is even question of leaving it out of the next edition of the Pharmacopœia here entirely.

In pathological circles considerable remark has been occasioned by some recent deaths from illuminating gas. The difference in the poisonous properties of the new water gas and the old-fashioned coal gas is enormous. The amount of carbon monoxide — the really poisonous element in illuminating gas — is manifoldly increased under the new system. Water gas is besides almost absolutely odorless, so that no warning is given of its presence. The new gas is supplied in the old pipes and fittings, nearly always leaky, so that there is every reason to believe that small amounts at least of the gas often find their way into the living-rooms of dwellings, and carbon monoxide is one of the gases that even when diffused in extremely small amounts causes symptoms of chronic poisoning. In cases of acute poisoning from illuminating gas here, there is always a spot of brain softening found in the innermost part of the lenticular nucleus near the knee of the internal capsule. This softening is more or less pronounced, according to the length of time that has elapsed between the exposure of the patient to the poisonous gas and the occurrence of death. In cases in which artificial respiration has been employed for a long time and has led to the aspiration into the lungs of large quantities of infectious material from the mouth and nose, the consequent pneumonia may be so fulminant that very little time is allowed for the development of brain degeneration and only its primary stages may be noted. In cases in which the patients fail to recover from their first stupor, it will, of course, be absent entirely; but in all other cases its occurrence is looked for with confidence.

The etiology of the degenerative process is, as usual, a circulatory disturbance. The innermost part of the lenticular nucleus is supplied by a set of minute arteries that come off from the arteriæ fissuræ Sylvii just after the posterior communicating have been given off. They are not usually set down in ordinary anatomical text-books, but it is the interference with the circulation in them which causes the softening. Sometimes they are found thrombosed, sometimes widely dilated. In the latter case Professor Kollisko considers it theoretically probable that the dilatation of the arteries in question, together with the lowered blood pressure, causes such a slowing of the circulation in the important nerve centres involved that the highly organized nervous elements perish from insufficient nutrition.

To those who are interested in the curiosities of medical literature, and to whom pathological and physiological novelties, especially when thoroughly paradoxical, appeal, a recent series of articles from the pen of Professor Adamkiewicz, sometime professor of experimental physiology in the University of Kracow, but now engaged in original investigation in his private laboratory in Vienna, will undoubtedly commend themselves. They have just been concluded in the *Wiener medizinische Wochenschrift*. The professor disagrees and has done so for some time with most of the rest of the world as to the physiological possibility of the occurrence of increased intracranial pressure. The whole diploë is, in his opinion, a large storage reservoir, that acts as a safety valve for the relief of any intracranial pressure above the normal, whenever there is a tendency for that to occur. When the thorax is dilated in respiration, there is a negative pressure produced in the veins of the head and neck, and if there is the slightest increase of pressure within the arachnoidal space or in the millions of canaliculi of the diploë the excess of fluid is aspirated. Experimentally increased intracranial pressure may be produced

by injections into the arachnoid cavity, when a thicker liquid than decinormal salt solution is used, because the bony canaliculæ easily become blocked. Oil, for instance, has been used in such demonstrations, and always with positive results. Using decinormal salt solution, however, Professor Adamkiewicz asserts that it is impossible to produce increased pressure within the brain membranes. Hence his rather startling conclusion, calculated to disturb the even tenor of his way for the earnest but simple seeker for medical truth, "that it is high time to give up the erroneous pathological explanation that certain well-known symptoms are due to increased intracranial pressure, for it is founded on a physiological falsity that cannot but delay the advance of neurology."

IS IT EVER IMPOSSIBLE TO PASS A CATHETER THROUGH THE URETHRA INTO THE BLADDER?

To the Editor of the Medical Record.

Sir: The above question is almost invariably answered in the negative, as it is by Dr. Buckston Browne, in the Medical Record of August 21st. I had a case some years ago in which repeated attempts with instruments of all shapes and sizes failed to secure a passage of the obstruction. The case was of long standing; the perineum was riddled with urinary fistulæ, and I proposed a perineal section. The patient was finally treated by another surgeon, who, as he supposed, passed a sound. He claimed that the sound had entered the bladder and that the stricture had been passed. The patient died on the third day, of acute suppression of urine. At the post-mortem it was found that a false passage, of about two inches in depth, had existed for many years. This false passage was in a direct line with the urethra, and into it all the instruments had passed. The operator had forced his sound through the bottom of this false passage, and by his manipulations had torn up the connective tissue at the base of the bladder. Even after the parts were removed it was impossible to pass the smallest probe through the very short but narrow and tortuous canal which connected the two portions of the urethra. I had worked hours ineffectually on this case before it passed into other hands, and I think it would have been absolutely impossible for any one to pass an instrument through this obstruction, even could the exact condition present have been known.

J. F. Baldwin, M.D.

Cortland, Ohio, August 27, 1897.

TAPEWORM IN MEN.

To the Editor of the Medical Record.

Sir: In the Medical Record of August 28th is an article by Dr. E. C. Chamberlin, on the treatment of tapeworm, in which the author says that he has not seen a single case of tapeworm in a man, and that tapeworm is almost entirely confined to womankind. He quotes the statistics of French military surgeons for ten years, showing only one case in every thirty-six thousand men.

In view of the above statement, it may be of interest to say that during the past seven years of practice in general medicine I have had five cases of tapeworm, all the patients being men. Four of these cases occurred in a town of seven thousand inhabitants; one case in a city of seventy-five thousand inhabitants. Among these eighty-two thousand people there are at least one hundred and twenty-five practising physicians, and several of this number, no doubt, must have found cases of tapeworm in men. The ages of these five men were between twenty-two and thirty-five years, and the specimens passed ranged from twelve to thirty feet in length. No special symptoms were complained of in these cases, the attention of the patients being called by passing segments of the parasites.

John E. Dowling, M.D.

Hornellsville, N.Y.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 4, 1897:

	Cases.	Deaths.
Tuberculosis	236	125
Typhoid fever	42	7
Scarlet fever	67	2
Cerebro-spinal meningitis	1	2
Measles	37	5
Diphtheria	119	23
Laryngeal diphtheria (croup)	1	2
Chicken-pox	1	0
Pertussis	2	0

A Curious Case of Hypnotic Suggestion.—A Hamburg practitioner was consulted by a young married lady, who complained of terrible hallucinations, driving her to suicide. She came to him unknown to her husband, who she said was devoted to her, and whom she could not bear to distress by the knowledge of her affliction. Beyond the hallucination complained of, there seemed nothing to indicate mental disease; but a sudden light dawned on Dr. D—— when in the course of further conversation his patient told him of two facts—one that her husband had lately insured her life for a large sum, and the second that he was fond of making hypnotic experiments. Dr. D—— found it easy to hypnotize his patient, but met with obstinate resistance when he commanded her to divulge what had been suggested to her to do. He did not, however, relinquish his efforts, but continued the hypnotic *séances* in the presence of a witness, and at last overcame the resistance of his patient, who acknowledged that her husband had ordered her to commit suicide after two months and to keep his command secret from every one. The insurance company is one that pays even in cases of suicide, if the suicide be committed more than two months after insurance.—*British Medical Journal.*

Health Reports.—The following statistics concerning yellow fever, cholera, small-pox, and plague have been received in the office of the United States Marine Hospital service during the week ended September 4, 1897:

		Cases.	Deaths.
Smallpox.			
Birmingham, Ala.	August 21st to September 1st		
Buckton, Ark.	August 28th to September 1st	1	
Smallpox Foreign.			
Rio de Janeiro, Brazil	[illegible]	4	
Saguia la Grande, Cuba	August 8th to August 15th	8	3
Rotterdam, Holland	August 14th to 21st	2	
Warsaw, Russia	August 7th to 14th		5
St. Petersburg, Russia	August 7th to 14th	7	2
Barcelona, Spain	[illegible]		6
Odessa, Russia	August 7th to 14th	1	
Bombay, India	[illegible] August 3d		1
Cholera.			
Madras, India	[illegible]	1	
Bombay, India	[illegible]		120
Calcutta, India	[illegible]		7
Yellow Fever.			
Saguia la Grande, Cuba	August 8th to 15th	8	3
Manzanillo, Cuba	August 21st to [illegible]	2	
Plague.			
Bombay, India	July 27th to August 3d		58

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Original Articles.

PATHOLOGICAL HISTOLOGY OF INTESTINAL END-TO-END APPROXIMATION AFTER THE USE OF THE FRANK COUPLER.

BY JACOB FRANK, M.D.

THE pathology of the reparative process taking place in the intestines after approximation has received but little attention from the various experimenters in this field, it no doubt having been looked upon as of little if any importance. To my mind it is of vast importance, for by microscopical examination only can we obtain accurate and positive knowledge as to how soon and in what manner reparation takes place.

The following is a report on the specimens prepared for me by Dr. Fred C. Zapffe. All the specimens with the exception of one, in which Murphy's button was used, were obtained from dogs operated upon with my decalcified bone coupler, used in the manner as already published in the MEDICAL RECORD of October 3, 1896.

Section Removed Ten Days after Date of Operation (Fig. 1).—Macroscopical appearance: There is no adhesion or matting of the intestines and the point of approximation can be found only by running the bowel through the fingers, when a slight ridge is felt.

FIG. 1.—After Ten Days (Frank Coupler).

There is a little thickening of the bowel at this point. On the inner surface of the bowel, projecting over the mucosa, is a smooth line marking the point of union.

Microscopical appearance: All the layers are in juxtaposition.

Mucosa: This is somewhat thickened and the ridge above mentioned is seen. This ridge has no villi, nor does it in the least resemble normal mucosa; it consists entirely of small, round, inflammatory cells, closely packed. On either side the normal mucosa is seen, but no attempt at regeneration of the villi.

Muscularis mucosæ: The ends are separated; the gap is filled in with connective tissue.

Submucosa: It is thickened at the line of union,

FIG. 2.—After Sixty Days (Frank Coupler).

but is continuous. It is very vascular. The blood-vessel walls are also thickened.

Muscularis: The circular and longitudinal coats are distinctly cut off at the line of union. The cut ends present some proliferation of the muscle cells, but the muscles have not united, the gap being filled in with a loose, very vascular connective tissue.

Serosa: This coat is very much thickened and very vascular. The new-formed tissue is easily distinguished from the old by these features. The connective tissue is very loose, having the appearance of a network of mesh.

Section Removed after Sixty Days (Fig. 2).—Macroscopical appearance: No adhesions or matting of intestines are found. The point of operation is hardly distinguishable. A slight line is felt at the line of union. There is very slight contraction of the lumen of the bowel, the index finger passing easily. On the inner surface of the point of union is a slight groove. The lymphatic and blood vessels run across the line, giving the bowel quite a normal aspect.

Microscopical appearance: The various layers are in perfect juxtaposition. Continuity has been established in every layer except the muscular, and regeneration has been established in the mucosa, submucosa, and serosa.

Mucosa (Fig. 4): The mucosa is continuous and shows no formation of new tissue, being unchanged. There is at the site of union a falling inward of the villi, an entropion, as it were, due probably to the cicatricial contraction of the scar tissue beneath. The tops of the villi thus drawn down meet with those of the opposite side, presenting an appearance as though they had been piled up. There is no connective tissue formed between the villi.

Muscularis mucosæ has not become continuous, the ends of the cut muscle being separated by scar tissue.

Submucosa has an almost normal appearance. It is continuous and regenerative, although it is slightly

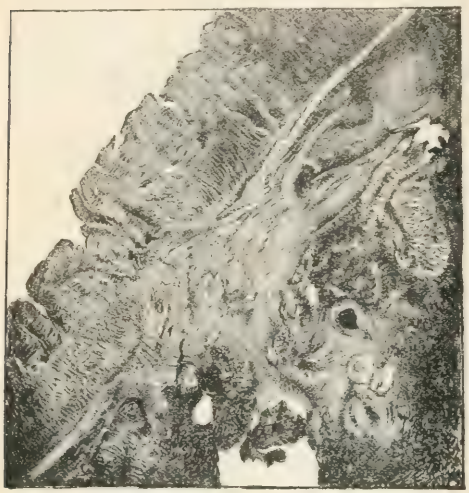

Fig. 3.—After Sixty Days (Frank Coupler).

thickened. Blood-vessels are prominent, being also thickened.

Muscularis: The outer layer is united by connective tissue, into which a few muscle fibres project from either side. There is, however, no regeneration. This layer is closely applied to the serous layer. The ends of the inner layer are nearly in apposition, and look like spindle-shaped processes. Connective tissue connects them, and no muscle fibres can be seen projecting into it as in the other layer. Although there is some proliferation of the muscle cells in the cut ends, there is no regeneration. The connective-tissue fibres on each side of the line of union run from the muscular to the serous layers, thus forming two bundles, the fibres interlacing as they cross.

Serosa is thickened and more vascular than normal. The cicatricial tissue is distinguishable at the line of union, and is arranged as above mentioned.

Two Specimens Removed after Sixty Days.—The macroscopical appearance was the same in both.

Microscopically the first specimen, Fig. 3, differs somewhat from the second, Fig. 2, in that the gap in Fig. 3 is wider than in Fig. 2, in which the layers are almost in apposition. This is due to the different method of preparation—Fig. 3 specimen being stretched on cork with pins; Fig. 2 specimen not so.

Section Removed after Ninety Days (Fig. 5).—Macroscopical appearance: There are no adhesions between omentum and bowel or loops of bowel. Site of operation hardly distinguishable, except for a slight line which is felt. Appearance of bowel is normal. On the inner surface hardly anything is seen to indicate an operation. The lymphatics and blood-vessels cross the line of union and are readily discernible. Bowel is patulous and but slightly contracted, the finger passing easily.

Microscopical appearance: There is little difference between this specimen and the previous one. The scar has contracted more than in Fig. 2, which has brought the different layers into closer apposition, making it almost impossible to distinguish the line of union. The mucosa and submucosa have the same appearance as in Fig. 2. The muscularis mucosæ is also the same. The muscularis has not regenerated and presents the same appearance as in the previous section, as does the serosa.

Section Removed after Sixty Days, Murphy Button (Fig. 6).—A Murphy button was carefully introduced in a large healthy dog and the section removed after sixty days. The mucosa, muscularis mucosæ, and submucosa have the same appearance as in the specimens obtained from my coupler; so also the muscularis and serosa. On the whole, this specimen varies but slightly from the specimen produced from the coupler, the difference being that the ends of the muscularis are in closer apposition in the coupler specimens than in the button specimen. There is no regeneration of muscle in either instance, connective tissue intervening between the ends.

The following is a report furnished by Dr. Evans, pathologist of the College of Physicians and Surgeons:

Section Removed after Eleven Months (Fig. 7).—Report of autopsy on large Newfoundland dog, held Sunday, May 2, 1897.

Present, Drs. Frank, Kunz, and Evans.

The old dog was fat and healthy looking. The line of abdominal incision showed union without adhesions of the underlying viscera.

The intestines showed no evidence of old peritonitis. The point of operation was found 2.6 cm. from the cæcum. There was no distention of the bowel above the point of operation. The omentum is attached at two places. One is over the line of union; the other is 1 cm. therefrom. Each is slight and inconsequential; over the scar the peritoneal coat lies evenly. The blood and lymph vessels are continuous from one side to the other.

When the post-mortem was made, the intestines were still in motion, and it was noticed that the line of union caused a break in the muscle wave.

Intestine *in situ* unopened: There is noticed a V-shaped indentation over the free side of the intestine;

Fig. 4.—Appearance of the Mucosa after Sixty Days (Frank Coupler).

this is about 0.2 cm. in depth. It is not appreciable over the remainder of the intestine. Around the intestine is a linear scar. In the mesentery, 0.2 cm. from the intestine, is an oval mass about 1 cm. in diameter. Over it the peritoneum glides smoothly. The mass is

joined in the scar by a line of scar tissue. This piece was removed for microscopic examination.

Intestine removed, unopened. The finger gently passed through the lumen, appreciated the line of union as a thread-like band, giving the sense of resistance to expansion rather than decrease of lumen.

Intestine removed, opened: The mucosa is continuous over the line of union. Cross-section over the scar shows that in places there is a slight projection into the lumen. In places there is a slight furrow. In the submucosa and muscular tunics there is a narrow band of connective tissue.

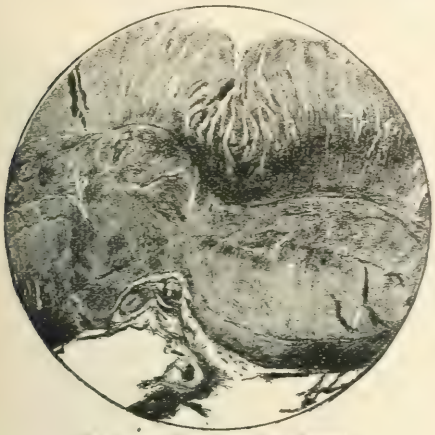

Fig. 3.—After Ninety Days (Evans Coupler).

The sections for microscopic examination were made longitudinally. They were from two places: one from the distal, the other from the proximal side. In some sections there is a wedge-shaped depression that is about 0.6 mm. in depth. In others there is a pyramidal elevation that rises 0.75 mm. Mucosa is joined to mucosa, muscularis to muscularis, etc.

Mucosa: This coat is continuous over the scar without a break. The epithelial glands, the villi, and the cells themselves are absolutely unchanged. The muscularis mucosæ runs into the cicatricial tissue.

In the area of circular muscular fibres the scar reaches its greatest breadth. It is here 0.8 mm. broad. In the longitudinal muscularis it is less broad.

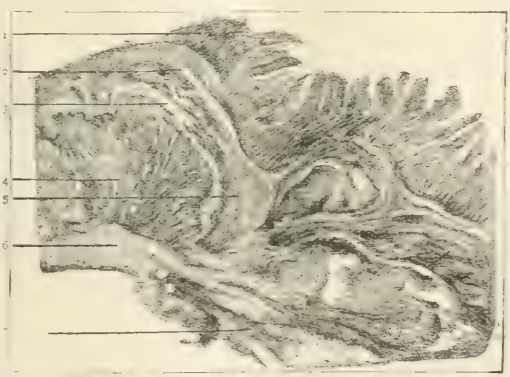

Fig. 4.—After Eleven Months (Evans Coupler). 1, Mucosa; 2, muscularis mucosæ; 3, submucosa; 4, inner circular muscle; 5, scar tissue; 6, outer longitudinal muscle; 7, serosa.

Scar: The connective-tissue fibres run from the serous coat to the muscular coat; generally they are in two groups, with what appears to be some old tissue remnants between the two bundles. The direction of the fibres has a bearing on the question of subsequent contraction. The fibres are as old, dense, and free from nuclei as one would expect in inflammatory connective tissue that is a year old. In this area, and especially near the summit, the region corresponding to the old submucosa, there is an abundance of blood-vessels. Their direction is generally circular. Their walls blend intimately with the surrounding tissue. That transudation is not accurately balanced is shown by some serous infiltration of these fibres.

There is some inflammatory thickening in the serous coat. No sutures were found. Nodule from mesentery; this is a mass of inflammatory tissue. In the centre is a silk suture.

Dr. G. Fütterer, who also examined the microscopical sections, fully agrees with Drs. Evans and Zapffe in their reports as given to me.

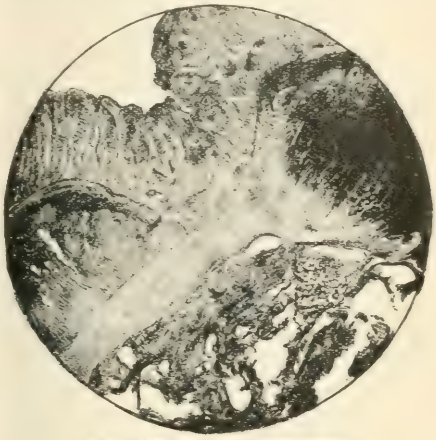

Fig. 5.—After Sixty Days (Murphy Button).

Conclusions.—From the microscopical examinations made by Professor Evans and Dr. Zapffe, and from their reports given to me, I have come to the following conclusions: That the mucosa in all the specimens shows an entropion, which is an entirely passive occurrence and is due solely to the contraction of the underlying scar tissue. There is a complete regeneration of the mucosa.

Garbarini, who did the microscopical work for Dr. Achille Boari, of Italy, in October, 1896, after the use of his modified Murphy button, states that there is no regeneration of the mucosa.

Dr. Hektoen, who reports the microscopical work for Dr. Murphy after the use of his button, claims a complete regeneration of the mucosa.

Submucosa: This coat has become more vascular and denser at the point of union, otherwise presenting no change from the normal.

Muscularis: Quite a difference of opinion exists as to whether or not complete regeneration takes place in this layer.

In all the specimens prepared for me by Professor Evans and Dr. Zapffe there was no restitution or regeneration of the muscular coat. At the cut ends of the muscle some proliferation of muscle cells and an attempt at regeneration invariably take place, but I believe that the connective tissue, like a weed, fills up all interspaces, forming and growing so rapidly as to replace and crowd out the more delicate structures, thus preventing their further growth. There is no question as to the proliferation of the muscle cells in the ends of the cut muscle, but it is insufficient to fill out the gap.

Owing to the pressure of the coupler, some muscu-

lar fibres are no doubt separated from the others, and the connective tissue then growing between them forces these detached fibres out into the body of the scar. It certainly is no attempt at regeneration.

Dr. L. Hektoen, in his report on Dr. Murphy's button-operation sections, states that after thirty days the longitudinal muscular coat can be said to be almost restored, and the transverse muscular completely united by connective tissue. In describing the section which was removed after sixty days, Dr. Hektoen says that the longitudinal and circular muscular layers are continuous and not distinguishable from those in the normal intestine, except that they contain some small spaces (blood-vessels) and occasional traces of fibrous tissue.

I must differ with Dr. Hektoen, as I have not found this condition in any of my specimens nor in that made with the Murphy button on a dog killed sixty days after operation. The most conspicuous part of the scar is the non-regeneration of the muscular coats, and it is the feature which at once attracts one's notice upon looking at the section through the microscope. Dr. Hektoen further says that, were it not for the thickening described in the submucosa and muscularis mucosæ, it would be difficult if not impossible to recognize the line of union.

The submucosa beyond question is thickened, but not so much so as to make it a prominent feature; and as for the muscularis mucosæ, it, like the muscular coats, has not united at all—hence is not regenerated.

If a section after removal is at once placed into Fleming's solution and left there for twenty-four hours, then washed well in running water, followed by immersion in ninety-five-per-cent. alcohol, each layer of the bowel can be distinguished with the naked eye, and your attention is directed to a white band, the muscularis, which is intersected by a dark line. This is the scar tissue. Microscopic examination verifies this. The dark intersection is also seen in the muscularis mucosæ. The submucosa, being in itself connective tissue, does not show this.

I do not question that some muscular fibres may grow out into the scar and meet, but they are not sufficient in number to call the process a regeneration. Even this is not found in any of my specimens, nor in Murphy's. The cutting of the muscular coats acts as a stimulus and the result is a proliferation in the cut ends, but the connective tissue grows far too rapidly to permit a regeneration.

Among the influences which increase the capacity of proliferation of the cell and which lead to a new formation of cells, increased nutrition brought about by a hyperæmia plays an important part. This in a degree explains why the mucosa regenerates, being so highly vascular.

I am now making experiments with various suture methods, in order to ascertain what difference if any exists in the process of repair. The results of this work I will publish later on.

Serosa: This layer is invariably united perfectly and is closely applied to the muscularis. Owing to the irritation and reaction resulting therefrom, it is considerably thickened and more vascular, but otherwise presents no change.

As mentioned in the microscopical reports, the fibres of the cicatricial tissue take a direction from the serosa on one side of the line of union to the muscularis on the opposite side, thus forming two bundles or groups of fibres, which interlace and form a network. This has an important bearing on the subject of contraction and narrowing the lumen of the bowel. The fibres not only pull the ends of the bowel together, but also the muscularis and overlying tissues toward the serosa on the one hand, and the serosa toward the muscularis on the other. If these fibres ran around the bowel in the same direction as the circular muscular fibres, a contraction would result; but this cannot take place when the fibres run in the opposite direction. There is at the same time a thinning of the wall of the bowel as the fibres pull both toward serosa and mucosa.

I am greatly indebted to Mr. W. G. King for his kindness and labor in preparing the photographs from the microscopical sections.

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THE RISE AND PROGRESS OF DERMATOLOGY.*

BY MALCOLM MORRIS, F.R.C.S. EDIN.,

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THE present is a time of jubilees and centenaries—occasions which we, in common with toilers in other fields, celebrate by reviewing the progress that has been made, and giving thanks to God that we are not as our predecessors were a hundred or even fifty years ago. The custom might at first sight seem to have a tendency to engender a feeling of Pharisaic self-complacency. In reality, however, such retrospects have a chastening effect, as showing that, if we have any reason to look upon ourselves as just in a scientific sense, this is largely the result not of our own merits but of those of the men who prepared the way for us. They have the still greater advantage of enabling us to see exactly where we stand in knowledge of the things which form the object of our study, by showing us what has been done and what yet remains to do. As embryology furnishes the key to the riddles of anatomy, so the history of the evolution of any branch of science throws light on many points that would otherwise be dark, explains the origin of terms and theories, rescues from oblivion truths overlooked or forgotten, and, showing the pitfalls which hindered those who have gone before, teaches us to walk more warily.

It is remarkable that in the journalistic pæans in which the triumphs of medicine in the glorious reign of Queen Victoria have lately been recounted dermatology has had no part. Why should this branch of our art be thus unhonored and unsung? It is a form of specialism, no doubt; but specialism is no longer looked upon as an unclean thing—except here and there by some survivor of an antique world. Dermatology, although its victories have perhaps been less showy than those won in some other special departments, has not lagged behind in the onward march of medicine. It has therefore seemed to me that I might on the present occasion fitly endeavor to supply the missing chord in the great *jubilate* whose echoes are still ringing in our ears. A review of the progress that has been made in the knowledge of skin diseases is all the more appropriate at the present time, since what I take leave to call the centenary of the birth of scientific dermatology is not long past. In 1790 the Medical Society of London awarded the Fothergillian gold medal to Robert Willan, who had some time before submitted to it the outline of his plan for the arrangement and description of cutaneous diseases.' Willan may justly be called the creator of dermatology. Before him the skin was looked upon more as a mirror on whose face internal disease "glassed itself in tempest" than as an important organ subject to manifold disorders peculiar to itself. A review of the development of this branch of medicine during the

* An address delivered at the opening of the section of dermatology at the annual meeting of the British Medical Association, Montreal, September 1, 1897.

past hundred years is therefore virtually a history of it from its beginning. This, of course, cannot be told in detail here, although a full record of the work of the makers of dermatology would certainly not be lacking either in interest or in usefulness. All that can be attempted in the time at my disposal is a rapid sketch of the principal changes in the conceptions of skin diseases and in the manner of treating them that have taken place since Willan reclaimed this waste land of pathology and brought it under scientific cultivation.

Forerunners of Willan.—Willan was not the first who wrote on skin disease. As our terminology bears witness, the Greeks gave a good deal of attention to the subject. Hippocrates speaks of "pityriasis," "lichen," "herpes," "pomphi," and many other forms of cutaneous lesion, and roughly classifies them. Later Celsus, Galen, Paul of Ægina, and after them the Arabians, described various affections of the integument. The mediæval writers might have said with Browning's *Karshish*:

> "Scalp disease
> Confounds me, crossing so with leprosy."

Much of the skin disease they saw was leprosy, and they doubtless often imagined it where it did not exist. At a later period syphilis overshadowed everything.

The first treatise professedly devoted to diseases of the skin was that of Hieronymus Mercurialis, of Venice, which was published in 1572 under the title, "De Morbis Cutaneis et de Omnibus Corporis Excrementis." The author had, however, nothing to teach beyond what he found in the ancient writers. In the early part of the eighteenth century Daniel Turner produced "A Treatise of Diseases Incident to the Skin," which appeared with the *imprimatur* of the president and censors of the Royal College of Physicians of London, to whom it was offered in an "Epistle Dedicatory" in 1712. Turner's work, though it is described by Kaposi as "very important," is almost wholly a compilation from other writers, and treats not of the skin alone, but of all "distempers" affecting "the outward Parts or Confines, as may be said, of the Human Body." Thus, not only the eruptive fevers, the "green sickness," and the "yellow jaundice," but phimosis and paraphimosis, hemorrhoids, "chaps on the fundament," imperforate conditions of the natural passages of the body, ulcerations of all kinds, burns, stings, and bites of venomous creatures, hydrophobia, and poisoned wounds are looked upon by the author as falling within his province.

Later in the same century there appeared almost simultaneously two works, each of which in its own way marked a distinct advance toward a scientific dermatology. In a book entitled "Doctrina de Morbis Cutaneis," which was published at Vienna in 1776, Joseph Jacob von Plenck for the first time attempted a complete classification of diseases of the skin. He arranged them, according to what appeared to him to be the most characteristic objective feature, in fourteen groups with one hundred and twenty varieties. In his "Tractatus de Morbis Cutaneis, published in Paris in 1777, Lorry, besides giving good descriptions of clinical phenomena, discussed the pathology of cutaneous affections in the light of the knowledge of the structure of the skin and the morbid processes of which it might be the seat as they existed in his day.

But these were voices of men crying in the wilderness, and neither Plenck nor Lorry—meritorious as were the works of both—did much to dissipate the darkness that was upon the face of this branch of medicine. At the beginning of the nineteenth century it could be said with perfect truth that little improvement had been made in the subject at large since the days of Avicenna.[2]

The Birth of Dermatology.—In 1808 there appeared the first volume of Willan's treatise "On Cutaneous Diseases," a great work, which its author did not live to complete. Ten years before, he had given to the world a slender volume dealing with a particular class of lesions of the skin.[3] Willan set himself the task of reducing the chaos of skin diseases to something like a cosmos. The following, to quote his own words, are the objects at which he aimed in the execution of this design:

"1. To fix the sense of the terms employed by proper definitions.

"2. To constitute general divisions or orders of the diseases from leading and peculiar circumstances in their appearance; to arrange them into distinct genera; and to describe at large their specific forms or varieties.

"3. To classify and give names to such as have not been hitherto sufficiently distinguished.

"4. To specify the mode of treatment for each disease."

Like Plenck, Willan grouped skin diseases according to the character of the predominant lesion; and indeed there can be little doubt that he took the groundwork of his classification from Plenck.[4] The English dermatologist, however, reduced the fourteen orders of his Austrian forerunner to seven, "to be characterized by the different appearances of papulæ, scales, rashes, vesicles, pustules, tubercles, and maculæ." To these another order, "bullæ," was afterward added. This classification is of course very defective, inasmuch as it takes account only of the outward and visible signs and results of disordered action. As the skin has but a limited range of pathological expression, lesions identical in appearance and in structure are produced by widely different causes. Hence a classification based solely on objective appearances inevitably led to the formation of motley groups including conditions having no essential feature in common; wherein, for instance, variola was classed with scabies as being "pustular," and varicella with eczema as "vesicular," diseases. Moreover, as in the evolution of many affections of the skin the lesions run through almost the whole gamut of differences in appearance which constitute the several "orders," it is unsafe to look only at them in seeking for the distinctive characters of such diseases. But Willan's classification, defective as it was, at least introduced a definite principle of arrangement into a region of pathology where before all was "most admired disorder." If he got the idea from Plenck, he must be allowed the credit of having greatly bettered the instruction which he received, and of having presented it to the medical world in such a manner as to impress it on the mind of the profession.

It is not, however, Willan's classification that constitutes his chief title to be regarded as the founder of dermatology. His judicious selection and accurate definition of terms; his astonishingly faithful word pictures of the appearances of disease, drawn directly from nature, and made more vivid but scarcely more graphic by the colored engravings with which he supplemented his descriptions, and his rational methods of treatment, were all his own. It was his teaching that transformed a confused jumble of folklore as to "tetters," wet and dry, and of figments of the medical imagination, embodied in words of learned sound but little meaning, into a science, rudimentary indeed, but grounded on a solid foundation of observed fact. Willan's work is, therefore, rightly looked upon as the true starting-point in the history of dermatology.

The English School.—Willan died before he could complete his work; but, fortunately, he left behind a disciple well worthy to wear his mantle. This was Thomas Bateman, who had been in constant intercourse with him for many years, and who was thor-

oughly acquainted not only with the teaching but with the spirit of his "learned preceptor." Bateman completed Willan's unfinished "Delineations of Cutaneous Diseases," and published a "Practical Synopsis of Cutaneous Diseases," which did far more to make his master's work known than Willan's own unwieldy and incomplete book. It is hardly too much to say that without Bateman Willan might have been forgotten. Bateman, however, was not a mere expositor; he was a man of truly scientific mind, and would doubtless have added largely to knowledge had not he, too, been cut off prematurely.

Bateman's "Synopsis" ran through several editions in his lifetime, and afterward found an editor in Anthony Todd Thomson, who also published an "Atlas of Delineations of Cutaneous Eruptions" illustrative of the descriptions in Bateman's book. Thomson paid special attention to diseases of the skin for more than thirty years. He was an accurate observer, and was very successful in treatment. Toward the end of his life he embodied the fruits of his experience in a "Practical Treatise on Diseases Affecting the Skin," which, however, he did not live to finish; it was completed by his nephew, Edmund Alexander Parkes, who was familiar with Thomson's opinions and methods of treatment in cutaneous diseases, and published in 1850. Thomson held that there could be "scarcely any difference of opinion respecting the necessity of arranging the tribe of those diseases . . . [of the skin] according to the physical characters of the eruptions," and in adopting this method he chose "as the least exceptionable the orders of Willan."[5] But although "forced," as he says, to adopt the arrangement, he was careful to guard himself against the supposition that he regarded "the knowledge of their physical characters as throwing any light upon the nature of the diseases which originate the eruptions."

Thomson was physician to University College Hospital, where he was the first of what may be called a dermatological succession, which, handed on in turn by Parkes, Hillier, and Tilbury Fox, is still worthily continued by Radcliffe Crocker.

Almost simultaneously with the treatise of Thomson and Parkes there appeared a work which is one of the landmarks in the history of the English school of dermatology. This was Erasmus Wilson's "Diseases of the Skin," the preface to which is dated 1851. Wilson, who had commenced his scientific career as an anatomist, had already done a good deal of work in dermatology, particularly in the microscopic study of the cutaneous tissues. He made a new classification of skin affections, grouping them, according to the structure in which the morbid process originated, into four primary divisions: (1) Diseases of the derma; (2) diseases of the sudoriparous glands; (3) diseases of the sebiparous glands; (4) diseases of the hairs and hair follicles. Each of these included numerous secondary divisions, corresponding to the manner in which the structure was changed or the function disordered. Wilson's influence was for a long time predominant among his own countrymen, and by workers in other countries he was looked upon as the foremost representative of British dermatology. He had an eye for form and color, and often found the right word to express them. His description of diseased conditions are thus almost unrivalled in their picturesque and yet faithful rendering of appearances. He added little, however, to our knowledge of the pathology and therapeutics of skin diseases, and added not a little to the confusion which existed on the subject, by his artificial classification and his ever-changing nomenclature.

On the work of the living leader of our British school of dermatology, Mr. Jonathan Hutchinson, it is not fitting to dwell here. It may, however, be permissible to say that he has brought to the study of the pathology of the skin a knowledge of disease in general such as probably no other dermatologist has ever possessed. This, together with a marked originality and independence of mind, and a singular power of seeing points of likeness in things to outward seeming most unlike, has enabled him to throw an unexpected light on many dark places of dermatology.

On the whole it may be said that the characteristics of the British school of dermatology are those commonly held to be distinctive of the British intellect in whatever sphere it is set to work. We are a practical people, loving facts and caring little for theories. Accordingly British dermatologists from Willan to Hutchinson have been first of all observers. They have striven to get at what Magendie called the *fait brut*, to see things as they really are, and to describe what they saw as faithfully as they could. They have been distrustful of generalizations and cautious—perhaps overcautious—in deductions. But the facts gathered by them have endured while theories and systems have followed each other into nothingness; and dermatology as it exists to-day is largely the work of their hands.

The French School.—In France a school of dermatology arose independently in the early years of the century. In 1808 Alibert published his "Description des Maladies de la Peau observées à l'Hôpital Saint Louis," which he followed up two years later by a "Traité Théorique et Pratique des Maladies de la Peau," and several other works. The most valuable part of his publications was the illustrations; his writings only added to the darkness in which the whole subject of diseases of the skin was then enshrouded. His terminology was to the last degree confusing, his classification was arbitrary, his descriptions were often fanciful. Yet he contributed to the advance of knowledge by directing the attention of more scientifically minded workers to the subject. Among these was Biett, who adopted Willan's classification with some modifications and introduced it into France. Biett taught for many years at St. Louis, but the only record of his observations and experience is contained in the "Abrégé Pratique des Maladies de la Peau" of his pupils Cazenave and Schedel, which appeared in 1828. Yet, though he published nothing in the ordinary way, his teaching had a much more far-reaching influence than that of Alibert. In 1831 Rayer sketched out a plan of classification of skin diseases on a basis of morbid anatomy, dividing them into: (1) Inflammations; (2) morbid secretions; (3) congestions and hemorrhages; (4) anæmias; (5) neuroses; and (6) deformities—thus anticipating Hebra in principle and, to a considerable extent, in detail. Rayer's work is a mine of information as to the early literature of dermatology, and embodied the results of extensive clinical observations so accurate and so clearly recorded that much of it is of permanent value.

Among the leaders of the French school who followed Biett were Cazenave, Gibert, Devergie, and Bazin, all of whom did something to advance the knowledge of skin diseases, though they were apt to let themselves be misled by a tendency to erect systems on unsound foundations. To them skin diseases were, for the most part, the expressions of some constitutional dyscrasia, which at best was an unnecessary hypothesis, and was sometimes, as in the case of the so-called "dartrous," "psoric," and "herpetic" diatheses, a myth. Indeed, it may be said that in France dermatology was the "last ditch" in which these mediæval notions still fought for life. In recent years the yoke of the diatheses has been shaken off, and the labors of Hardy, Vidal, Besnier, and Brocq have placed the French school in the forefront of scientific dermatology, a position which, with such men as Darier, Thi-

bierge, Wickham to take the place of their seniors when they have to fall out of the ranks, it is in no danger of losing.

The German School.—The year 1844 marked the beginning of a new era in the study of diseases of the skin, for it witnessed the first appearance of Ferdinand Hebra before the scientific world. That remarkable man breathed a new life into the dry bones of dermatology, and set it on a path of progress which has already led to great results. Hebra applied to the investigation of skin diseases the pathological teaching of Rokitansky. He classified them, not according to their objective appearances, or to the structures supposed to be primarily or mainly affected, but according to the nature of the pathological processes of which they were examples. He used the experimental method, producing various lesions on healthy skin by artificial means, and observing the changes which they underwent when allowed to run their own course, and when modified by treatment of different kinds. In this way Hebra rationalized dermatology, ridding it of the superstitions as to dyscrasiæ with which it had before been infested, and giving to the treatment of skin disease a directness of purpose and a simplicity of means undreamt of by his predecessors. Students of skin disease flocked from nearly every part of the world to sit at the feet of the Vienna Gamaliel, and the influence of his teaching was felt everywhere except in France, where, as has been said, the traditional belief in dyscrasiæ persisted till a comparatively recent period. Hebra's work has been carried on by Auspitz, Kaposi, and Neumann in Vienna, by Pick in Prague, Schwimmer in Budapest, Lewin and Lassar in Berlin, Neisser in Breslau, and many others.

If Willan was the creator, Hebra must be acknowledged as the greatest among the reformers of dermatology. This glory must be his in spite of the fact that his classification in its leading features had been anticipated by Rayer. Hebra, however, worked it out so fully as to make it his own; and his classification, though it has necessarily been modified as knowledge grew, notably by the influence of Virchow's "cellular pathology" and by the newer bacteriological doctrine, can never be superseded till an arrangement based on etiology becomes possible. Such a classification has already been attempted by Auspitz and after him by Bronson, but the time for it is not yet.

The American School.—The history of dermatology in America has been written by Prof. J. C. White, of Harvard, and by Prof. Louis A. Duhring, of Philadelphia, from whom all that can here be said on the subject is taken.[6] For the first thirty years or more of the century little or no interest in cutaneous affections was taken in America. A story is told which, whether true or not, serves to illustrate the state of things in these days. A student, asking a physician for information as to a disease of the skin, was met with the reply: "Sir, I know nothing of skin diseases; you must go to a surgeon." On his applying to the surgeon, the answer was: "Sir, I must refer you to the physician." In fact, as Duhring tells us, a disposition existed to consign the whole of this branch of medicine to those outside the professional pale. No one seemed prepared to take up the matter. Still, even at that period, there was a demand for information on skin diseases which booksellers thought it worth while to supply. Bateman's "Synopsis" was republished at Philadelphia in 1818, a second edition being issued in 1824, and a translation of the work of Cazenave and Schedel appeared in the same city in 1829, a second edition being published in 1832. In 1845 appeared the first American work on dermatology. It was entitled "A Synopsis of the Symptoms, Diagnosis, and Treatment of the more Common and Important Diseases of the Skin," and its author was N. Worcester, professor of physical diagnosis and general pathology in the Medical School of Cleveland. The book is described by Duhring as being little more than a compilation from the works of the French and English dermatologists of the day.

Meanwhile, other signs of a growing interest in the subject were not wanting. In 1836 an infirmary for diseases of the skin was opened in New York, it being the first institution of the kind established in the United States, and lectures on skin diseases were delivered there, and afterward in some of the medical schools of New York between the years 1837 and 1854 by Dr. H. D. Bulkley, father of Dr. L. D. Bulkley, whose name is well known to all dermatologists.

At this time Paris was the centre of the dermatological world, and American students accordingly went there for instruction in the subject. Hence for many years American dermatology was the direct offspring of the French school, the influence of which was only slightly tempered by reprints of the works of Wilson and other English writers. At a later period Americans flocked to Vienna, and on returning home spread the doctrines of Hebra among their countrymen. As early as 1859 Hebra's teaching was made known in America by Prof. James C. White, who, two years later, at Harvard gave the first course of lectures on diseases of the skin. After the civil war clinical lectureships on the subject were established in several important schools. In 1870 the foundation of the *American Journal of Syphilography and Dermatology* did something to promote the advancement of the knowledge of skin diseases in America, and the establishment of the American Dermatological Association in 1877 gave a powerful impulse in the same direction, which was further aided by the creation of the *Archives of Dermatology*. Yet in 1871 Prof. James C. White complained that as yet America had contributed little to dermatology, and that this branch of medicine had hardly then found a place among his countrymen as an acknowledged specialty. Now this reproach has been wiped away, and American dermatology, represented by Duhring, J. C. White, Bulkley, and others, is recognized as being in the van of progress.

The Fusion of the Schools.—Each of the three great schools which helped to lay the foundations of modern dermatology had certain marked characteristics. The English was essentially clinical, using classification only as a practical help in diagnosis; it observed. The French systematized, striding somewhat impatiently over facts to get at general formulas, which, though plausible on paper, too often broke down in application. The German was pathological, giving attention mainly to the mechanism and occasionally taking too little heed of the causes setting it in motion. Each school had thus the defects of its qualities; but each played an important part in the development of dermatology, and much of what was good in each still survives in the cutaneous medicine of the present day.

Now dermatology is truly international, the different schools which were formerly as separate States having become fused into one scientific commonwealth. This has been accomplished by the translation of representative works of each school into the language of the others; by the multiplication of journals devoted to this special branch of medical science, in which everything of value that is published in any part of the world is gathered up and summarized; by the facilities of communication, which make it easy for the scientific pilgrim to visit every dermatological shrine where his devotion is likely to be rewarded with knowledge of some new thing; and by congresses, those marts for the exchange of scientific wares which have so powerfully aided in the diffusion of knowl-

edge, in the extinction of national jealousies, and in the correction of provincial ways of thought. Dr. Johnson when at Oxford was overheard to say that he had a mind to see what was being done in foreign universities, "for an Athenian blockhead is the worst of blockheads." He thus vigorously expressed the truth that a man trained in a particular school is apt to be narrow if he knows nothing of any other. In the sphere of dermatology this kind of narrowness was especially exemplified in the French school, but neither of the others was entirely free from it. How could it be otherwise when they knew so little of each other? How slowly the work even of so brilliant a dermatologist as Hebra became known to the profession in other countries at a time comparatively recent is shown by the following passage which I quote from Prof. James C. White. Speaking of the middle of the fifties he says: "It was not until the intelligence began to spread, slowly borne by word of mouth from country to country, that in an imperial city of Austria there was a man teaching skin diseases as they had never been taught before, with unlimited means of clinical illustration, with the keenest eye for observation, with an unbounded amount of information drawn from many years of experience, with a self-restraint which no desire for premature fame could tempt into hasty publication, and with a sound and logical mind, that the German school of dermatology some fifteen years ago began to be known and to advance to that pre-eminent position it now holds."[7] Fame flies faster nowadays, but the very ease and rapidity with which the results of a man's work can be made known now lead to the publication of much that is inaccurate observation and immature speculation.

Progress in Knowledge.—Turning now from the workers to the work that has been done, the most striking feature of the dermatology of to-day as compared with that of the beginning of the century is the knowledge of the nature and causes of skin diseases that has been gained. Willan and Bateman left little in the way of outward appearances for those who came after them to describe, but no real knowledge of pathological processes was possible till the microscope and other modern methods of research were applied to the study of diseases of the skin. This is the special achievement of the German school. The attention directed to processes has led us to recognize that many conditions which used to be looked upon as distinct affections are really different stages in the evolution of one and the same disease. In this way dermatology has been greatly simplified. Compare, for instance, the modern teaching as to eczema with that of Erasmus Wilson, with his six principal varieties—erythematosum, papulosum, vesiculosum, ichorosum, pustulosum, squamosum; and his ten subvarieties—marginatum, fissum, mucosum, scabidum *seu* crustaceum, œdematosum, tuberculosum, spargosiforme, sclerosum, verrucosum, neurosum. Then, according to the parts attacked, there was eczema capitis, faciei, auriculare, mammillare, umbilicale, perineale. The varieties of psoriasis were still more numerous—punctata, guttata, alphoides, nummularis, scutellata, orbicularis, annulata, circinata, vulgaris, gyrata, circumscripta, diffusa, confluens, discoidea, centrifuga, imbricata, figurata, inveterata; with the local forms—palpebrarum, labialis, præputii, scrotalis et pudendalis, palmaris, unguium; it is like the catalogue of the ships that bore the Danaans to Ilios. And for a long time nearly every writer on skin diseases thought it due to himself to show his inventiveness in the same way. It is no wonder that dermatology treated in this way was a terror to students and an affliction to practitioners.

Further simplification has resulted from our having learned to distinguish between the primary lesions which are the notes of a particular disease and the lesions which result from secondary causes, such as injury from scratching or rubbing and the invasion of pyogenic micro-organisms. Much confusion and needless multiplication of types were caused in former days by mistaking the accidental for the essential in such affections as scabies, eczema, ringworm, impetigo, and other conditions liable to complication by suppurative processes.

Pathological research has done much to elucidate the nature of growths, benign and malignant, of the skin. The work of Jacob Warren, Hutchinson, Dubreuilh, and Norman Walker in regard to rodent ulcer and that of Kaposi in regard to sarcoma of the skin and xeroderma pigmentosum mark distinct advances.

Real progress in the science of medicine, however, is measured by the increase in our knowledge of the causes of disease. In this respect it may, I think, be said that as much has been done in dermatology as in any branch of medicine. The etiology of a very considerable proportion of skin diseases is now accurately known. Among the causes whose operation has been clearly traced, a prominent place is occupied by inoculable viruses which infect the system, such as syphilis, tuberculosis, leprosy—to mention only the more common. Ricord, Fournier, Sigmund, and Hutchinson have shown how many and various are the cutaneous manifestations of syphilis, and with what versatile mimicry it assumes the form of other diseases of the skin. Tuberculosis has been proved to be accountable not only for lupus, but for affections formerly classed under the heads of lichen and erythema and for the other forms of skin disease included under the general term scrofuloderma. The sorting out of the cutaneous affections due to these two causes alone has greatly reduced the region of the unknown in the map of dermatology.

The Action of Parasites.—Another direction in which the etiology of skin diseases has made decided progress is the recognition of the action of parasites. The idea that scabies is due to the irritation set up in the tissues by an animalcule, and ringworm by the growth of a vegetable mould on the surface of the skin, is so familiar to us that it is not easy to realize how recently the truth of these doctrines has been definitely established, and with what incredulity the discoveries were for a long time received. The sarcoptes scabiei had been seen by Avenzoar in the twelfth century, and later by Guy de Chauliac, Ambroise Paré, and others, and in the seventeenth century it was distinctly indicated by Bonomo and Cestoni as being the cause of itch. It was rediscovered more than once afterward, but it was not till 1834 that Renucci, in Alibert's clinic, was able to show how it could always be found.[8] Yet in 1850 Antony Todd Thomson is allowed to say, without a word of protest from his editor, Parkes, that itch is certainly "the result of a morbid poison, and that the fluid of the vesicles or the pustules is the agent transmitting the disease;" and while awarding Wilson credit for his accurate description of the acarus Thomson expresses his inability to "accord with him in attributing the disease to that insect."[9] Still later we find a dermatologist like Devergie writing: "The acarus is a morbid product of the itch as the mycoderm is the morbid product of ringworm, as the insect of acne punctata is the morbid product of that disease, as the louse is the morbid product of pediculous prurigo. Ringworm is contagious through the medium of this mycoderm, not only from child to child, but from the head of a child to the bark of certain trees, and the lousy evil[10] from person to person. Ringworm, acne punctata, and the lousy evil, do they originate the less spontaneously on that account? The means that we use to destroy the acarus, are they not also suitable for curing the erup-

tion of itch?" The fact that only forty years ago a dermatologist of the first rank could thus in one sweeping anathema condemn root and branch the doctrine of parasitism in skin diseases is one of the most striking proofs of the youthfulness of scientific dermatology, and of the progress which it has made in its lusty childhood.

The discovery of the vegetable fungi which cause ringworm, favus, tinea versicolor, and erythrasma, unlike that of the itch mite, was not made in the dark ages, but almost in the full glare of the light of modern science; yet it was received with equally resolute disbelief by some of the leaders in dermatological Israel. In 1839 Schoenlein discovered the fungus which produces favus; in 1844 Gruby in Paris, and Malmsen in Stockholm, almost simultaneously and quite independently discovered that which causes ringworm. Here, again, we find A. T. Thomson, in 1850, asserting in regard to favus that, though the disease has been ascribed to a mycoderm, "there is no proof of that opinion," and in regard to ringworm that "the pustules constitute the disease, and the mycoderm merely finds its habitat on them."[12] In the same year Cazenave[13] could scarcely bring himself to admit the existence of the achorion Schoenleinii, and, with regard to fungi in general in their relation to skin diseases, he was emphatic in warning investigators against "the illusions of microphotography," and denied that these "mysterious atoms" possessed any pathogenic property. In 1863 Chausit, a pupil of Cazenave, argued strongly against the cryptogamic origin of ringworm, concluding that "in the present state of dermatology there is no disease of essentially parasitic nature, and there is no such theory as antiparasitic therapeusis."[14]

Gibert, who had long been an obstinate recusant, gave in his adhesion to the parasitic doctrine in 1866, but Cazenave never recanted his heresy, and Erasmus Wilson, who, after Cazenave had passed away, stood alone in his refusal to accept the teachings of modern science on this subject, also died an unbeliever. The brilliant researches of M. Sabouraud have recently proved that the disease hitherto known as ringworm includes two, and possibly more, distinct conditions caused by different species of fungi. It has also been shown that the disease may be transmitted from animals—particularly the horse—to human beings, a fact obviously of the greatest practical importance. Sabouraud and other observers in other countries have thrown light on the geographical distribution of the ringworm fungus, and the remarkable fact has been brought to light that the species which causes the most rebellious form of the disease is most frequently met with in London, is unknown in Italy, and is very rare in Germany. This has an obvious bearing on the records of the results of treatment in those several countries. Another point which is suggested in recent investigations is that the boundary line between ringworm and favus is by no means so definite as has hitherto been believed. It is clear that there is yet much to be done in a subject which a short time ago was looked upon as worked out.

Bacteria and Skin Diseases.—During the last few years our ideas as to the action of parasites have undergone expansion. The influence of the great revolution in pathology brought about by the discoveries of Pasteur, Koch, and their disciples has been felt in the sphere of dermatology as in other departments of medicine, and we have learned to look for the causes of many diseases in the world of the infinitely little which bacteriology has revealed to us. Already lupus, leprosy, carbuncle, glanders, sycosis, furuncle, impetigo contagiosa have been proved to be the result of the mischievous activity of specific micro-organisms. It is practically certain that syphilis has a like origin, but the particular microbe responsible for its production is still "wanted" by our scientific police. More than one has been arrested on suspicion, others are being closely shadowed, and there is every hope that the actual criminal will soon be found. Eczema is considered by Unna, who has done much for the recent advance of dermatology, to be of microbic origin. A similar causation is assigned to psoriasis, and by others to alopecia areata, acne, and certain forms of erythema. Quite recently Sabouraud has brought forward evidence which he thinks sufficient to prove that seborrhœa and common baldness are of the bacterial family of diseases. These views are not yet accepted by all dermatologists, but there can be little doubt that as methods of research are perfected the "sphere of influence" of bacteriology in relation to skin diseases will become greatly enlarged. Already it extends far more widely than the brief list of diseases which have been definitely traced to microbic agency would seem to show. In almost every case of skin disease the primary and essential process is at some period of its course complicated, and it may be overshadowed by secondary lesions. To bacteriology we owe the knowledge that these are due to the action of pyococci and streptococci, whose attacks the skin resists in health, but to which it falls an easy prey when diseased. The importance of this knowledge, both in relation to diagnosis and to treatment, can hardly be overestimated.

Other Lines of Advance.—I can make only the briefest reference to other lines along which dermatology has advanced in recent years. Of these the most important has been the increased attention bestowed on the relations of various forms of cutaneous affections to disorders of the nervous system. In this field the most notable workers have been Bärensprung, Weir Mitchell, Morvan, Schwimmer, Radcliffe Crocker, and above all Leloir, whose untimely death was a grievous loss to dermatology. A large number of skin diseases presenting the greatest diversity in their objective features have been shown to be dependent on lesion or functional disorder of some part of the nervous system. Many diseases, such as zoster, erythema, pemphigus, scleroderma, and various forms of cutaneous œdema, hemorrhage, and ulceration which used to be called "idiopathic"—the medical equivalent for the "visitation of God" in the simple etiology of the British juryman—are now recognized to be consequences of vasomotor or trophic disturbance. We also know that defective innervation plays a considerable part as a predisposing cause, making the skin less able to resist harmful influences of any kind—injury, cold, heat, and irritants whether chemical or parasitic. In this way nervous disorder comes into play as a definite factor in many cases of eczema, lichen, and other affections. The late Mr. John Marshall threw out the pregnant idea that cancer might be an "anarchy of cells" due to loss of control by the nervous system. The same cause might account for some diseases of the skin. The neuropathology of the skin is a field that will well repay further cultivation.

Another line along which we have advanced is the establishment of a definite relation between certain constitutional states and affections of the integument. The tendency of the French school to look to the general system for an explanation of every blotch and pimple led them away from the truth no doubt, even to the invention of a diathesis when one was wanted: but some dermatologists have perhaps now gone a little too far in the opposite direction. It is well that with the all-conquering bacillus on every side extending the boundaries of his empire, we should not forget that other agencies have still to be taken into account. Gout has not the far-reaching influence in the production of cutaneous affections that it used to be credited with: but it is sometimes a factor that must be reckoned with. The connection of certain

forms of pruritus and herpes, of boils and carbuncles, of a particular variety of xanthoma with glycosuria is well known.

The influence of auto-intoxication requires to be more thoroughly studied than it has yet been; the effects of ptomains should also be fully investigated. The serum treatment which is now being tried in diphtheria and other diseases is making us familiar with toxin rashes; is it not possible that the prolonged operation of some similar cause might explain the origin of some skin diseases?

Progress in Power. — Bacon's aphorism that "knowledge is power" unfortunately does not always hold good in medicine. Yet we may fairly congratulate ourselves on a very decided gain in our power of dealing with skin diseases, especially in the last fifteen years. Progress has been made in three ways: (1) We have got rid of some superstitions; (2) we know better where to direct our attack, and (3) we have more effective weapons.

Among the superstitions that hindered progress one of the most pernicious was the notion that skin disease was a natural issue for the escape of peccant humors—a safety valve for the constitution. Hence in many forms of skin affection, and particularly in the case of eczema, it was believed to be dangerous to cure the cutaneous lesions, because the disease was thus "driven in" upon the internal organs. As a quaint illustration of this belief the following passage from our earliest English dermatologist, Daniel Turner, is interesting. Speaking of "Children's Scabs or Breakings-out," he quotes with implied approval the following admonition from "the most excellent Hildanus":

"Let Mothers have a Care how they set about the Cure of this Malady, unless it be so virulent as to hazard corrupting the Parts it lies upon. My eldest Son [says he] till he was seven Years old had not a Speck upon his Body, wherefore I often foretold that some sudden and mortal Disease would seize him; and, indeed, being taken with a Stoppage of Urine, he died the seventh Day of the Disease of a great Inflammations of the Kidnies and Parts adjoining which turned to a Gangrene: Nature, to-wit, not being able to purge the Body of vitious Humours by the Itch, they in the seventh Year, as by a critical Expulsion, fell suddenly from other Parts upon the Loins. In my Practice I have met with several Diseases both internal and external in young Children in whom these Breakings out were either not naturally expell'd or violently dry'd up. Therefore, let the honest Physician abstain from Medicines; and if there be a Necessity, let the pain of this Itch in Children be only mitigated with Fresh Butter or with the same washed in Rosewater."[15]

Willan and the other dermatologists had the fear of "repelling" diseases of the skin ever before them. Perhaps the most grotesque instance of superstition is a case referred to by Duhring as being recorded by a Boston doctor. This enlightened practitioner, finding two African children afflicted with body lice, put them into a warm bath; on being suddenly freed by this means from their vermin, they incontinently "dropped down and expired immediately." But the fear of "driving in" skin disease is not yet by any means extinct in the medical profession or even among dermatologists; it would be easy to quote passages in proof of this from living writers of authority.

Increased precision in the direction of attack naturally arises from increase of knowledge as to the nature, and especially as to the causation, of cutaneous affections. Nowadays we at least do not, as Archbishop Whately said of the common run of preachers, "aim at nothing and hit it." The polypharmacy in which the older school of dermatologists delighted is almost a thing of the past, and patients are not plastered in the wholesale and indiscriminate manner that used to be thought necessary for the correction of their constitutional depravity. Internal medication is used only in response to definite indications, and we work the "miracle of cure," to use a too celebrated phrase, with the help of a simpler, pleasanter, and more efficient pharmacy. The improvement in our weapons lies mainly in the methods of preparing and employing the old remedies, but newer ones are not wanting.

The administration of remedies by hypodermic injection may be mentioned as one of the most promising improvements in constitutional therapeusis; the use of mercury in this way in syphilis is becoming more and more common. The serum treatment has not yet established itself in dermatological practice, but good results from it have been reported in a few cases of syphilis, lupus, leprosy, and one or two other affections. Tuberculin as first prepared by Koch has in my own hands and in those of some other observers proved of distinct use as a preliminary to surgical treatment in lupus. The newer tuberculin lately "placed on the market"—I am sorry to have to use this commercial phrase, but it accurately expresses the fact—gives promise of much greater usefulness, but it is too soon yet to pronounce a definitive judgment as to its real efficacy. Thyroid extract has a powerful immediate effect on the integument, but my own experience does not lead me to attach much value to it as a remedy in skin disease, and that opinion is confirmed by the experience of several other dermatologists.

But it is in our means of local treatment that the improvement of our weapons is most marked. The application of the parasitic doctrine to skin diseases has led to the introduction of a large and constantly increasing number of parasiticides—powerful agents that the midcentury dermatologists knew not of. Then both the preparations and the methods of applying them are cleanlier and more effective. The pastes, plaster mulls, varnishes, soaps, sticks, and other devices for the application of remedies which we owe to the ingenuity of Pick, Unna, Lassar, Brooke, and others have revolutionized the local treatment of skin disease. Our surgical methods and appliances, our antiseptics, our cauteries, and so forth, are also immensely superior to those in use twenty years ago.

Do we cure more than our scientific forefathers did? I think we may unhesitatingly answer, "Yes." Parasitic diseases are certainly more under our control, and in nearly every form of skin disease we can treat symptoms more effectively, and give relief even when we fail to cure. We are altogether milder in our methods than the dermatologists of a former day; we soothe instead of irritating; we strengthen instead of depleting; we leave nature to herself instead of thwarting and teasing her into active rebellion. But there is still a good deal of overtreatment, and I not infrequently see patients whose disease has been aggravated into frenzy, so to speak, by the continuous goading of injudicious treatment. The policy of "masterly inactivity" finds a large sphere of application in dermatology.

The Future of Dermatology.—I have given a review of the past, very hasty and imperfect, but I can only, like swift Camilla, skim across the plain. I may be allowed to conclude with a peep into the future. Whether the newer medication with serums and organic extracts holds in it much promise for the treatment of skin disease it is of course impossible to say; I am, however, inclined to think that in this direction, and in that of increase of power of dealing with parasitic affections, lies the path of development in dermatological therapeutics likely to lead to the best results. It will be long before a complete classifications of diseases of the skin is possible, but this is of no great practical importance. A real stumbling-block,

however, is the confusion of terminology that still exists. It would be a very real help to progress if a nomenclature at once simple, precise, and yet descriptive and international could be devised.

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SOME PRACTICAL OBSERVATIONS ON PULMONARY TUBERCULOSIS.

By HUBBARD WINSLOW MITCHELL, M.D.,

MEMBER, NEW YORK ACADEMY OF MEDICINE, MEDICAL SOCIETY OF THE COUNTY OF NEW YORK, NEW YORK COUNTY MEDICAL ASSOCIATION, PHYSICIANS' MUTUAL AID ASSOCIATION; EX-PRESIDENT, MEDICAL SOCIETY; EX-VISITING SURGEON, BELLEVUE HOSPITAL, OUT-DOOR DEPARTMENT.

Pulmonary tuberculosis is a disease which occurs perhaps more frequently than any to which mankind is subject, appearing in persons of all ages, in every clime, and under all conditions of life.

It is now accepted as a fact that this disease is due to the introduction into the lungs of a micro-organism known as the tubercle bacillus. This tubercle bacillus is a short, delicate rod, slightly curved, and having a length of from one-half to one diameter of a red blood globule. When stained with a solution of carbolic fuchsin it assumes a bright red color, and under the microscope presents a well-defined body with from two to five vacuoles. These vacuoles give it a sort of beaded appearance, and it is probable that they are the nuclei of new bacilli, which are formed by the fission and subdivision of the parent bacillus. It is doubtless true that these bacilli multiply by a rapid subdivision of themselves. When the bacillus is thus stained with carbolic fuchsin it slowly assumes a bright red color, which is permanent after treatment with strong acids, and this characterizes it from all other known forms of bacteria. It can be cultivated in various media, such as blood serum and potato, when the cultures are kept at blood heat. They grow slowly and appear at about the end of two weeks, forming colonies of bacilli in grayish-white masses on the surface of the culture medium. But little is yet known of the chemical composition of these little organisms. They multiply with great rapidity in lung tissue, and a patient suffering with pulmonary consumption discharges them in the sputum in considerable numbers. It is an exaggeration to state that they are discharged by millions by every patient daily in his sputum. They do not occur in any such vast numbers. They are plentiful, it is true, but not by millions. They are extremely tenacious of life, and retain power to do harm even when dried for a considerable length of time. When they are expectorated in the sputum of a patient, great care must be taken to destroy their virulence, else they become a focus of danger to others wherever they are discharged. The sputum of phthisis is a dangerous substance unless it is most carefully disposed of or rendered sterile.

In the dust collected from the walls and bedsteads of hospital wards, in prisons and asylums where phthisis patients have been kept, bacilli have been found in considerable numbers, showing that in these places the sputum was not properly rendered sterile and harmless, and new foci of infection were thus formed.

Mode of Infection.—It is doubtful if phthisis is hereditary. Hitherto life-insurance companies have rejected applicants for insurance whose parents or members of the family have died of phthisis, even when the applicant himself was in perfect health. It is a disputed point how far the theory of heredity is true, but from my own observations and studies I do not believe that the ancestors of such persons conferred a taint sufficient to warrant his rejection.

If a woman afflicted with phthisis becomes pregnant (and this is a common occurrence), it is very doubtful if she can transmit it to her child. If a man suffering with phthisis impregnates a woman, the venereal act does not transmit the disease to her or her child. The semen, so far as known, contains no bacilli. Heredity, therefore, is of little value to-day.

The following is a case in point:

Mrs. A——, aged twenty-nine, came to me on April 1, 1894, suffering with phthisis. She was pale, anæmic, extremely emaciated, had night sweats, and no appetite. She had had several hemorrhages from her lungs during the preceding six months; her right lung, upper lobe, was infiltrated with purulent matter, with coarse bubbling râles; her cough was distressing, her sputum copious and contained pus cells and bacilli. She was eight months advanced in pregnancy. She could give no definite account as to when she first began to cough.

April 30th she was delivered of a healthy female child at full term.

On June 1st I began to give her treatment relating especially to her lung disease. This was continued steadily until December of that year, when she left me, at which time her sputum contained no bacilli and all her symptoms were greatly relieved.

July 1, 1895, she gave birth to a boy at full term and perfectly healthy.

September, 1896, she gave birth to a third child, a boy, at full term, also perfectly healthy. She began to cough when the child was two weeks old, and applied to me for treatment. With the exception of a slight bronchitis she was well, and remained so till this date. Her three children are living and have shown no signs whatever of receiving any taint from their mother. The father is a perfectly healthy man.

The mode of infection, then, is by inhaling a germ from some outward source, and doubtless in this way only.

Contagiousness of Phthisis.—Accepting as we do the theory that phthisis pulmonalis is a result of the introduction into the lung of the tubercle bacillus, then that microbe must surely be introduced from without and from some source where the bacillus has retained its activity and its virulence. Remembering that the sputum from phthisis patients contains considerable numbers of these bacilli, which are distributed widely

through dust and the careless voiding of sputum, it will be seen that the danger from this source is very evident and the acquirement of the disease in this way is very certain.

Kissing a phthisis patient is a source of danger, from the fact that bacilli may be present upon the lips or in the buccal cavity of such a patient, and the person thus kissed may introduce into his own air passages one of these dangerous microbes and thus acquire the disease.

But contagion from personal contact at home, in hotels, or sanatoriums, or from inhaling the breath of a phthisis patient is a very doubtful source of danger, and is not believed in by the majority of experienced and competent physicians.

Cases have been recorded (with more or less truth) in which phthisis has been acquired by inoculation, as from persons washing the clothes of such patients, or the bite of a tuberculous person, or inoculation from a cut or abrasion where the sputum has been dried in contact with an open wound. Further light on this point is needed.

The common house fly (Musca domestica), feeding upon sputum containing bacilli, has been found to contain these microbes in his body, and has thus perhaps disseminated them more or less widely. Several observers have found bacilli in the bodies and upon the surface of these flies. This insect may possibly be a means of spreading the disease, as well also as some other members of the order Muscariæ.

Influence of Age.—Tuberculosis occurs in all periods of life. The nursing babe is its victim, and the innocent child, as well as are those whose sands of life are nearly run. No age is immune to this dread disease. In young persons we find the lymphatic glands frequently and often extensively affected. In the middle-aged and the old, the lungs seem to be especially prone to this disease.

Locality and Soil.—My personal experience and observations lead me to say that locality and soil play an unimportant part. It has been the custom and the fashion hitherto to send patients away from their homes in our Eastern cities to higher altitudes, in the belief that an elevation of from three thousand to eight thousand feet above sea level is beneficial to tuberculous diseases of the lungs. We thus get rid of the patient, but not the disease, and in too many cases he comes home to die, or dies before he can get home. The relief he obtains in being sent away from home is very doubtful.

I have spent considerable time in travelling in the Catskills, Adirondacks, and the Rocky Mountains, investigating with some care these localities, with their varying altitudes above sea level and their influence upon the lungs, and, while perhaps a high and dry and lighter air may be beneficial in some diseases and for its influence upon the general health, I do not believe that it has the slightest effect upon the growth and proliferation of the tubercle bacillus itself. In this opinion I am heartily confirmed by the judgment of many able and careful practitioners with whom I have most earnestly conversed, and I repeat that altitude has no influence whatever in destroying the tubercle bacillus. A considerable experience with this disease has led me to believe that no place is better for its treatment than New York City. Patients have come to me from every State in the Union, from Canada, from the Sandwich Islands, and from Europe; and it appears to be the general belief among them all that the climate of New York City, with its clear air and bright sunshine, is quite as favorable under all circumstances as is that of most other localities. I have under my care at this time patients from several towns in Colorado, from New Mexico, and California, and all are doing better in this city than in their own localities.

Action of Bacilli.—It is interesting to note the changes which occur in the pulmonary tissue when a bacillus has been successfully introduced. When a bacillus so enters the lung tissue it is followed almost immediately by an inflammatory action of the spongy tissue of the lung and the formation of small rounded masses, which are termed "tubercle." When these tubercle masses are once formed they quickly undergo a process called caseation. This caseation is a process of coagulation going on in the lung cells; they lose their outline, become irregular, and are converted finally into a structureless substance, and are gradually converted into a yellowish-gray pus, in which the bacilli are more or less abundant; and when this matter infiltrates the inflamed lung tissue it is loosened more or less by the inspired air, escapes first into the smaller bronchi, then into the larger, and is finally coughed up by the patient in the form of a thick, yellowish, grayish, or greenish sputum, containing bacilli more or less abundantly.

This sputum is the medium of contagion, and must be rendered sterile if we would prevent the extension of the disease to new and helpless and innocent victims.

Temperament.—Temperament seems to play an important part in the acquirement and behavior of phthisis. Persons who are tall and thin and anæmic, and those with red or sandy or light hair, and thin, pallid skin and pale mucous membranes, and weak sexual organs, seem to be very liable to tuberculous disease; those having the alkaline temperament far more so than do the shorter, darker-hued, and more athletic persons, or those of the acid temperament, according to Dr. Gibier.

In this class of cases, the alkaline, it would seem that the apices of the lungs and the subscapular regions are the favorite localities where this disease loves to burrow. It is here that cavities form more readily, and the disease seems more persistent than when in the middle or lower lobes. When the patient who is tall and pale and badly nourished, whose blood is anæmic, acquires phthisis, one or the other apex is very often involved, and he resists treatment to a great degree. In this class of cases also, and when the disease has made any headway, the poisonous principle of the disease, whatever it may be (ptomains or what not), seems to pervade the entire body, and we have in consequence diarrhœa, night sweats, hemorrhages, loss of appetite, and an inability to assimilate the little food taken. These patients seem to fall before this disease as readily as grass before the mower's scythe. In this class of cases phthisis is so difficult and persistent that it appears almost malignant.

Not all persons who inhale tubercle bacilli contract the disease. Were it so, few persons would escape; but in order that this bacillus may gain a lodgment in the lung, a lowering of the vitality must be present, and the lung tissue must be weakened from some cause. When such a weak lung or special temperament or adaptability to receive the disease is found, it becomes a ready prey to the immigrating microbe. In probably the majority of cases in which bacilli are introduced into the lung tissue, they are for some reason destroyed at once and do no harm, and this reason is either an acid temperament or a power to resist disease; but in other cases, in which I have said the lung for some reason forms a congenial habitat, the bacilli grow luxuriantly, caseation and softening occur, and the invading army of bacilli gains a victory which ends in death, unless checked at the outset by appropriate treatment.

Tuberculosis in the Lower Animals.—In the animal kingdom we find certain species that contract pulmonary tuberculosis more or less readily. Animals who thus acquire the disease are those which come in

contact with man, either in the feral or the domestic state. Among the feral group comes first the order of apes.

Apes may be divided into two general classes, as follows: The Cynomorpha or dog apes; the Anthropomorpha or man-like apes. All of these have been called catarrhine apes; that is, having a nose somewhat narrow, with a thin septum.

Some years ago, while I was visiting West Africa, I spent some time on the Congo River, and in the wild and unknown regions bordering the south bank of that great stream I saw considerable numbers of baboons. Of these, the anubis baboon (Cynocephalus anubis) was the most common and numerous. They are a very wary, alert, and mischievous animal, living in troops of twenty or more, and love to approach the dwelling of man, where their thievish propensities cause them to be regarded by the natives as a great nuisance.

The mandril (Cynocephalus mormon) and the magot (Macacus sylvanus) are also frequently met with on both banks of the Congo. I have seen them in considerable numbers, and their curiosity has led them to approach us very closely. On several occasions, while we were hunting for deer and other game, a group of baboons would be seen hovering over one of their number who appeared to be unable to move. It was easy to approach him, as he was too feeble to escape. His companions scampered away and watched me at a short distance, with amusing curiosity. Inquiring of the natives what the trouble was, I found that the baboons were frequently taken ill with some chest trouble which was similar to that from which the natives themselves suffered. This I learned afterward was phthisis, which is not uncommon among the blacks in the lower Congo district.

In the wild and almost uninhabited country about one hundred and fifty miles north of Cape Town in South Africa, the common baboon is very numerous and a most unwelcome visitor to the negroes, who suffer severely from his thievish and predatory acts. On several occasions during the twilight, and at a distance in the daytime, I have mistaken these animals for small negroes, as they frequently sit upright and sometimes walk on their posterior limbs aided by their arms. This was the common baboon (Cynocephalus papio). They are found in this locality in considerable numbers, and have very little fear of man. An English officer who lived at this point, whom I visited, told me that the natives frequently contracted phthisis on their visits to Cape Town, and it seemed probable that the sputum of these people, being carelessly voided in their gardens and about their houses, was communicated to the baboons in some of their marauding expeditions, and this gentleman told me it was not an uncommon sight to see a sick baboon presenting the same symptoms as the natives when suffering from phthisis.

I soon had an opportunity to verify this fact. One day, while hunting in the adjacent hills, I came across a baboon lying on the ground, who was extremely emaciated and had a severe and violent cough. At that time the existence of the tubercle bacillus was not known, but I felt sure that the animal was suffering from pulmonary tuberculosis.

The Domestic Group.—The common ox (Bos taurus) is frequently afflicted with pulmonary tuberculosis; so much so, in fact, as to make necessary a rigid surveillance of our great abattoirs by competent and authorized inspectors. Undoubtedly these animals contract the disease from their long and close proximity to the genus Homo.

The dog (Canis familiaris) and the cat (Felix domestica) are both extremely liable to pulmonary tuberculosis, and this would seem almost a foregone fact from their intimate association with man.

The duck (Anas boschas), the goose (Anser anser), and the domestic fowl rarely but occasionally contract this disease. It is not improbable that other animals fall victims to tuberculosis, but they do not specially interest us here. It is those animals with which we deal daily, and whose flesh and milk we consume as articles of food, that interest us most closely.

Symptoms.—The train of symptoms of pulmonary phthisis are well known, and I need not dwell upon them here.

Diagnosis.—The diagnosis of pulmonary phthisis is in most cases very plain. The presence of cough, expectoration, emaciation, night sweats, diarrhœa, anorexia and thirst, loss of flesh and general anæmia, with hemorrhages more or less severe, are almost always met with, and point to the true nature of the disease. But the unfailing test in diagnosis is the presence of the bacillus in the sputum. If it contains no bacilli then the disease is not pulmonary tuberculosis *per se*. A very early diagnosis can thus be made.

The experienced and careful physician has very little difficulty in making a correct diagnosis, even without the immediate examination of the sputum. He may prescribe at once for a case, but he must very soon after examine for bacilli, in order to confirm his judgment, and frequently during treatment, that he may know if they are diminishing (if present) and whether his patient is really recovering or not.

Prognosis.—Pulmonary phthisis, when not modified by treatment, is an extremely fatal disease. No accurate percentage of deaths can be given, because these percentages differ with many writers, but when the disease is allowed to run its course without treatment it is a rapidly and terribly fatal malady.

The Economic Value of Disease. — Some writers hold that disease, and especially tuberculosis, has a certain economic value in preventing the overpopulousness of the earth. In past geological ages, the exuberance and overpopulousness of animal life on the earth has been regulated and held in check by the operation of several influences. The lower forms of life that have been so prolific in their reproduction have been preyed upon by the higher orders of animals, which used them as food. Every species of animal has found a destructive enemy in some other species of animal, and this process of one animal preying upon another has served in all ages as an effectual check upon the overproduction of any one species.

With man there was no other or higher animal to hold in check the rate of his increase. To regulate and repress his too exuberant reproduction three influences quickly sprang into activity. They were: first, his internal destructive warfare; second, the ravages of disease; third, his own individual vices.

His early tribal quarrels continued until supplanted by more destructive modern warfare, and these influences acted with such baleful force as on several occasions seriously to affect the welfare of mankind. Thus in the reign of the Roman Emperor Justinian, A.D. 527–565, the influences of his wars, with the famine and disease that followed, destroyed one hundred million of human lives and caused a visible diminution of the human race.

The ravages of disease have acted as a powerful check upon the increase of mankind. As people aggregated into communities and nations, and lived in close contiguity, they were ignorant of sanitary laws, and they suffered severely from sporadic and epidemic disease. Tuberculosis played a malignant and destructive part, and it is said destroyed one-third of all those who died of disease. Whether this special disease has any economic value or not, we can hardly say; but while the question is being argued by the theorist, the practical physician will do all in his power to abate its terrors.

The individual vices of men have certainly some economic value. The habitual criminal, the cruel and morbidly vicious, the drunkard with his ungovernable craving for intoxicants, and the prostitute, are all victims of disease and lack the mental balance necessary to make them sound and responsible beings. It is from the ranks of these classes that the insane are largely recruited. If they allow unrestrained action to their vicious or intemperate habits, the prison, the hospital, or the grave ends their career.

Treatment.—At the outset we must distinctly remember that pulmonary tuberculosis is an inflammatory disease of the spongy tissue of the lung, due to the introduction of a special microbe, and followed by a true ulcerative and suppurative process in the lung substance. This may, then, be described in a word as a special ulceration of lung tissue with an expectoration of the suppurating matter, and any treatment which is destined to cure or even relieve it must be addressed to the actively ulcerating condition of the lung.

Many remedies have been advocated for the treatment of this disease, and at the present time both the lay and medical journals are teeming with the discovery of this or that person who has a "consumption cure." In many cases doubtless this activity is due to an earnest desire on the part of the discoverer to find something which will modify or cure tuberculosis. Whether serum or subcutaneous injections of any special remedy, or whether medicated inhalation will be of lasting benefit, is a problem yet to be solved. When we remember that phthisis is an active ulcerative process of the lungs, it would seem that these lines of treatment are not adapted to its cure.

It would also seem that some remedy which can be introduced into the body at short intervals and for a long period of time, something that will act as an antiseptic by saturating the blood and so modifying or destroying the bacillus, and at the same time inflict no injury upon the other organs of the patient, must be the ideal remedy.

If, as has been stated above, a considerable proportion of cases of phthisis belong to the alkaline temperament, then a remedy of an acid reaction would appear to be especially indicated.

My own experience, which has been large, leads me to believe that a solution of the halogen group of salts with the hypochlorite of sodium is the best remedy with which I am acquainted, to modify and perhaps cure pulmonary tuberculosis. This remedy acidifies the blood when saturated with it, and almost immediately relieves the extreme anæmia, loss of appetite and of strength, and night sweats, which form such distressing symptoms. The cough, which is almost always present and sometimes distressing and even terrible, can easily be relieved by giving a mixture of iodide of potassium with a little sulphate of morphine and a syrup as a vehicle. An elegant preparation can be made by properly combining these drugs.

For the hectic fever, nothing is better than a capsule containing four grains of sulphate of quinine and one-fiftieth of a grain of sulphate of strychnine, once or twice daily. Whiskey and brandy may be given when indicated, but never wines or malt liquors.

Diet should receive especial attention, and nutritive and easily assimilated articles of food should be selected and the patient particularly instructed in their use. Rest should be enjoined as complete as the case will permit. Nature has given us a powerful aid in balmy sleep.

It is not necessary in my judgment to isolate cases of consumption, for, as far as I have seen, patients suffering with this complaint are quite amenable to reason, and will, if properly instructed, exercise care and caution in the matter of sputum and excreta from themselves. All of the patients whom I have treated have gone to their own homes, and, as far as I have been able to discover, none of them has communicated the disease to those immediately about him, and the treatment has continued over a considerable period of time.

The ideal treatment of pulmonary phthisis would be the above carried out in a hospital or sanatorium especially erected for this line of work. Such a hospital should be built in a manner which will make antisepsis practical in every way. The rooms should be small, finished in hard or painted wood, with hard-finished ceilings and walls, and hardwood floors. Iron bedsteads, a washbowl containing hot and cold running water, and a small bureau and chairs would complete the furniture equipment. The rooms should be lighted by electricity and heated by steam, so that an equable temperature could be maintained throughout the year. A solarium should be provided in the upper part, with white and colored glass, where patients in bad weather can sit, and sheltered walks should be provided where proper exercise can be had. Whatever treatment is adopted must be persisted in faithfully and thoroughly by both patient and physician, and for long periods of time; and with such an equipped place and honest treatment I believe that a considerable percentage of cases of phthisis can be cured and many others greatly relieved.

747 Madison Avenue.

MENTAL EVOLUTION IN MAN.[1]

By R. M. Bucke, M.D.,

Medical Superintendent of the Insane Asylum, London, Ontario, Canada.

About sixty years ago now, in the time of the Millerite excitement, a man who believed that the world was about to end expressed his fears to Emerson, who replied that it was really a matter of little consequence, "for," said he, "we can do very well without it." There are wise men who teach that each man creates the world he lives in, and as he gives it its substance so also does he give it its quality, insomuch that it is good or bad as he is good or bad. Be this as it may, it is certain that each one of us is of more consequence to himself than is all the outside world, be it shadowy or be it solid; be it created by each inhabitant or be it independent and self-existent. Not only so, but the essential part of each man is what we call his mind, in comparison to which the body is an insignificant factor.

The Study of Psychology.—This being granted, it would seem to follow that psychology ought to be the most interesting of all the sciences, and as a matter of fact it undoubtedly is so, though it has been greatly discredited by the imperfection of the method by which it has until very lately been studied. That imperfection is so great that it would hardly be an exaggeration to assert that nearly all the study and thought expended upon it down to the beginning of our own age has been fruitless and as good as wasted, except inasmuch as it has at last made clear the impassability of the route men have sought to follow, the route, namely, of introspection. For we might as well study the human body alone without reference to that of any other creature, and attempt in that way to decipher its genesis, development, and meaning, as to attempt to comprehend a single human mind without including in our examination not only other human

[1] An address delivered at the opening of the section of psychology, at the annual meeting of the British Medical Association at Montreal, September 1, 1897.

minds in all stages of evolution, but equally all other minds to which our own is related—that is to say, all minds other than human belonging to our kinsfolk the animals, minds which stand to-day like mileposts along the almost infinite length of the path which our mind has followed in its upward march across the immensities and eternities from its remote infancy to the present hour; minds which in a thousand faculties represent to us everywhere, in infinite sameness and variety, replicas of our own or of parts of our own, showing us, as the poet says, tokens of ourselves which we "negligently dropped as we passed that way huge times ago."

Comparative Psychology.—As man's bodily life rests upon and grows from that of countless prehuman ancestors; as man includes in his structure the heart of the reptile, the gills of the fish, as well as the forms in outline of innumerable still lower races, so is his so-called human mind rooted in the senses and instincts of all his ancestral species; and not only so, but these senses and instincts still live in him, making up, indeed, far the larger part of his current every-day life; while his higher psychical life is merely the outgrowth and flower of them.

As truly as the plant is an embodiment of inorganic matter vivified by the transmuted forces which in the non-vital world about us we call light and heat, so truly is man's mind the outcome of—the expansion and culmination of—the imperfect sensation of the worm, the rudimentary sight, hearing, and taste of the fish and reptile; and the simple consciousness which, springing from these, passed to us after almost infinite ages of slow evolution and amelioration through tens of thousands of generations of placental mammals our immediate progenitors.

In the growth of mind, whether that of the race or of an individual, we recognize two distinct processes: First, the very gradual evolution to, or toward, perfection of faculties that have already come into existence; and, secondly, the springing into existence (as new branches start from a growing tree) of faculties which had previously no existence. For it is clear to the least thoughtful student that no faculty (as no organ) came into mature and perfect life at once. Hearing and sight, we are told, developed by slow degrees from the sense of touch; and in the region of the intellect conceptual life was born from ages of receptual, and that from millenniums of perceptual.

Mental Growth in the Individual and in the Race.—Let us now suppose mind growing for millions of years in the way set forth. It begins, we will say, as mere excitability; to that after a long time is added what may be called discrimination, or choice and rejection of, for instance, different kinds of food. After another long interval of almost infinitely slow advance sensation appears, and with it the capacity of pleasure and of pain; then, later still, memory; by and by recognition of offspring; and successively thereafter arise reason, recognition of individuals, and communication of ideas. Concurrently with these intellectual faculties certain moral functions such as fear, surprise, jealousy, anger, affection, play, sympathy, emulation, pride, resentment, grief, hate, revenge, shame, remorse, and a sense of the ludicrous have also arisen in the nascent mind. We have reached now the mental plane of the higher animals, which is equally that of the human being at about two years of age. Then occurs in the child the mental expansion which separates man from the higher mammals—for something like a year the child mind steadily grows from the status of the latter to the status of the human mind. This year in the individual, during which it walks erect, but possesses a receptual intelligence only, not having yet the power of forming either concepts or true words, represents in the race the age of the *alalus homo*, the period of perhaps a hundred thousand years, during which our ancestors walked erect, but, not having self-consciousness, had no true language. At the average age of three years in the individual self-consciousness is born, and the infant, from the point of view of psychology, has become a human being. But we all know that after the attainment of the distinctively human faculty, self-consciousness, the child has still much to acquire, both in the way of the expansion of already possessed faculties and in the acquisition of new ones, before it is mentally a mature man. Of the numerous faculties which it still has to acquire I shall mention only here the color sense, the sense of fragrance, the human moral nature, and the musical sense. A consideration of these four and of self-consciousness will occupy the short time allotted me to-day.

And first a word as to that basic and master human faculty, self-consciousness. It occurs, as said, at about the average age of three years, but when it first made its appearance in the race it must have done so at full maturity; perhaps at the age of twenty, both life and childhood being shorter at that time than they are to-day. You will see at once why I say self-consciousness must have occurred at first at maturity. Its acquisition at a given epoch supposed a higher mental life than had hitherto existed—such higher life on the part of the race could not have come to the individual before his maturity. To suppose that it would be (if you will think of it) a contradiction in terms. The human mind attains it high-water mark at maturity (that is what the word means), and one generation could not reach before maturity what the preceding generation had not reached at all. Well, but self-consciousness occurs to-day at three years of age, and we reach full mental maturity (on the average) only at the age of thirty-five. The advance then made by the individual from the age of three to that of thirty-five represents the advance of the race between the date of the appearance of self-consciousness and to-day, the mental status of the three-year-old child to-day being the mental status of the adult when self-consciousness first appeared. How long has it taken the human mind to grow from mere self-consciousness to its present stature? Not less certainly than several hundred thousand years. Whatever the time required is the time during which man has inhabited the earth.

Of all the mental faculties below self-consciousness each one has its own time for appearing in the human infant—as, for instance, memory and simple consciousness appear within a few days after birth, curiosity ten weeks after, use of tools twelve months after, shame, remorse, and a sense of the ludicrous—all of them about fifteen months after birth. Now it is to be noted that in every instance the time of the appearance of a faculty in the infant corresponds with the stage at which the same faculty appears (as far as can be at present ascertained) in the ascending animal scale; for instance, memory and simple consciousness occur in animals as primitive as the echinodermata, while the use of tools is not met with below monkeys, and shame, remorse, and a sense of the ludicrous are almost, if not entirely, confined (among animals) to the anthropoid ape and the dog.

To turn now to the true subject of this paper, I want to say in the first place that as in prehuman so in human psychology each superadded faculty was acquired in its own time in the history of the race, and that that historic period corresponds with the time in the life of the individual into whom the faculty is born to-day. For instance, self-consciousness appears in the individual at the age of about three years—it appeared in the race several hundred thousand years ago. It has been proved by Geiger and others that our color

sense has been acquired by the race not more than about thirty thousand years ago. Well, it is acquired by the individual at the age of about five or six. It is thought that the sense of fragrance was acquired by the race later than the color sense; it is also acquired later by the individual. Some considerable study of history has led me to the conclusion that our human moral nature cannot be more than ten thousand years old. For a careful consideration of the records that have come down to us from the early Romans, Hellenes, Hebrews, Egyptians, Assyrians, and Babylonians, would indicate, I think unmistakably, that, as we go back into the past, this faculty tapers down toward the vanishing-point, and that if it continues so to taper as we ascend the ages all of what we distinctively call our human moral nature would certainly have disappeared by the time we had gone back the number of centuries mentioned—that is ten thousand years.

Well, to-day the human moral nature in the individual, instead of being born at the age of three years as is self-consciousness, or at five or six as is the color sense, does not come into existence before the average age of about fifteen years. As to the musical sense, it is almost certainly less than five thousand years old in the race, and, when it occurs at all, is not usually born in the individual before adolescence.

There are three other laws, each well worthy of notice, which govern the acquisition of new faculties by any given race. They are as follows:

1. The longer a race has been in possession of a given faculty, the more universal will that faculty be in the race. This proposition scarcely needs proof—every new faculty must occur first of all in one individual, and as other individuals attain to the status of that one they too will acquire it, until after perhaps many thousands of years, the whole race having attained to that status, the faculty shall become universal.

2. The longer a race has been in possession of a given faculty, the more firmly is that faculty fixed in each individual of the race who possesses it. In other words: the more recent is any given faculty, the more easily is it lost. High authority, such as that of Charles Darwin, could be quoted in support of this proposition; but it scarcely seems to be required; it is almost, if not quite, a self-evident proposition.

3. A study of dreaming seems to reveal the fact that in sleep such mind as we have differs from our waking mind, especially by being more primitive; that, in fact, it would be almost strictly true to say that in dreams we pass backward into a prehuman mental life; that the intellectual faculties which we possess in dreams are, especially, recepts as distinguished from our waking concepts; while in the moral realm they are those faculties such as remorse, shame, surprise, along with the older and more basic sense functions, which belonged to us before we reached the human plane; and that the more modern mental faculties, such as color sense, musical sense, self-consciousness, the human moral nature, have no existence in this condition, or if any of them do occur it is only as a rare exception.

Let us now compare, one with the other, a few of the faculties which have been already mentioned in the light of the rules laid down. To do this will give us, more clearly than perhaps anything else could, a definite notion of the growth of mind by the successive addition of new functions. For this purpose we will take simple consciousness, shame, self-consciousness, color sense, the human moral nature, and the musical sense.

Simple Consciousness.—Simple consciousness makes its appearance in the human infant at the age of a few days; it is absolutely universal in the human race; it dates back certainly to the earliest mammals, and probably much earlier; it is lost only in deep sleep and coma; it is present in all dreams.

Shame.—Shame is said to be born in the human infant at the age of fifteen months; it is a prehuman faculty, being found in the dog and in apes, and undoubtedly existed in our prehuman ancestry; it is almost universal in the race, being absent only in the lowest idiots; it is very common in dreams.

Self-Consciousness.—Self-consciousness makes its appearance in the child at the average age of three years; it is not present in any species but the human; it is, in fact, that faculty the possession of which by an individual constitutes him a man. It is not universal in our race, being absent in all true idiots; that is, it is permanently absent in about one in each thousand human beings born into the world. In our ancestry it dates back to the first true man; a race, we are told, unclothed, walking erect, gregarious, without a true language, to a limited extent tool using, destitute of marriage, government, or of any institution, animal, but in virtue of its highly developed receptual intelligence king of animals, which developed self-consciousness, and by that fact became man. It is impossible to say how long ago it was when this event occurred, but it could not have been less than several hundred thousand years. This faculty is lost much more easily and frequently than is simple consciousness. We lose it in coma and also often in the delirium of fever; in certain forms of insanity, as in mania, it is often lost for weeks, even months at a time; and lastly, it is never present in dreams.

Color Sense.—I have elsewhere written at large on the color sense, and have only space here to give the facts which bear on the present inquiry. That these are facts the argument referred to I think demonstrates. This faculty appears in the individual at the average age of about five years. It is absent in one adult human being out of every forty-seven; it appeared in our ancestors, as Geiger has shown from linguistic paleonotology, in the Aryan period, probably less than thirty thousand years ago. It is seldom present in dreams, and when it does occur—that is, when any color is seen in a dream—it is generally that color which for good reasons was first perceived by man, namely, red.

The following occurrence illustrates (I think in a striking manner) the usual absence of the color sense during the partial consciousness which occurs in sleep. A man whose hair is white dreamed that he was looking in a glass and saw plainly that his hair was not only much thicker than he knew it to be in fact, but instead of being white, as he also knew it to be, it was black. Now, he well remembered in his dream that his hair had never been black. It had, in fact, been a light brown. He wondered (it is worth mentioning here that wonder or surprise is a prehuman faculty, and is common in dreams) in his dream that his hair should be black, remembering distinctly that it had never been so. (I may say here that memory is a prehuman faculty, and is common in dreams.) The important thing to note about the dream under consideration is that, though it was clear to the dreamer's mind that his hair had never been black, yet he did not remember that it had been brown. For some reason (and I think the reason is quite clear) there was a difficulty in calling up before consciousness any color.

Moral Nature.—The human moral nature belongs to a much later stage of evolution than any of the faculties so far considered. It does not make its appearance in the individual before the average age of fifteen years. It is congenitally and permanently absent in at least forty human beings out of every thousand. It would seem clear, as stated already, from a consideration of our historic ancestors, from the fact

that this faculty rapidly fades out as we ascend into the past, that it cannot have existed in the race more than ten thousand years at the most. It is far more unstable in the individual than are older faculties, such as self-consciousness. It is never present in dreams.

Musical Sense.—Finally, the musical sense (a faculty which is now in act of being born into the race) does not appear in the individual before the average age of about twenty years. It does not exist in more than half the members of the race. It has existed less (perhaps considerably less) than five thousand years in the race. It is never, or almost never, present in dreams, even in the case of professional musicians.

The Scheme of Mental Evolution.—You see now clearly the scheme upon which I suppose the mind (as far as we have got) to have been built. I say advisedly "as far as we have got," because, if the mind has grown in the way set forth, it is still growing and is not built but is in the act of building. No man can ever say positively that his theory (of any fact) is the true one, but I am prepared to say of the above hypothesis that, if it be accepted, it will enable us to understand something of the phenomena of mind as we observe it, whereas if we should prefer to hold, as many do, that the human mind was created independently of any that preceded it by a fiat and *per saltum*, then I say deliberately that there is and can be no such thing as a science of psychology, and that every attempt to investigate or explain, to comprehend or divine the *rationale* of the facts observed as to its origin and growth in the individual must remain forever futile. And if I could find the right words, I would bring home to each one who hears me the inextinguishable conviction that, in this idea of evolution, lie enfolded the mystery of the past, the explanation of the present, and the sure prescience of the future—what we were, what we are, and what we shall be.

The Atavistic Theory of Idiocy and Insanity.—In conclusion, I desire to refer briefly to two corollories which flow from this hypothesis. The first is that if it is correct then all forms of insanity, including all forms of idiocy, are nothing more nor less than cases of atavism. In this view insanity is due to congenital absence or imperfection (leading to breakdown) of some faculty or faculties, such absence or imperfection being due to more or less complete reversion to an ancestral type. In my opinion, this view explains insanity and its numerous forms more completely than these can be explained from any other point of view, and is therefore of great value to the thoughtful student of these phenomena. Upon this view, the comparatively recent origin and rapid evolution of the human mind, and especially the rapid mental evolution of the so-called Aryan peoples in the last four or five thousand years, is almost solely responsible for the large number of cases of insanity in the modern civilized world, since the stability of any form, function, or faculty in any race is dependent upon the time it has existed in that race, and therefore the more recent a faculty is in a race the more frequently will it be found absent, defective, or unstable in the individuals of the race.

Future Development of Mind.—The second corollary, which is even more important than the first, is that, upon the view here set forth, the human mind at present is not formed, but forming; is not completed, but in process of construction. By slow and dubious steps taken in darkness our remote ancestors wearily climbed to simple consciousness. After another immense interval they reached self-consciousness. But that cannot be the end—the cosmic process cannot stop there—cannot, indeed, stop anywhere. Evolution, as far as we can see, has always gone on, is going on to-day, and will always go on. Our old mental faculties are some of them fading out, others advancing toward greater perfection, and alongside of them new ones are springing up, some of which will, without doubt, be of overshadowing importance in the future.

So-called telepathy and clairvoyance seem to be specimens of such nascent faculties. I place in the same class the phenomena of what is often named spiritualism. The labors of the Society for Psychical Research have made it to me plain that these phenomena, as notably in the case of W. Stainton Moses, really exist. And I think that a study of the above-mentioned case, together with that of Mrs. Piper and that of Mary J. Fancher, of Brooklyn, would compel any unprejudiced person to make the same admission. But to me these are not cases in which outside agents are acting on or through a human being, but are cases in which a given human being has faculties which are not commonly possessed. Whether any given faculty, such as one of those now alluded to, shall grow, become common, and finally universal in the race, or wither and disappear, will depend upon the general laws of natural selection, and upon whether the possession of the nascent faculty is advantageous or not to the individual and to the race.

But of infinitely more importance than telepathy and so-called spiritualism (no matter what explanation we give of these, or what their future is destined to be) is the final fact to be here touched upon. This is that superimposed upon self-consciousness, as is that faculty upon simple consciousness, a third and higher form of consciousness is at present making its appearance in our race. This higher form of consciousness when it appears occurs, as it must, at the full maturity of the individual, at about the age of thirty-five, but almost always between the ages of thirty and forty. There have been occasional cases of it for the last two thousand years, and it is becoming more and more common. In fact, in all respects, as far as observed, it obeys the laws to which every nascent faculty is subject. Many more or less perfect examples of this new faculty exist in the world to-day, and it has been my privilege to know personally, and to have had the opportunity of studying, several men and women who have possessed it. In the course of a few more millenniums there should be born from the present human race a higher type of man possessing this higher consciousness. This new race, as it may well be called, would occupy, as toward us, a position such as that occupied by us toward the simple conscious *alalus homo*. The advent of this higher, better, and happier race would amply justify the long agony of its birth through the countless ages of our past. And it is the first article of my belief, some of the grounds of which I have endeavored to lay before you, that a race is in course of evolution.

Treatment of Ulcers by Oxygen Gas.—Possibly the oxygen acts in one or more of the following ways: 1, Diminution of irritation—any dressing applied to an open sore causes more irritation than a mixture of oxygen and pure air; 2, direct stimulation without irritation; 3, the oxygen may oxidize the toxins produced by micro-organisms in the surface of the ulcer—this may apply more especially to the toxins produced by bacilli when present; and 4, as stated by Mr. Stoker, the oxygen has possibly a selective power in its action on micro-organisms present in the ulcer, encouraging staphylococci, which then outgrow the bacilli. Some of the foregoing points are at present under investigation. Here, as yet, we have only the practical results of a few cases to go by, all of which are in favor of the oxygen treatment.—Dr. David Semple, *London Lancet*, May 29th.

ON LITHOTRITY AS THE BEST METHOD OF TREATING LARGE VESICAL CALCULI.[1]

BY HERBERT MILTON, M.R.C.S.,

[illegible]

I HAVE the honor to lay before you a collection of 100 large stones taken from among the 550 cases of vesical calculi that I have had occasion to treat in Egypt since 1892. Of these stones the smallest weighs 50 grams, the largest 995. Of the subjects, 82 were operated on by lithotrity, with 6 deaths; 13 by suprapubic lithotomy, with 4 deaths; 4 by abdominal section, with 3 deaths; and 1 case, in which the stone was half in the ureter and half in the bladder, required a special operation. In the greater number of cases no selection was made with regard to operation; at first, before I had acquired complete confidence in lithotrity, I submitted all large stones to suprapubic lithotomy or to laparotomy; but I have for the last four years practically abandoned in the treatment of large stones all operations except lithotrity. I still, however, practise suprapubic lithotomy for small stones and in young subjects. Under these conditions I have operated some thirty times, with immediate complete suture of the bladder, without losing a patient. My experience with laparotomy has been disastrous. My only successful case was the first one performed, and I was able to remove a stone weighing 995 grams, the largest stone which has ever been successfully removed. The other three cases were all fatal.

The 82 cases treated by lithotrity may be divided into two categories—those in which I have performed the classical operation of Bigelow, and those in which I have introduced a lithoclast through a perineal incision.

Bigelow's operation was performed in 47 cases, with 3 deaths. Of the stones removed in these 47 cases, 37 weighed between 50 and 99 grams, with 1 death; 5 weighed between 100 and 199 grams, with 1 death; 1 weighed 204 grams, another 209, another 240, another 343, and the largest of all 452 grams, or over 16 ounces. Of these 5 cases of very large stones treated by Bigelow's operation, 1 only was fatal, the one in which the stone weighed 240 grams. I think I am justified in saying that no other method has ever given such favorable results. It must be admitted, however, that the operation in such cases is not easy, and I would recommend its practice only to those who have already some experience of litholapaxy. The principal difficulties are:

1. From the great force necessary to crush large and hard stones. This great force may, however, be safely and certainly applied if specially strong instruments are used.

2. From the contraction of the walls of the bladder on the stone, preventing the introduction of the lithotrite and the seizure of the calculus. This contraction is best corrected by the application of hydrostatic pressure, produced by a column of water and continued during three, four, or five minutes.

3. From the length of time necessary for the complete extraction of the *débris*. In some of my operations this has extended to two and one-half hours or even more, and during this long period it was necessary to keep up the strength not only of the patient but of the operator also.

Perineal lithotrity was performed in 35 cases, with 3 deaths. Of the stones removed 18 weighed between 50 and 99 grams, with 1 death; 15 between 100 and 199, with 1 death; 1 weighed 209 grams, and 1 weighed 387. Of these 2 cases, the latter was fatal.

Perineal lithotrity is much easier of performance for large stones than Bigelow's operation, and the results are so favorable that I can strongly recommend it to every surgeon. But its mortality has been greater in my hands than that of Bigelow's operation. I have been troubled with consecutive urinary fistulæ in two of my cases, and the operation entails a much longer convalescence. I therefore am gradually abandoning this operation, performing it only in a few special cases and for demonstration to the students.

The operation invented by Bigelow and named by him litholapaxy is gaining in favor day by day; the limits of its application are removed one by one. Neither extreme youth nor extreme old age need any longer be taken into consideration; the diseased condition of the bladder and of other organs are no longer a contraindication; and I trust that in the immediate future the limitations due to the size and hardness of the stone will entirely disappear.

[1] Paper read before the International Medical Congress, at Moscow, [illegible]

Progress of Medical Science.

Nervous Cough.—Koch reached the following conclusions: 1. The existence of a true nervous cough cannot be denied. 2. This cough, emanating from a nerve centre, may be diagnosed as such when abdominal and thoracic organs are intact, when one can exclude hysteria, whooping-cough, and beginning phthisis. 3. The monotonous, involuntary cough, always the same in each patient, forms the principal symptom in this affliction. 4. Medication fails. The cough ceases spontaneously after a sea voyage or a trip to the mountains.

Clinical Relations of Auto-Intoxication.—In the course of a recent discussion on auto-intoxication, by members of the Chicago Academy of Medicine, a report of which has appeared in the *Journal of the American Medical Association*, Dr. V. F. Waugh said that the clinical field of auto-intoxication has been gradually widening until about a year ago it was claimed in an editorial in *The London Lancet* that not only is the materies morbi of such diseases of the alimentary tract as cholera, typhoid fever, and all affections characterized by fetor of the stools, generated in the intestinal canal, but also of rheumatism, epilepsy, uræmia, headache, diabetes, chorea, skin diseases, and many of the chronic diseases of the brain and spinal cord. There is one phase of the question, he said, to which very little attention has been paid, though it is rather an important one, and that is the part played by auto-intoxication in fevers. "We know that in all fevers the secretion of the bile is interfered with; it is greatly lessened. We know that the bile is the natural antiseptic of the system; consequently it stands to reason that in all fevers on account of the lack of bile and the increased temperature we have an increased tendency to decomposition of the contents of the alimentary canal. There is in fever, then, necessarily a certain amount of auto-intoxication, and the symptoms of auto-intoxication are added to those which are due to the fever proper. By a system of efficient intestinal antisepsis these can be separated, and when the effects of auto-intoxication have thus been eliminated we find that the severity and the danger of the attack have been materially lessened. It is a question, of course, whether it is better practice to stimulate the liver, already suffering from the fever in such cases, or whether antisepsis should be secured by the use of antiseptic drugs."

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ORRHOTHERAPY IN ULCERATIVE ENDOCARDITIS.

WHILE recovery from so-called ulcerative or malignant endocarditis is difficult of demonstration, it would be unreasonable to contend that the disease is invariably fatal. On the other hand, in cases in which recovery ensues some doubt might justly remain as to the accuracy of the diagnosis. The knowledge that the lesions present in the cases under consideration are often dependent upon the activity of streptococci and staphylococci, would amply justify the employment of an antitoxic serum when the diagnosis may be ventured. The report of a case of probable ulcerative endocarditis in which successful results attended the use of antistreptococcic serum is therefore not without interest.

The case occurred under the care of Dr. Margaret Dunn, at the Canning Town Medical Mission Hospital, and is reported in *The Lancet* of July 10, 1897. The patient was a girl, sixteen years old, who complained of having had a "cold" for three weeks, with tightness in breathing. There was marked dyspnœa, pulse and respiration were accelerated, and the temperature was 101° F. Cardiac action was rapid and exaggerated, and a loud mitral systolic murmur could be heard, together with a faint diastolic murmur at the aortic area. Under treatment with salicylates no improvement took place. Upon inquiry it was learned that the symptoms had been present about a month. In the course of several weeks aching pains appeared in the left shoulder, together with palpitation of the heart and shortness of breath. There was no previous history of rheumatism, and there had been no rheumatic manifestations beyond a transient erythema the year before.

The patient did not appear very ill, but was bright and lively. There was considerable dyspnœa, but the girl was able to lie down. She complained of palpitation and of slight pain in the left shoulder. There was considerable perspiration without acid odor. Neither rash nor nodules nor anæmia was present. The apex beat of the heart was seen and felt in the fifth left interspace, three inches from midsternum. The area of cardiac percussion dulness was increased to the right. The sounds were muffled at the apex, but a mitral systolic murmur was distinguishable, as well as an aortic diastolic murmur and some pericardial friction sounds. At the base of the right lung dulness on percussion and diminished breath sounds indicated a small effusion.

For a week the patient showed signs of marked general improvement. The dyspnœa lessened, the slight joint pains disappeared, and the temperature gradually fell almost to normal. The physical signs, however, persisted and indicated increase in the pericardial effusion. An aortic systolic murmur became audible, in addition to the mitral systolic and the aortic diastolic. The edge of the spleen was indefinitely felt below the costal margin. During the following week the condition of the patient remained pretty much the same, the temperature rising, however, to 102° F. in the evening. An erythematous rash appeared, which spread by degrees over the limbs and face, disappearing after three days. The amount of fluid in the pericardium and at the right base diminished slightly in amount. The urine was normal throughout. In the next week the temperature remained elevated and the pulse became accelerated. The patient now complained of tenderness on palpation of the spleen, and the physical signs indicated a slight increase in the pericardial effusion.

Treatment with salicylates having been unattended with satisfactory results and the increasing severity of the symptoms suggesting the probability of the endocarditis having assumed a malignant character, it was decided to try the effect of treatment with antistreptococcic serum. Accordingly seven injections were made beneath the skin of the abdomen during a period of two weeks, at intervals of a day or two, in amounts varying from two and one-half to twenty cubic centimetres. During this period sharp pains and friction sounds appeared in the left axilla, and a transitory presystolic murmur became audible. Ultimately, however, the temperature declined, improvement took place in the physical signs, and the case proceeded to complete recovery.

The diagnosis of ulcerative endocarditis was based upon the seriousness of the patient's condition, the hectic type of the temperature and its persistent elevation in the absence of fresh rheumatic manifestations or increase of those present, the appearance and disappearance of the heart murmurs, and the increase in the size of the spleen. Unfortunately bacteriological examination of the blood was not undertaken until after treatment with the antistreptococcic serum had been instituted, and then no micro-organisms were found. The possibility of typhoid fever was excluded by the absence of characteristic symptoms excepting high temperature and increase in the size of the spleen. Acute tuberculosis was less closely simulated, and the outcome of the case apparently decided against this possibility, even had there been any doubt

Camden Medico-Surgical Society.—At a stated meeting of this society, held on September 6th, Dr. H. F. Sherk read a paper on the discovery of ether as an anæsthetic.

THE CACHEXIA OF CANCER.

Cancer in Great Britain is increasing at a most alarming rate. The proportional mortality is more than four times greater than it was a century ago; as a consequence, attention is attracted to every phase of the disease. Much still remains to be discovered, although recent progress has completely revolutionized our knowledge on the subject. Concerning the cachexia of cancer, Mr. W. Roger Williams, writing in the *Edinburgh Medical Journal* for June, 1897, says that "after a cancerous growth has existed for a variable time, which is generally rather long, the patient's health begins to suffer, even in the absence of ulceration, hemorrhage, etc. Pallor, weakness, emaciation, and loss of appetite are among the most obvious manifestations. These, as the disease progresses, become greatly aggravated, the pallor taking on a peculiar earthy or straw-colored tint; while other indications of profound disturbance of the general nutrition arise, which, when the malady runs its natural course, eventually determine death from asthenia. This condition is the cancerous cachexia. It is noteworthy that cachectic symptoms never precede the outbreak of the primary disease; from this we may infer that they are a consequence of its local progress. We may, I think, best interpret these symptoms as the result of a general toxæmia." Mr. Williams then traces the disease through its various stages, terminating in asthenia, and states that out of ninety uterine cancer cases that ran their natural course under his observation, sixty-four thus ended; and in twenty-four out of forty cases of breast cancer the final results were similar. These conclusions as to the existence of a special cancerous cachexia are not in accordance with the views held by many observers of the disease. The condition described above is attributed by them rather to ulceration of the growths and subsequent absorption of the septic products, or to repeated hemorrhages.

MUNICIPAL WATER SUPPLY.

Water is a question of perennial interest. Voluminous of late has been the literature concerning the necessity of an adequate and unpolluted supply of water, and it may appear to some that the subject is in danger of being overwritten, but it is a matter that will bear much discussion. The truth cannot be too strongly impressed upon the public that, taken all round, the supply of pure, unadulterated water for municipal purposes is defective, and that the large cities of Europe are far in advance of this country in this respect. Prof. W. T. Mason, in a lecture delivered before the Franklin Institute in March last, says: "The day is past when we could feel a sense of superiority over the crowded millions of the old world, because of the relative magnitude and consequent initial purity of the sources of our water supplies. Europe has of late years expended much labor and capital in substantial plants that make for sanitary betterments, while we have continued upon a conservative course, forgetful that our populations and industries have been growing, and that the river our fathers drank from with pleasure and safety has become charged with the refuse of up-stream communities, and converted into what may be properly styled the county sewer."

The most radical difference between the European and the American systems is that in this country the water is delivered raw, while in many places in Europe it is carefully filtered. Hence it stands to reason that the greatest possible attention should be paid to the storage of the water, as regards both the reservoirs and house tanks. Unfortunately it is to be feared that this is not always the case. In New York City a recent examination of the water tanks in the tenement-houses has shown them in many instances to be in a most filthy condition, most of them apparently not having been cleaned since they were first erected. There are many otherwise good citizens who are averse to changing the present order of things and introducing extensive improvements, on account of the cost. Professor Mason says in regard to this matter: "There is, believe me, no system of filtration or other efficient method for purifying a polluted water so expensive but that a community can well afford to introduce it rather than to drink a dangerous water in its raw state; and this, too, from purely economic considerations, and leaving out of sight all ethical questions whatsoever."

ENGLISH CONTRACT DOCTORS IN THIS COUNTRY.

The Lancet of July 24th publishes a very voluminous letter from an English medical man who is practising in Lower California. This gentleman bitterly bewails his fate, and strongly warns practitioners in England who may be thinking of emigrating either to this country or Mexico, to take warning by his unfortunate experiences, and to ponder seriously ere they leave their native soil. Some of the advice given in this letter is certainly judicious and to the point. Dr. Millican says: "First, let intending emigrant doctors be sure that what appears to them a large salary at home is of the same relative value in the country whither they propose to go. Secondly, have everything reduced to writing in such form as to be cognizable by the courts of both countries. Thirdly, if it be the United States, have an agreement signed in England before starting, and embodying a clause to the effect that a new agreement embracing the same terms shall be executed in America on landing. Fourthly, insist that the facts upon which any promised advantages are based shall also be reduced to writing. Fifthly, do not take any 'collateral advantages' as part remuneration. Get money value for your services, and pay cash for your collateral advantages when you have found out what they are worth. Lastly, insist upon a clause securing your return passage in any case."

Unfortunately for Dr. Millican, through ignorance he did not protect himself by acting up to any of these clauses. He has learned wisdom by bitter experience,

and according to the tale he unfolds in *The Lancet*, luck has been decidedly against him. As a matter of fact, here in this country there is little scope or chance of success for foreign physicians. America can easily supply her needs in that respect with the home-made article.

OUR CABLED REPORT FROM MOSCOW.

It is with no small feeling of satisfaction that we refer our many readers to the comparative fulness and accuracy of our cabled report of the recent meeting of the International Medical Congress at Moscow. Although occupying no more space in the MEDICAL RECORD than the reports of other meetings within easy reach of home, the degree of trouble and amount of expense in securing the one in question can hardly be appreciated by the subscriber who is being educated to believe that everything is possible with his favorite journal. The latter estimate of resources applies with particular directness to the MEDICAL RECORD, as it is the only journal of any kind in America that has gone to the expense of securing promptly and accurately a cabled report of the Moscow meeting. It is in keeping with this spirit that we strive to be on the alert for anything and everything that may keep our readers fully abreast of the times.

News of the Week.

Philadelphia County Medical Society. — At a stated meeting of this society, held on September 8, 1897, Dr. Joseph Price exhibited a large number of varied and interesting specimens removed by abdominal section; among them, the cæcum and four inches each of ileum and colon, removed on account of malignant disease; a portion of ileum removed on account of perforation, possibly typhoid; and also a number of extra-uterine gestation products. He pointed out that in his experience rupture of ectopic gestation cysts occurs with much greater frequency during the summer months than during any other period of the year, and that ectopic pregnancy occurs with noteworthy frequency in women in whom lactation is prolonged, either for the purpose of averting pregnancy or from other cause. It seemed to be the consensus of opinion that when removed neoplasms, diagnosed as malignant, failed to recur, there had been an error in diagnosis.

Pathological Society of Philadelphia. — At a stated meeting of this society, held on September 9, 1897, Dr. A. Ferree Witmer exhibited a specimen of endothelioma of the spinal dura, and related the history of a case. Dr. A. A. Eshner exhibited specimens from a case of uræmia, including large, white, fatty kidneys and broncho-pneumonia, with little if any hypertrophy of the heart. A noteworthy feature of the case was the temperature, which ranged between 103 and 104° F., illustrating the fact that uræmia is not necessarily attended with normal or subnormal temperature.

A Gift to the Charity Hospital in New Orleans. —Mrs. D. A. Milliken, widow of the late Richard Milliken, of New Orleans, has announced her purpose to erect and endow a large hospital for children, to be an annex to the New Orleans Charity Hospital. The hospital is to be a memorial to her husband.

St. John's Guild Floating Hospital.—The statistics for the past summer of the Floating and Seaside hospitals of St. John's Guild, show that on the Floating Hospital 43,468 women and children were cared for and 8,011 salt-water baths were given; and that at the Seaside Hospital, at New Dorp, Staten Island, 1,556 children were received and 14,151 hospital days of treatment were given. Many times during the season more sick persons were at the wharf waiting to be taken aboard the Floating Hospital than there were accommodations for, and the managers of this beneficent charity will therefore provide a second floating hospital for next summer

An International Epidemiological Bureau.—The editor of *Janus*, a review published in Amsterdam, desires to establish an international system of reporting epidemiological data, and thus to give warning of epidemic storms in somewhat the same way that atmospheric disturbances are now heralded, so that precautionary measures may be taken. As soon as arrangements can be made, it is purposed to publish a bi-monthly record of the progress of epidemiology, which shall include: (1) Current statistics of the morbidity and mortality from epidemic diseases—contagious, miasmatic, and miasmatic-contagious—from states, provinces, and cities for which such data are available, accompanied when possible by the meteorology; (2) original observations on epidemic diseases; (3) historical records of epidemics in particular countries and cities, and their periods of prevalence and quiescence; (4) special communications on subjects of epidemiological interest.

The Losses of Spain in Cuba. — Dr. de Larra y Cerezo publishes, in *La Medicina Militar Española*, some statistics of the morbidity and mortality among the troops of the invading army in Cuba. During the month of May there were 38,692 admissions to the general hospitals; of these 523 died, and 33,739 were discharged. In the yellow-fever hospitals the admissions for the same time were 814, of whom 226 died and 406 were discharged. In the general hospitals in Havana there were, on the 1st of June, 4,709; there were admitted during the month, 9,931; discharged, 8,798; died, 270; and there remained in hospital, 5,512, on July 1st. Of yellow fever the statistics are: Patients in hospital on June 1st, 213; admitted during the month, 677; died, 170; and remaining in hospital, 331.

The Light of Teutonic Science Deflected from America.—The German universities have had new regulations made for them by the various state governments, under which many American medical students will be excluded from the clinics. The Berlin physicians, however, are not yet satisfied, and, it is

said, have petitioned the government to draw the lines still closer, so as not to admit students from American medical colleges or universities, unless they pass a preliminary examination.

A Congress Memorial in Moscow. — It has been proposed by a number of wealthy citizens in Moscow to endow an infirmary for epileptics and the weak-minded of both sexes, to commemorate the congress.

Obituary Notes.—Dr. Caleb Lyon, of Rossville, Staten Island, died at his home, on September 11th, of heart and kidney trouble. He was born in this city, fifty-five years ago, and was graduated from the Albany Medical College in 1871.—Dr. Braxton Hicks, F.R.S., formerly physician-accoucheur to Guy's and afterward to St. Mary's Hospital, London, died August 28th, aged seventy-two years. He suffered an attack of influenza three months ago, from which he never fully recovered.—Dr. J. C. Howden, of England, died on August 17th. He was superintendent of the asylum for the insane at Montrose, Forfarshire, from 1857 until last June, when he resigned on account of ill health. He early recognized the value of the out-door system of treatment of the insane, and carried it out in the asylum under his charge. Three years ago he had an attack of apoplexy, but recovered sufficiently to resume his duties.

English Comments on the Congress.—The correspondents of the English journals are not extravagant in their praise of the Moscow congress. As is usual at such gatherings, absolutely no provision was made to facilitate the work of the reporters for the medical press. The correspondent of the *British Medical Journal* writes, in relation to this: "In a country where practically a press is non-existent, it would be perhaps ridiculous to expect that the convenience of the members of the press of other countries should be carefully considered; but whether it was expected or not, it certainly has been most studiously neglected. The bureau is such only in name; in it one finds neither information nor officials, nor anything, indeed, more than tables, pen, and ink. It rests therefore with the individual correspondent to seek such information as can be gleaned from overworked secretaries and personal observation." Our own correspondents have told us the same story, and the complete and accurate reports which they have sent us were obtained only by following each speaker and taking down his words as they were spoken. The officials of the congress gave them no assistance whatever. *The Lancet* representative complains of the lack of toilet conveniences, "of the shameful inadequacy" of which, he writes, "a plain word must be spoken. One urinal and one water-closet were placed at the disposal of the whole congress, and both were in the same little wooden hut, divided from each other by no partition. Moscow is, according to European ideas, very inadequately supplied with latrines, while the unblushing publicity of the East concerning the performance of all the offices of nature to a great extent prevails; but those responsible for the arrangements of the public meeting in the Manége ought to have remembered that the meeting was an international one, and not an Oriental one." Finally, the *Medical Press* says that the Russian government excluded Jewish physicians from the congress—a fact, if it is a fact, which greatly surprises us, for it had been declared officially that no distinction would be made against Hebrews on this occasion. "Naturally enough," our contemporary says, "much irritation has been caused by the exclusion of Jews from the Moscow congress. An incident in connection therewith has been referred to by the Moscow correspondent of the *Standard*. At one of the dinners held in honor of the congress, a heated discussion took place across the table between a Russian member and one of the best-known German professors, *à propos* of the prohibition, in the course of which the former used threatening gestures toward his *confrère*, who was an elderly man. It was only after considerable difficulty that an adjustment of the quarrel was brought about. Such asperities, of course, should have no place at the meetings of scientific men. But neither should any narrow-minded exhibition of religious or racial intolerance be permitted by those responsible for the organization of the *réunions*."

Smuggled Phenacetin.—A saloon-keeper in Hoboken was arrested recently for having four hundred ounces of smuggled phenacetin in his possession. The box containing the drug was found in the icebox of the saloon.

The German Society of Naturalists and Physicians.—The sixty-ninth annual meeting of this association will be held at Brunswick, September 20th to 25th, under the presidency of Dr. v. Lang, of Vienna. The subject of scientific photography and its application to medicine is one of the most important of the set discussions.

A Perilous Post.—Sir Joseph Tholozan, physician to the late shah of Persia, died a few weeks ago, and a French paper says that it is currently reported that he was poisoned. He had been the trusted confidant of Nasr-ed-Din for over thirty years, and was acquainted with many of the secrets of the court, and his removal was desired on this account by the new government. After the death of the shah Sir Joseph Tholozan wrote to a friend in France, stating that he intended to resign his post because his life was not safe, and it would appear that his fears were only too well founded. His predecessor at the Persian court is stated to have been done away with in the same manner.—*British Medical Journal.*

Yellow Fever.—There is little to cause alarm in the situation in the towns bordering the Gulf, where yellow fever has appeared. The disease has naturally spread from Ocean Springs, where it was first discovered, to other places. The largest number of cases is in Edwards, Miss., where forty-two persons are reported sick, many of them with yellow fever. At New Orleans several new cases are reported each day, but the sanitary authorities are doing very efficient work and there is no apprehension that the disease will assume epidemic proportions. The fever is in a mild form, and the mortality thus far has been light.

Reviews and Notices.

THE MENOPAUSE. A Consideration of the Phenomena which Occur to Women at the Close of the Child-Bearing Period, with Incidental Allusions to their Relationship to Menstruation. Also a Particular Consideration of the Premature (Especially the Artificial) Menopause. By ANDREW F. CURRIER, A.B., M.D., New York City. New York: D. Appleton and Company. 1897.

THE main object of the author in writing this book, he tells us, was to divest this physiological period of the atmosphere of terror with which it has become surrounded. "The menopause," he says, "is *not* a dangerous time or experience for the majority of women, any more than puberty is. The majority of women pass through it with as little incident or discomfort as they experience at puberty." Still there are some who suffer more or less, and these the follower of Dr. Currier's simple directions will be in a position to relieve greatly. In some cases the hastening of the menopause by surgical measures is advised, but we are glad to find that the author is quite conservative when he comes to discuss the indications for operation.

ENCYKLOPAEDIE DER THERAPIE. Von OSCAR LIEBREICH, Dr. Med., Geheimer Medicinalrath, o.ö. Professor der Heilmittellehre an der Friedrich-Wilhelms-Universität, unter Mitwirkung von MARTIN MENDELSOHN, Dr. Med., Privatdocent der inneren Medicin an der Friedrich-Wilhelms-Universität, und ARTHUR WÜRZBURG, Dr. Med., Kgl. Sanitätsrath, Bibliothekar im Kaiserlichen Gesundheitsamte. I. Band, 2 Abtheilung, und II. Band, 1 Abtheilung. Berlin: August Hirschwald. 1896 and 1897.

THIS first number of the second volume of this latest and best of the German works on therapeutics contains the titles from Diaphoretica to Flaschenbouillon, and embraces a consideration of such important subjects as digitalis, diphtheria, diuretics, dyspnœa, iron, eclampsia, suppuration, electrotherapeutics, empyema, endocarditis, epilepsy, euthanasia, obesity, and fever. The second number of volume one was delayed in transmission and was consequently not reviewed in its proper place. It is of the same general excellence as the other parts of the series. It contains the titles from Auge to Cera, including eyes, autointoxications, baths and balneotherapy, bacilli and bacteria, professional neuroses, lead-poisoning, blindness, blood and blood-poisoning, gastro-enteritis, bronchitis, broncho-pneumonia, bubo, carbuncle, carcinoma, cataract, and many others. The articles are excellent of their kind, concise but complete, and of just the sort that a busy man wants.

A SYSTEM OF MEDICINE. By Many Writers. Edited by THOMAS CLIFFORD ALLBUTT, M.A., M.D., LL.D., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge, Fellow of Gonville and Caius College. Volume III. New York: The Macmillan Company. 1897.

WE call this the third volume because the title-page says it is, but the editor and publishers are apparently unable to make up their minds as to its proper place in the series. The cover says 3, the title-page says 3, the editor in his preface calls it 2, and on the last page is printed "end of Vol. II." This does not inspire one at first glance with confidence in the systematic arrangement of the work as a whole, and neither does the fact that it has been found necessary to insert several addenda to articles in this and preceding volumes. The editor unfortunately placed the infectious diseases in the early volumes of the series, with the inevitable result that, before the last volume is issued, the first will be relegated to medical history. In these days of rapid advances in the science of bacteriology such an arrangement is regrettable. The issue of this volume was delayed in order to profit by the report of the British commission on vaccination. The report itself was scarcely worth waiting for, but it is a pity the book was not delayed a little longer to enable the writer on yellow fever to profit by Sanarelli's discovery of the bacillus icteroides. It is hardly fair, we admit, to criticise a single volume in a series, since apparent omissions may be repaired by articles in later volumes, but we cannot understand why the section on "infective diseases of chronic course" should include only tuberculosis, leprosy, actinomycosis, and Madura foot. Tuberculosis fills less than forty pages and the section on its treatment just seven lines, no mention whatever being made of the labors of Koch and others in this direction, unless we accept as such the statement that "there is no specific treatment for tuberculosis." In the article on leprosy, also, the work of Carrasquilla, of Bogotá, is completely ignored. The writer of the article, Dr. Abraham, admits the possibility of contagion, but evidently regards it as a minor factor in the spread of the disease. The author of the paper on typhus fever says that the disease is hardly known in the tropical and subtropical parts of North and South America; a trip to Mexico would convince him of his error. The article on malaria is by Dr. Osler, of Baltimore. It is a disappointingly brief and superficial sketch, unworthy of the author. Surely malaria is as important a subject as rabies or anthrax, yet in this work the editor has allotted to the latter twenty-four and twenty-eight pages respectively, while malaria is tossed off in twenty-two pages.

REFERENCE BOOK OF PRACTICAL THERAPEUTICS. By Various Authors. Edited by FRANK P. FOSTER, M.D., Editor of the New York *Medical Journal* and of Foster's Encyclopædic Medical Dictionary. Volume II. New York: D. Appleton and Company. 1897.

WITH the second volume this excellent work is completed and is rendered immediately available by means of the general index and index of diseases and remedies as a book of therapeutic reference. A supplement of nearly fifty pages bears witness to the rapid strides in medical science, since it is filled chiefly with matter relating to knowledge acquired since the appearance of the first volume. The work is well printed and well bound, and the brief articles on every subject relating to the treatment of disease are excellently written and in the main satisfactory as to the information they impart.

SUPPRESSION AND PREVENTION OF LEPROSY. By ALBERT S. ASHMEAD, M.D., Late Foreign Medical Director, Tokyo Hospital, Japan. Norristown, Pa.: *Herald* Printing and Binding Rooms. 1897.

THIS is a reprint of a number of letters and of essays by the author on subjects connected with the suppression of leprosy. The author, who at first opposed strenuously the proposed leprosy congress at Berlin, now gives his adherence to it. Dr. Ashmead's belief is that Hansen's discovery of the leprosy bacillus has been of no use and can be of no use to the leper, that leprosy is absolutely incurable, and that the only safety for the well is to isolate all lepers strictly. Consequently the proposed leprosy congress will be worse than useless if it discusses anything but isolation. This shows that Dr. Ashmead has firm convictions, but it can scarcely be accepted as a specimen of scientific reasoning.

EYE STRAIN IN HEALTH AND DISEASE. With Special Reference to the Amelioration or Cure of Chronic Nervous Derangements without the Aid of Drugs. By AMBROSE L. RANNEY, A.M., M.D., Author of "Lectures on Nervous Diseases," "The Applied Anatomy of the Nervous System," etc.; Late Professor of Nervous Diseases in the Medical Department of the University of Vermont and of the Anatomy of the Nervous System in the New York Post-Graduate Medical School, etc. Illustrated with 38 Woodcuts. Philadelphia: The F. A. Davis Company. 1897.

THIS is an interesting book, for it deals with the marvellous, which always makes entertaining reading. For example: A man had failed mentally to such a degree that he had to be told what clothes to put on, would chew a bolus of food for an hour unless told to swallow it, was absolutely unable to do any work, and had suffered for six months terribly from insomnia. He had four degrees of hyperphoria. This was corrected by a graduated tenotomy of the left superior rectus. "The night following the operation he slept soundly all night. He arose the next morning, dressed himself without aid, and drank three goblets of milk before the rest of the family were up. He then sat down and ate a good breakfast, finishing as quickly as any one." Numerous other instances are reported of cures, by correcting visual defects, of melancholia with delusions or suicidal impulses, insomnia, and nervous prostration of many years' standing. The book

deals with the influence of eye strain in the causation of headache and neuralgia, chorea, insomnia, chronic gastric and digestive disturbances, epilepsy, nervous prostration, and insanity, as well as of various other affections of the eye itself. Dr. Ranney is an earnest believer in his theory, and the many facts he cites afford strong evidence in favor of it, even after we eliminate the chance of coincidence and the possible effect of "suggestion." Those who are inclined to absolute incredulity must be reminded of the common experience that some patients, said to be suffering from eye headache, have really been relieved by proper glasses, and we cannot reject on the mere argument of improbability evidence such as that furnished in abundance by Dr. Ranney. At least, before condemning the author the sceptic should in fairness read his book.

THE VERTEBRATE SKELETON. By SIDNEY H. REYNOLDS, M.A., Trinity College, Cambridge; Lecturer and Demonstrator in Geology and Zoology at University College, Bristol. Cambridge: At the University Press. 1897.

THOUGH the title does not suggest it, an account is included of the skeleton of the lowest Chordata; the description of the general characters of each group is first given, and then of the subdivisions. A large field has been covered without extending the work beyond the limits of a moderate-sized handbook.

The drawings, which are numerous, are original or from photographs by the author and his sister. There is a very full index.

The volume is one of the Cambridge Natural Science Manuals. The author is to be congratulated on the completion of an arduous and praiseworthy task in a very successful manner.

FADS OF AN OLD PHYSICIAN. A SEQUEL TO "PLEA FOR A SIMPLER LIFE." By GEORGE S. KEITH, M.D., LL.D., F.R.C.P.E. London: Adam & Charles Black. 1897.

THIS is, as the title indicates, a sequel to the author's "Plea for a Simpler Life," noticed in the MEDICAL RECORD some time ago. Various matters of general and professional interest are treated in a pleasing manner. Many views advanced may be regarded as fads—hence the title. Starving, stimulants, relief of pain and sleeplessness, cancer, self-massage, and methods of preserving health, are some of the topics worth reading.

THE LIVER OF DYSPEPTICS, AND PARTICULARLY THE CIRRHOSIS PRODUCED BY AUTO-INTOXICATION OF GASTRO-INTESTINAL ORIGIN (CLINICAL, ANATOMO-PATHOLOGICAL, PATHOGENIC, AND EXPERIMENTAL STUDY). By DR. EMILE BOIX, Interne Lauréat des Hôpitaux de Paris; Medaille d'Or, Concours de 1893; Medaille d'Or des Épidémies (Cholera, 1884). Authorized Translation, from the Latest French Edition, by PAUL RICHARD BROWN, M.D., Major and Surgeon, United States Army. New York and London: G. P. Putnam's Sons, The Knickerbocker Press. 1897.

THE work was well worth the translation, and Dr. Brown has done it well. Causes of cirrhosis other than those referable to alcohol and its abuse are taken up. The term "dyspeptic cirrhosis" is employed as a handy means of expression. In Part III. a series of experiments is given, showing the influence of the various dyspepsias in the etiology of cirrhosis.

VORLESUNGEN ÜBER KRIEGSCHIRURGIE. Von DR. L. LÜHE, Generalarzt a. D. Berlin: August Hirschwald. 1897.

THIS work consists of twelve lectures on military surgery given by the author to German army surgeons. Operative technique is considered only in so far as it differs from that of civil surgery. The first part of the work is devoted to a description of the wounds inflicted by modern projectiles, based chiefly upon the experiments conducted by the German commission. The author then describes the duties of the surgeon during and after battle, the aseptic and antiseptic methods which are practicable in the field, and the nature of the surgical treatment which is demanded on the firing-line, at the first dressing-station, and in the field hospital. He differs from most authors in advising that wounds be not exposed by litter bearers for the application of dressings, and that provisional splints be applied over the clothing. The author is remarkably well acquainted with the work of American surgeons and quotes American writers more frequently than any others outside of Germany. The work is eminently practical, and contains many suggestions which will prove of value to the army surgeon.

Society Reports.

TWELFTH INTERNATIONAL MEDICAL CONGRESS.

Held in Moscow, August 19, 20, 21, 22, 23, 24, 25 and 26, 1897.

Special Report to the MEDICAL RECORD.

SECTION IN SURGERY.

Continued from page 420.

First Day—Friday, August 20th.

The Surgery of the Lung.—DR. TUFFIER, of Paris, read a long paper on surgery of the lung, particularly of tuberculous cavities and pulmonary gangrene. The paper was one that greatly interested those present, in spite of its length, nearly two hours being occupied in its delivery. It was an exposition of the indications for surgical intervention in various pulmonary affections, and a plea for the more general resort to the use of the knife in such cases.

DR. MACEWEN, of Glasgow, agreed in the main with Dr. Tuffier, but considered that certain phases of the practical side of the question and certain details in technique justified some additional remarks. The physics of the pleural cavity were still not entirely settled. The general belief was that the opposing surfaces of the pleuræ were kept in apposition by atmospheric pressure. Personally he did not believe this traditional opinion, but considered that the phenomenon was best explained as the result of molecular adhesion. When two perfectly smooth surfaces, such as two pieces of polished glass, were firmly pressed together, they adhered. The same happened with regard to the two pleural surfaces. As the result of this, when the pleura has been slightly incised, though the atmospheric pressure has been relieved of its influence, parts of the pleura in the neighborhood adhere and give rise to a collection of air in the pleural cavity. This soon causes symptoms of dyspnœa. Puncture relieves it for the time being, but accumulation begins again and reproduces the symptoms. Further aspiration has only the same result. If the pleura be freely incised, however, these adhesions fail to take place, and the accumulation of air in the pleural cavity, with the consequent symptoms, does not take place. Hence in all cases of operations involving the pleura, free incision should be practised. With regard to tuberculous cavities, personal experience had taught him the following methods of treatment for varying circumstances: In small tuberculous cavities it was sufficient to resect three or four ribs, and allow the cavities to collapse. Large cavities should be freely incised, emptied, and drained. Very large cavities should be thoroughly scraped and packed with iodoform gauze. The improvement noted after such procedures was often immediate and striking. The general condition improved, and diseased foci in the other lung were gradually shut off. Such improvement had even been observed to follow in cases in which disintegration of the operated lung took place.

DR. COROMILAS, of Calamata, Greece, read a paper dealing especially with surgical interference with tuberculous cavities. His paper was a repetition of what had been said by Tuffier, but illustrated how

widespread is becoming the realization that surgical interference in pulmonary affections, even in extensive tuberculous processes, is perfectly justifiable.

Dr. Fabrikant, of Kharkov, spoke of radical extirpation of diseased localities down to healthy tissue, when the affection is not too far advanced, early operation after careful diagnosis being the requirement in lung surgery.

The Diagnosis of Pleural Adhesions. — Dr. Sapechko, of Kiev, read a communication with this title. After pointing out the difficulties of exact diagnosis in the matter with our present methods, he described his own mechanical process for their diagnosis. When operations are to be made on the lungs for tuberculous cavities or abscess or gangrene, it is important to have the incision at a point of adhesion. The speaker inserts as far as the pleura a cannula, to which is attached a U-tube manometer containing decinormal physiological salt solution. Sinking of the liquid shows the existence of negative pressure; hence non-adherence of the pleura. When the level of the liquid remains undisturbed, adhesions are present. Dr. Sapechko has never lost a patient from infection of pleura after using this method. He suggested that when adhesions cannot be found they may be produced by the introduction of an irritating though sterile liquid. Experiments in this line have succeeded in animals, and promise to lessen greatly the dangers of surgical interference in the lungs.

Perityphlitis.—Dr. Roux, of Lausanne, read a paper with this title. He considered that not enough importance was attached in Europe to the surgical treatment of the affection. He had seen a great many cases, and had operated in a number. He did not consider that all cases presenting symptoms located in the right iliac fossa should be operated upon, as many of his American colleagues seemed to think, but he considered the affection properly a surgical one. Such opinions as that of Leyden, of Berlin, that practically all cases of appendicitis got well in time and that the fulminant cases were fatal anyhow even under surgical treatment, he could not consent to. He believed that death took place from peritonitis after secondary perforation, and he thought the patient should not be moved at all, especially not for a disturbing ride to a hospital. The abscess became frankly localized in from five to seven days, and then could be opened from the flank, the rectum, or the vagina. One must always remember that there is a meso-appendical form of abscess, in which the pus is located behind a fold of peritoneum. In opening, the operator may come upon the serous or seropurulent exudate, which is always found in the peritoneum, due to the presence of the inflammatory process, and erroneously think that he has opened the abscess. This form resembles a generalized peritonitis, but if one waits for a few days localization takes place fully and the case is easy of treatment. To operate during the first period in such cases means the death of the patient. The speaker believed in expectant treatment until firm inflammatory adhesions have walled off the exudate. He did not agree with American surgeons, who thought we could operate soon enough as to suppress the appendicitis; this would be the ideal way, but could be put into practice only during the first few hours of the attack. It would be realizable only if all our patients lived in hospitals. When a patient has had even one attack, Dr. Roux would advocate the removal of the appendix some six or eight weeks after recovery, for there exists no other means of preventing recurrences. When operating in the interval he always separates the muscle fibres of the belly wall in the direction they run, in order to avoid subsequent hernia or eventration. He avoids thus the cutting of nerve fibres, which have a trophic influence on the muscle fibres and keep them in proper tone to retain the abdominal viscera. If the operation in the interval between attacks is difficult of performance, it is a sign that the operator has not waited long enough, for it should be extremely easy.

Relapsing Appendicitis.—Dr. Kümmel, of Hamburg, read a paper with this title, which was a review of one hundred successful resections of the vermiform appendix. In addition to his own cases, the speaker had collected the statistics of a nearly equal number of cases of relapsing appendicitis, in which the operation had been refused. In these cases the mortality after three years was greater than in the operated cases, while the morbidity consequent upon the recurring attacks made the second series of cases incomparably worse.

Dr. Sonnenberg, of Berlin, reported two hundred and fifty operative cases of appendicitis, exclusive of several of tuberculous disease of the appendix. There were sixty-six cases of simple appendicitis, one hundred and fifty-six of perforative appendicitis, and twenty-eight of gangrenous appendicitis. In the two hundred and fifty cases there were forty-three deaths. This mortality of seventeen per cent. represents the mortality of the disease, not of the attacks, while statistics so far have been mainly concerned with the mortality of the attacks. The forty-three deaths were encountered in cases of perforative appendicitis with complications (as lung and pleural affections, thromboses, peritonitis, etc.) and in cases of gangrenous appendicitis. The operated cases of simple appendicitis and of simple perforative appendicitis gave no deaths. It is to the surgeons, he said, that we owe our knowledge of diseased conditions of the appendix. The most interesting thing in the process is the tendency very often for important pathological changes to go on for a long time without noticeable symptoms. These so-called latent cases manifest themselves first in a stormy attack with severe clinical symptoms, usually caused directly by perforation of the appendix. This perforation is, however, only the last link in the chain of recurring pathological changes in the chronically affected appendix. In sixty per cent. of seemingly first attacks of appendicitis perforativa without complications operated upon, extensive pathological changes that had evidently been going on for a long time were found in the appendix. The same state of affairs was recognized in seventy-four per cent. of the cases of perforative appendicitis with complications, and in practically all the cases of gangrenous appendicitis. Of these one hundred and twenty-four patients, only seventeen had had any symptoms before their attack. It is impossible to imagine, however, that such cases should be absolutely symptomless, so that it is our duty to pick out the symptoms. It is wonderful, the speaker said, to see how seemingly disconnected with the appendix the symptoms may seem to be which point to the insidious development of pathological changes in the appendix. Great success in the treatment of appendicitis awaits the success of our efforts in this direction. As to the question whether the appendix should be searched for and removed, Dr. Sonnenberg believed that this should be done in all cases in which it does not endanger the patient's life. It was his general rule to leave the appendix *in situ* only when there was danger of breaking up the adhesions that protect the general peritoneal cavity, or when there was danger of injuring the cæcum and so causing subsequent perforation, or when it seemed probable that in the process of healing the appendix would be completely absorbed with the exudate. While in most other conditions where medicine and surgery touch the domain of the surgeon has been narrowed, here it has been widened, and the sooner we recognize that it is often properly a surgical, not a medical condition, the better. In simple appen-

dicitis it is in the interval between the attacks that the operation should be done, and this is extremely advisable whenever there has been a frank attack. Out of sixty cases of simple appendicitis, Dr. Sonnenberg had operated only twenty-four times during the attack.

The Indications for the Lumbo-Sacral Incision in Suppurative Appendicitis. — Dr. Grinda, of Nice, read a paper setting forth the indications and advantages in the operative treatment of suppurative appendicitis of an incision following the external border of the sacro-lumbar mass of muscles, curving in at the lower part, prolonged parallel to and one finger's breadth above the iliac crest to about three centimetres from the anterior superior iliac spine. This lumbo-iliac incision is indicated in all cases in which the local signs permit the diagnosis of appendicular abscess, especially in the cases in which there is pain in Petit's triangle and in which McBurney's point is little if at all tender. With this incision better drainage is secured, there is less danger of wounding the small intestines which so often lie adherent above the inflammatory exudate around the appendix, there is less danger of infection of the general peritoneum, and it is also much easier to get at the appendix itself for a radical operation. Especially is this incision to be commended when the general symptoms indicate appendicitis and nothing points to a special localization of the suppurative process.

Dr. Le Dentu, of Paris, agreed with Dr. Roux as to the necessity for waiting until the process had thoroughly localized itself. He counselled especially the operation in the interval between attacks. He did not think that the surgeon should spring upon the patient at the first sign of trouble with the appendix. Sudden perforation with general peritonitis or fulminant gangrene of the appendix was too rare to influence the general rule of action in the matter.

Dr. Lavista, of Mexico, thought that the American surgeons as a rule were sufficiently conservative. They, too, counselled the operation *à froid* in relapsing cases of simple appendicitis. Acute cases must, however, be watched with extreme care, as the patient's danger is always great and the surgeon must be ever prepared to operate.

The Chairman said that Dr. Senn, of Chicago, had asked to be excused, so that the section would unfortunately not have the pleasure of listening to his paper on "The Uses of the Omentum in Surgery." The paper was therefore read by title.

Treatment of Intestinal Occlusion.—Dr. A. von Eiselsberg, of Königsberg, read a paper on the treatment of inoperable stricture of the intestinal canal and of fæcal fistula by the complete shutting off of the affected portion of the intestine. In carcinomatous strictures the operation gives complete relief from pain and the painful sense of pressure that so often characterizes these cases. In fæcal fistula after appendicitis, when the usual methods for the closure of the fistula have failed, the shutting off of the chronically inflamed portion of intestine and the bringing together of two healthy portions are indicated.

Dr. R. von Baracz, of Lemberg, read a paper on the same subject. In a report of seven experiments which he had made on dogs, the speaker brought out the dangers of leaving the shut-off portion of intestine in such cases unoccluded, and demonstrated, by means of specimens taken from the operated animals, the liability to serious consequences of such a course.

A paper by Dr. Doyen, of Paris, "On the Surgery of the Stomach," was read by title.

Intestinal Anastomosis.—Dr. Martin y Gil, of Malaga, presented a communication on discs of ivory deprived of their lime salts as a mechanical help for intestinal anastomosis. He exhibited the discs and explained their advantages in the matter of flexibility and absorbability.

Dr. Frank, of Chicago, then presented a paper on his new absorbable intestinal coupler.

Sarcoma of the Omentum.—Dr. Djemil Pasha, of Constantinople, reported a case of sarcoma of the great omentum and of the transverse colon, the consequence of a silk suture left in the stump of the epiploon during the course of an operation for the radical cure of inguinal hernia. The operation wound closed by first intention and the patient left the clinic the eleventh day after the operation, perfectly cured. Two months later he began to have intestinal symptoms, some digestive troubles, and pains around the umbilicus. The symptoms of occlusion of the intestine supervened, and at the laparotomy a tumor was removed, which was found on microscopical examination to be a sarcoma. This was the second time in his practice that the speaker had seen a tumor develop when a silk ligature had been left in the tissues. He thought that while the development of the tumor might be due to the accumulated irritation of the presence of the foreign body on tissues predisposed to the embryonal overgrowth, it was much more probable that the sarcoma was due to the presence of a micro-organism and that the sterilization of the silk even at a temperature of 140° C. was not complete. The microbe of sarcoma resists the sterilizing process, and afterward excites neoplastic formation.

Splenectomy.—Dr. Thomas Joannescu, of Bucharest, read a paper on this subject. He reported the removal of the spleen twelve times—eleven times for ague cake, once for hydatid cysts. He had never found that any disadvantages accrued from such removal, but said that, on the contrary, the patient's general condition improves almost immediately. There is an almost immediate increase in the number of red blood corpuscles, sometimes preceded by a short interval of diminution. The malarial cachexia becomes less marked, probably owing to the fact that, as Laveran has shown, the spleen is the favorite haunt of the malarial organism and that it is from there that it sallies from time to time, and that this source of constant reinfection is removed. The speaker stated also that the urotoxic coefficient is lessened after the removal of the spleen to a distinctly noticeable degree, and he regarded the law of urinary hypotoxicity as established for asplenic subjects, whether the spleen has been surgically removed or its function has been lessened by disease and degeneration. Neither the size of the spleen nor the age of the subject constitutes a contra-indication to splenectomy. Dr. Joannescu regarded the inefficacy of medical treatment continued for a long time as an all-sufficient indication for splenectomy. When to this are added pain, discomfort, and commencing malarial cachexia, then the indications are absolute. In all cases the operation is followed by immediate improvement in the general condition. In fifteen cases of splenectomy there were three deaths, a mortality of 15.4 per cent.

Second Day—Saturday, August 21st.

Cancerous Strictures of the Digestive Tract.—Dr. Czerny, of Heidelberg, read a paper entitled "Therapy of Carcinomatous Strictures of the Œsophagus, Pylorus, and Rectum, with the Success of Various Methods of Treatment." He considered cancer of the œsophagus above the thorax perfectly amenable to surgical treatment, either radical or palliative, according to the extent of tissue involvement. As to intrathoracic œsophageal cancer, the question was very different. Attempts at removal were so dangerous that he considered the operation almost unjustifiable, although by the posterior route the operation

might be feasible. The improvement of its technique is one of the problems for younger surgeons to solve. Dilatation of strictures by means of bougies is of the greatest use in cases in which nutrition is interfered with by the impossibility of swallowing. He had seen a case go on for years under the use of bougies, when the malignant growth was not rapid, that would have been fatal from inanition without them. The œsophageal *sonde à demeure* might have its indications; the speaker had had no experience with it. When methods of dilatation fail to make alimentation possible in the ordinary way, he considered gastrostomy a legitimate resource. The making of a valvular opening by which the muscles of the abdominal wall are used to form a sort of sphincter is especially commendable. In cases of cancer of the pylorus, the main difficulty is one of early and positive diagnosis. It is only when all the classical symptoms are present that the surgeon is justified in operating. There are many surgeons who can report patients living from four to six years after the resection of the pylorus for cancerous infiltration. When resection is not possible, owing to the size of the tumor, or when the contraindication of enlarged glands or adhesions of the pancreas exists, then gastro-enterostomy is our only resource. It spares the patient, restores his digestive functions, and lengthens his life by decreasing the irritation of the cancerous mass. For gastro-enterostomy the Murphy button is extremely commendable. The speaker had himself used it in fifty-six cases. It very materially shortens the time of operation, which is an important item for the run-down, poorly nourished patients who come for such operations; it thus shortens the time of anæsthesia—another important item; it is just as sure when carefully and properly employed as the most complicated suture method, and it enables us to feed the patient sooner and with less risk after the operation than by any suture method. Besides this, there seems to be less tendency to stricture after the use of the button than with suture methods. Professor Czerny had noted this himself in two patients on whom the operation had been done three years before death. The treatment of rectal carcinoma is extremely encouraging, and is growing more and more so as our methods of diagnosis and operation improve. The speaker had one patient alive twelve years after an operation for rectal carcinoma, and another seven years after. Many reports of cured cases of rectal cancer are being made. A recent set of statistics has given the recurrences as about sixty per cent., but rectal carcinoma recurs sometimes very late. Czerny had known of two cases in which the recurrence had taken place more than twelve years and eight years respectively after operation, so that it is hard to say of how much real value statistics of cures may be. When rectal carcinoma is inoperable, then the formation of an artificial anus becomes the surgeon's duty, as in the corresponding case of the pylorus. It saves the patient pain, helps his general nutrition, removes irritation of cancerous elements, and so lengthens the patient's life.

Dr. Ceccherelli, of Parma, read a paper on the same subject. In cases of stricture of the œsophageal opening, he employed a special method, which fulfils the three important conditions of giving support to the stomach, making a valve for the opening, and forming this opening at a distance from the pyloric end. For pyloric strictures he believes that pyloroplasty is indicated when there exists a fibrous ring. In ulcers of the stomach gastro-enterostomy is useful and is more definitely indicated than resection, except in cases in which the ulcer is surely single and does not extend into the pylorus. He had made a special study of what are called syphilitic strictures of the rectum, and had shown histologically that syphilis is the original cause, but that an ordinary chronic inflammatory process supervenes and constitutes the morbid after-condition. On this, of course, syphilitic treatment has no effect, and the stricture must be dilated or treated radically with the knife.

Local Anæsthesia in Abdominal Operations.—Dr. I. E. Van Iterson, of Leyden, followed with a communication on the same subject. The main feature of his paper was the fact that all of the speaker's intestinal operations were accomplished without general anæsthesia. Of these there were sixteen gastrostomies, twenty gastro-enterostomies, two resections of the pylorus (one patient still living and well sixteen months after the operation), one jejunostomy, and ten colostomies. His plan is to inject two syringefuls of one-per-cent. solution of cocaine into the abdominal wall; this makes the external incision painless. Manipulation of the intestine causes no complaint on the part of the patient, unless the mesentery is pulled on. The stitches can be inserted into the abdominal walls after the operation without causing much pain, thanks to the persistent effect of the cocaine injections. The advantages of the method are that the exhausting effect of the long anæsthesia on patients who are already weakened by inanition is avoided. Besides, the giving of food may be begun at once. While the patients are still on the table, Dr. Iterson begins to give small quantities of milk, and this is continued every half-hour afterward. Another feature of this paper was the statement that the author usually has his patients sit up during the convalescence after the operation, and has their position frequently changed. He thus avoids the hypostatic pneumonias that so often carry off weakened patients after serious operations. Neither the operating without general anæsthesia nor the changes of position afterward are ungrateful to the patients, who seem very well satisfied with the methods employed.

Dr. Sematzky, of St. Petersburg, in a paper on the methods of gastro-enterostomy in strictures of the pylorus, said that in the ordinary method of making gastro-enterostomies the bile and pancreatic fluid would be conducted into the stomach and inevitably lead to nausea and vomiting. This was a great defect in the present methods. After a series of experiments on dogs, he had devised a method by which the presence of bile in the stomach may be avoided. He makes a transverse resection of the lower end of the jejunum and unites the lower section to the stomach; the upper part is joined by an anastomosis with the small intestine, twelve to sixteen centimetres lower. This allows the pancreatic secretion and bile to find their way properly into the intestine, but not into the stomach.

The Vaginal Route for Rectal Operations.—Dr. Heidenreich, of Nancy, read a paper on "The Vaginal Route in the Resection of the Rectum," in which he advocated an operation through the posterior vaginal wall in all cases of carcinoma of the rectum in women. The operation is not so serious or so bloody as that known as Kraske's. In the case of smaller tumors the operation commends itself by its extreme simplicity; in that of large tumors it gives the most room for operation; and when tumors are situated high up in the rectum it enables the operator to get at them better than any other way. The external sphincter can be easily and completely preserved, and incontinence is thereby avoided.

Treatment of Ischuria following Hypertrophy of the Prostate.—Dr. Bottini, of Pavia, in a paper on this subject, demonstrated his new method of dealing with these cases. His instrument resembles a lithotrite. The movable parts can be used as a galvano-cautery for burning a groove through the prostate. The current is supplied by a specially made battery, and the strength of the current is entirely under the control of the operator. After the blades of the instru-

ment have been inserted in the prostatic urethra, they may be turned in the direction necessary to destroy that portion of the prostate which seems to offer the greatest obstruction to the passage of urine. The results of the method are excellent. Within a few days, sometimes hours, the patient urinates voluntarily. In ten days all catheterization can be stopped. The relief afforded, according to the author's claim, is complete and permanent. The instrument may be employed after local anæsthesia by cocaine. It obviates the dangers which have so far attached to all surgical attempts to re-establish the urethral canal through the prostate, especially doing away with the liability to hemorrhages. The cautery acts effectively in closing all blood-vessels. A current of ice-cold water flowing through the instrument effectually protects healthy tissue. The contraction of the resultant cicatrix is never sufficient, when the cauterization has been thorough, to bring back the old symptoms of prostatism. Surgeons from other lands, among them Freudenberg, of Berlin, and Kümmel, of Hamburg, have employed the instrument successfully, and the reports of their cases show that it is not in its inventor's hands alone that the instrument is effective.

Third Day—Monday, August 23d.

Treatment of Infected Wounds.—Dr. E. Braatz, of Königsberg, read a paper on this subject. Infected wounds, he said, must be treated on strict antiseptic principles, and in successive dressings every care must be taken that instruments and everything else that comes in contact with the wound are thoroughly sterilized. One infection may be followed by another of severer character, and this mixed infection often runs a severe course.

Dr. Le Dentu, of Paris, read a paper on the same subject, in which he advocated the use of some of the newer antiseptics in preference to sublimate solutions.

Silver as an Antiseptic.—Dr. Credé, of Dresden, read a paper containing an interesting report on his method of treating wounds with silver, which, after an application of nearly two years with a considerable number of patients, has proved to be most successful. Although admitting all the advantages of asepsis, he said that it was of limited application and was impracticable for the physician who had no modern hospital at his disposal. Credé's method is based upon the antiseptic value of the lactate and the citrate of silver and their non-toxic properties. Experiments made with the internal exhibition of silver salts showed that they possess a certain power as general antiseptics, but for the purpose of a general disinfection only metallic silver can be used, and this, of course, in a condition which allows it to dissolve in water and albuminous fluids. The speaker believed that he had discovered in soluble metallic silver a remedy which is able to disinfect the whole of the body, and which represents a specific against septic infections, in so far as these have not caused organic lesions.

Permanence of the Results in the Radical Cure for Hernia. Dr. Lucas-Championnière, of Paris, read a communication with this title. In seventeen years he had had more than six hundred cases of radical operation for hernia, and so believed himself in a position to formulate some practical conclusions. It is the rule for a hernia after a good operation not to relapse, even when no support is worn. Any operation that does not penetrate the abdomen and leaves intact the contents of the inguinal canal and the canal itself must be considered as absolutely without value. Operations limited to the external orifice of the canal are not radical cures in the true sense. After the operation the abdominal wall should be submitted to regular and methodical movements, and the patient should avoid as far as possible growing very stout after the operation. The fattening of the subject is one of the chief causes which lead to relapses by a fatty infiltration of the muscles of the abdominal wall. Gradual progression in the taking of exercise after an operation for radical cure is a point of the highest importance in obtaining a definite solidity of structure in the wall, which will afford the necessary resistance for violent exercises. The bicycle is eminently suited to this purpose. In the speaker's experience relapses have always come from one of two causes, namely, the excessive taking on of fat or sudden violent efforts, as in lifting.

The Suture of Large Vessels in Continuity.—Dr. J. B. Murphy, of Chicago, read a paper on this subject, in which he described the experiments already detailed in the Medical Record,[1] and gave the details of two unreported cases and demonstrated his method of performing the operation and his instruments for it. Communications in English are usually received with brutal discourtesy at international congresses; this, however, did not share the usual fate, but was listened to with profound attention. The more remarkable of the two cases was one of gunshot wound of the subclavian, in which, after cutting down on the huge hæmatoma which had formed in the four days since the accident and securing the artery, Dr. Murphy resected three-fifths of an inch of the artery in its second portion, sutured it, and had immediate return of pulsation at the wrist. The paper excited the greatest interest, and the instruments were the subjects of marked attention and discussion at the close of the session.

The Radical Treatment of Hernia.—Dr. Cazin, of Paris, read a paper, the joint work of himself and Professor Duplay, on a new method of treating the sac in the radical cure of inguinal hernia. The method has two essentials: 1, The sac is preserved and is used for the purpose of making a solid cicatrix, forming a sort of organized stopper between the peritoneum and the transversalis fascia; 2, buried sutures are dispensed with, and this the authors consider a decided advantage when it can be done without compromising the solidity of the cicatrix. For suturing the walls of the hernial opening, they employ silver wire, which is removed on the sixth day. The operation is not suitable for all classes of hernia, for when there is a large opening into the canal some procedure like Bassini's must be employed for the reconstruction of the abdominal walls, and then buried sutures must be employed. The abandonment of buried sutures they consider a decided advantage, for when of silk these often give rise to late infections which are exceedingly troublesome; when of catgut they are sometimes absorbed so readily that they do not remain long enough to serve for the formation of a firm cicatrix. The authors had operated upon thirty-three cases in two years with their method. The cure was without incident in all cases, and the relief afforded seemed to be permanent.

Dr. Corbin, of Jassy, read for himself and Dr. Vicol a report on two hundred operations for the radical cure of hernia done in the hospital of the fourth French army corps. Of these, one hundred and ninety-eight were inguinal hernias, one was crural, another umbilical. The number of patients operated on was one hundred and ninety. In most of the inguinal hernias the procedure employed was that of Lucas-Championnière. All of the patients survived the operation, and in but twenty-one was there elevation of temperature after the operation. In three cases there was some deep suppuration. Since the operations there had been relapses in twelve cases. All of them occurred as a consequence of the heavy work the men

[1] Vol. li., p. 73.

had to engage in after leaving the hospital, and in nearly all the relapses there is a history of a special violent effort made at the time of the recurrence of the hernia.

Treatment of Spinal Deformity.—Dr. Calot, of Berck-sur-Mer, read a paper on the treatment of the deformity of Pott's disease. He became tired some time ago of treating Pott's disease in the way usually recommended, by absolute rest and fixation of the parts. Seeing the deformity increase and the prominence become more pronounced, despite the presence of a corset or jacket or other fixation apparatus, he looked around for another mode of treatment. Instead of being merely passive, he adopted active measures. He applied pressure to the prominence while extension was made. Having caused the hump to disappear, he fixed the patient in the position of correction by a carefully applied plaster jacket, which was retained or replaced by a similar one until the tuberculous process had ceased. This usually takes months; it may take a year or more. The important part of the process is the correction of the deformity, which is done gently and carefully, but with sufficient force to secure absolute correction. The indications for this correction are twofold: First, it separates the diseased portions of the vertebræ and fixes them in that position so that they fail to be continual sources of irritation to each other. The second is the lessening of the final deformity of the case. The speaker did not claim that the intervals between the bodies of the vertebræ will be filled up by new bone, yet during the process of healing there is undoubtedly an adaptation of bony structures that retains the spinal column in its corrected position. The treatment is especially suitable for recent cases of Pott's disease, though it may be applied with due circumspection to older cases.

Dr. Joannescu, of Bucharest, presented a paper advocating the reduction of the deformity of Pott's disease by pressure at a single operation. He reported thirteen cases treated during the past year, most of which had been exhibited before the Academy of Medicine in Bucharest. His attention had been called to the subject by Dr. Calot's reported cases, and it was Dr. Calot's method with certain modifications that he employed. He had abandoned traction by assistants, and substituted mechanical means. This dispenses with the need for so many assistants; the traction force is absolutely and methodically regulated; it is not applied by fits and starts, as is almost inevitable in manual traction; and finally, it may be continued not only during the process of reduction but also until the plaster jacket has been applied. With mechanical means the absolute minimum of force necessary to produce the reduction may be employed, which is not so easy when manual traction is used. In his method the child is placed face downward on two elevated cushions—the one under the upper part of the sternum, the other under the pelvis. Traction is applied through bandages, having their attachments so that the distance between pelvis and occiput is gradually increased. Then pressure is applied over the gibbosity until it is reduced. From forty to sixty kilograms of tractive force and forty to fifty kilograms of pressure are sufficient for even inveterate cases. Anæsthesia is necessary only during the period of reduction, and not during the putting on of the plaster jacket. The results of the procedure have been eminently satisfactory as compared with the old methods. The only immediate danger is from the anæsthesia, not from the manipulations. The administration of the anæsthetic should be stopped when reduction is complete, and in recent non-ankylosed cases may be dispensed with entirely.

Dr. Redard, of Paris, had tried Calot's method for the immediate reduction of the prominence of Pott's disease in thirteen old cases with ankylosis, and had not succeeded in effecting reduction after the employment of the maximum of pressure and traction that he thought safe. In recent cases he had succeeded in effecting reduction without much difficulty. Even when the deformity is quite large, provided it is not more than a year old, the manipulations are easy. In some cases even after two years the speaker had succeeded in effecting the reduction. Dr. Redard employed mechanical traction and mechanical pressure to accomplish his results, and considered them safer than direct manual force, because their amount can be exactly measured. He did not think the old methods should be entirely abandoned for the new.

The Fundamental Principles and Methods of the Treatment of Scoliosis.—Dr. Dolega, of Leipsic, read a paper on this subject. According to the generally accepted explanation of the etiology of scoliosis, the condition is a functional deformity of the vertebral column, due to the fact that certain muscles, either congenitally or from some lack of trophic influence, are not able to support the spine properly. When inveterate it is complicated by the fact that unequal pressure on different parts of the vertebræ has led to their uneven development. To prevent this and to correct the deformity while the patient is young, there are four indications: (1) General gymnastics in conjunction with massage for the improvement of general muscle tone. (2) Suspension, which relieves the overstrained muscles for a time and enables them to catch up in nutrition and tone. (3) Gradual reduction of the deformity by pressure, which puts the weaker muscles in a better position to act. (4) Retention of all that has been gained by suspension and corrective pressure by the wearing of an apparatus.

Staphylorrhaphy.—Dr. Le Dentu, of Paris, demonstrated certain instruments for use in staphylorrhaphy. Among them notably were a mouth gag with a crossbar, which rolls the tissues forward and brings the field of operation nearer to the surgeon; a specially constructed dissector with a curve in two directions, that enables it to be used to best advantage as regards the curve of the palate and the confined region in which it has to be manipulated; a needle holder with a concealed needle, that when pushed upon describes a curve that brings it toward the operator, and when withdrawn carries the ligature through the tissues.

Indications and Results of Lithotrity.—Dr. Albarran, of Paris, reviewed this subject as it concerns present-day practice. It used to be said that there were two contraindications, youth and extremely large stones, but these have disappeared before the march of modern surgery. Scarcely ever is it necessary to do a cutting operation for stone. It is the rarest exception to find stone in a patient too young for the performance of lithotrity. The difficulty used to be the introduction of instruments strong enough to be depended on into the urethras of young male patients, but this has disappeared before the gradual perfection of instruments. As to the size of stone, nothing is now too large for the lithotrite. He considers lithotrity one of the great triumphs of modern surgery—that this operation should have reached the perfection and universality of application that it has. Instead of a serious bloody operation with at least fourteen days or three weeks in bed in the most favorable cases, there is a simple surgical manipulation and the patient is able to be out of bed in three days and resume his occupation in six days.

Ischuria from Prostatic Hypertrophy.—Dr. Freudenberg, of Berlin, reviewed the various operations for difficult urination from prostatic hypertrophy. He regarded the Bottini method as the best. He reported a number of successful cases, one in which, after every-

thing possible had been done for the patient by the old methods, the prostatic urethra was enlarged by Bottini's electro-caustic method; he was able to urinate freely some hours afterward and fourteen days after the operation all catheterization was given up.

Dr. Bottini said that he had examined Dr. Freudenberg's modifications of his apparatus. They concerned especially the possibility of thoroughly asepticizing the instrument, and certain changes in the electrical connections and battery powers, and he considered them distinct improvements and recommended them to the profession.

Dr. Watson, of Boston, said that from his personal experience he did not think Bottini's apparatus applicable to all cases of prostatic hypertrophy. While it would be effective in the simpler cases of bar at the neck of the bladder, he hardly thought it would relieve the cases in which there was extreme prostatic hypertrophy. No amount of manipulative skill would enable one to direct the instrument so as always to come upon the offending prostatic hindrance.

Dr. Lavista, of Mexico, did not consider the Bottini procedure applicable to the cases of extremely large prostate. He thought that the relief afforded in such cases would be only temporary.

Catheterization of the Ureters.—Dr. Albarran, of Paris, read a paper on catheterization of the ureters in the male and female, and described a new instrument that greatly facilitates the manœuvre. With his apparatus he is able to introduce a rubber catheter supported by a sound of a calibre of No. 10 French. After the manœuvre has been repeated for some days a No. 13 or No. 14 may be introduced.

Lithotrity.—Dr. Herbert Milton, of Cairo, read a paper on this subject (see page 418).

Tumors of the Bladder.—Dr. Nitze, of Berlin, read a paper on the intravesical removal of tumors of the bladder. He described a new cystoscope for the employment of a snare under full light in the cystic cavity. Only benign tumors can be removed. For malignant tumors a more radical operation must be employed when operation is indicated. Small tumors that have for years been causing serious constitutional trouble from hemorrhage can be easily removed, and even reasonably large tumors can be removed piecemeal. In the speaker's experience this method has given much better results than *sectio alta*.

Dr. Watson, of Boston, asked to be allowed to correct the impression made by the paper of Dr. Albarran, that cutting operations for stone were the favorite procedures for vesical calculus in America. He was glad to see that French surgeons had so thoroughly taken up the rapid method invented by Bigelow and were carrying it out with such perfection.

Elephantiasis of the Testicle.—Dr. Le Dentu, of Paris, reported a case of elephantiasis of the testicle, hydrocele, lymphatic varicocele, and lymphangioma of the inguinal canal and of the pelvis due to the presence of filaria sanguinis hominis. The change of climate always arrests the progress of the filarial disease, he said, and he thought it probable that the use of electricity may be found to cause a retrograde process in the hypertrophied lymphatic tissues.

Pseudo-Cystitis.—Dr. Guépin, of Paris, for himself and Dr. Grandcourt, read a paper on this subject. They held that there is a series of diseases with bladder manifestations in which no pathological condition exists in the bladder. These have usually been diagnosed as cystitis, and it is only careful modern diagnosis that has differentiated them. The bladder symptoms in such cases are the result of nervous reflexes, principally from an affected posterior urethra, but they may also come from the anterior urethra, from the ureter, and even from the kidney. The result of the reflex nervous excitation brings on a congestion that aggravates the symptoms and makes the condition still more simulative of true cystitis. The diagnosis is often extremely difficult and depends finally on careful local examination. It is to be remembered that in cases of false cystitis the symptoms are always aggravated by intravesical medication.

Absorption by the Mucous Membrane of the Bladder.—Dr. Gerota, of Bucharest, showed by a series of microscopic plates that, while there was imbibition on the part of the mucous lining of the bladder, there was no real active absorption. Coloring matters were found to have penetrated between the cells, but they were not taken up by the lymphatics. Poisons such as strychnine might thus gradually and very slowly find their way into general circulation, but they were not really absorbed.

Spontaneous Fracture of Vesical Calculi.—Dr. Severeano, of Bucharest, reported a case of spontaneous fracture of a large calculus. He discussed the theories of the cause of the fracture, rejected the idea that it was due to active excessive contraction of the bladder walls, but thought it was much more probably due to the formation of carbonic acid within the calculous masses.

Prostatectomy.—Dr. Desmos, of Paris, read a paper on this subject. He regarded the hypogastric route the preferable one, as the surgeon has to grope less in the dark, can more readily diagnosticate the exact condition that causes the urinary difficulties, and is better able to judge what the indications for operation really are. In twenty-three prostatectomies he had successful results in thirteen, the patients recovering almost completely their urinary potency; in four cases there was distinct improvement in the urinary symptoms. In the midst of the new inventions for the relief of prostatism now so frequent, he believed that the old traditional procedures still had their place and that improved technique with modern methods made them often the operation of choice.

Fourth Day—Thursday, August 24th.

Gastric Operations.—Dr. Kader, of Breslau, read a communication on the operations on the stomach done in Mikulicz's clinic during the last fifteen years. There were seventy-one operations for non-malignant troubles of various kinds, with a mortality of 22.5 per cent. In all uncomplicated cases the mortality was but 8.4 per cent., while in uncomplicated cases of excision of gastric ulcers the mortality was but 4 per cent. In cases of carcinoma the total mortality was 21.6 per cent.; the mortality of uncomplicated cases was but 15.5 per cent. The mortality during the last two years had been a little higher than in that of the preceding thirteen years from 1882 to 1895, but this was due to the fact that much more complicated and difficult cases were now operated upon, and the circle of inoperable cases was constantly being narrowed.

Surgical Treatment of Graves' Disease.—Dr. Kocher, of Berne, read a report on his results in the surgical treatment of exophthalmic goitre. In all he had treated forty-three cases, which he divided into three classes: (1) strumæ vasculosæ; (2) atypical cases; (3) typical cases. In the six cases of vascular struma surgical interference by partial excisions and ligation of arteries had been uniformly successful. In sixteen atypical cases he had had thirteen complete cures and three improvements. In the typical cases he had operated in various ways. In three cases in which one-half the gland was removed, two were cured, one was improved. In three cases of ligature of the superior and inferior thyroid arteries on one side, two were cured, one was improved. In five cases in which two arteries on one side and one on the other were tied, four were cured, one was improved. In three cases in

which all four arteries were tied, two cases were cured and one proved fatal. The author formulated the following conclusions: (1) Graves' disease is due to hyperplasia of the thyroid and excessive function with presence of too much of its secretion in the system. (2) In the early stage of the disease it is possible to relieve it by surgical treatment. (3) The surgical treatment must be different for different cases, but the best method in general seems to be the removal of one-half the gland and the ligature of one artery on the other side. The operation is not an easy one, so that it will perhaps be best as a rule to excise the smaller half. It is in the early stage that the disease is especially benefited by surgical treatment, and it is consequently in this stage that the disease must be claimed as a surgical affection and come at once into the surgeon's hands.

Resection of the Cervical Sympathetic.—Dr. Thomas Joannescu, of Bucharest, read a paper entitled "Total and Bilateral Resection of the Cervical Sympathetic." He reported three cases of removal of the whole of the cervical sympathetic for exophthalmic goitre. The results were excellent. The exophthalmos completely disappeared and the other symptoms of the disease were almost if not entirely relieved. In twenty-eight cases of epilepsy he had also divided the cervical sympathetic and with excellent results. In fact, for epilepsy and exophthalmic goitre he regarded the total bilateral section of the cervical sympathetic as the only rational surgical interference. The immediate fatality of the operation ought in good hands to be absolutely nil. No after-effects that will inconvenience the patient are to be expected. As the possibility of resecting all three ganglions of the cervical sympathetic had been questioned, he exhibited the series removed by himself and preserved in alcohol.

Subcutaneous Extirpation of Lymphatic Glands.—Dr. Dollinger, of Budapest, read a communication entitled "Further Experiences with the Subcutaneous Extirpation of Tuberculous Lymph Glands in the Throat, Neck, and Submaxillary Region." He had employed in a variety of cases and with excellent results the subcutaneous method he described some time ago. With care the danger is no greater than with the open method and the resulting scar is so much less that patients readily consent to the operation. The greatest surgical cleanliness is absolutely necessary.

Harelip.—Dr. Severeano, of Bucharest, described his operation for this deformity. He splits the sides of the fissure into two portions, a mucous and a cutaneous one, and brings them together by separate sets of sutures. He thus avoids the loss of substance necessitated by the freshening process in all the other harelip procedures, and as the flaps to be brought together are thinner he secures more close coaptation and so lessens the prominence of the resulting cicatrix.

The evening session on this day was held in union with the section in neurology.

Brain Surgery.—Dr. Bergmann, of Berlin, read a paper on the surgical treatment of brain tumors. He reviewed the history of brain surgery and cerebral localization. Great as has been the progress, there still remains much to do. Diagnostic methods are still not sure enough to guard the surgeon against error. He had himself opened the skull for tumor without finding one. Such is now the perfection of surgical methods as regards asepsis, however, that in case of doubt a trepanation for diagnostic purposes in serious cases is justifiable. In about one out of ten cases operated on for tumor no tumor is found, and in one out of six cases operated upon, though the tumor has given definite symptoms of localization, its removal is impossible. Though he had spoken lightly of the operation, he would not be understood as denying its grave dangers, not alone during the operation itself and immediately after, but remotely from the pressure of the resulting cicatrix causing epilepsy.

Dr. Auguste Voisin, of Paris, reported a case of Jacksonian epilepsy treated successfully by craniectomy. The case was that of a young man of seventeen affected since the age of four with convulsive attacks beginning with a painful aura in the left arm. The number of attacks had become so frequent that he was unable to leave his bed. At Dr. Voisin's request Dr. Péan made a large craniectomy over the fronto-parietal ascending convolutions. The dura was found depressed, the pia was hyperæmic, the brain tissue seemed to be sclerotic. The result was eminently satisfactory. All pain in the left arm has disappeared, though there still occur at times certain slight involuntary twitchings. The patient has completely recovered his intelligence and his general health, and has gone back to work. It is now two and a half years since the operation. The patient has had but three attacks since the operation.

Dr. J. Lucas-Championnière, of Paris, read a paper on the same subject. He had done sixty-six trephining operations for non-traumatic cerebral lesions, or lesions of traumatic origin but very old, and twenty for fracture of the skull. He thought the cases of Jacksonian epilepsy with an absolutely localized lesion not very common. When definite lesions are found there are always, in Dr. Championnière's experience, besides the localized convulsions, localized paralyses, or contractures. These are in fact the best directing symptoms the surgeon can have. In cases of operation for epilepsy one must avoid having too narrow an operative field, for otherwise one runs the risk not alone of not finding anything but also of bringing no relief to the patient.

The Failures in Brain Surgery because of Faulty Diagnosis.—Dr. Oppenheim, of Berlin, read a communication with this title. He thought that the great desideratum now in brain surgery is not a better method of operation but more assured diagnosis. Brain localization is often most doubtful; the diagnosis of brain abscess from brain tumor is often almost if not quite impossible, yet a surgical operation for the one or the other condition is quite a different matter as regards immediate and remote results. Pressure symptoms are often deceitful, and a condition of cerebral poliomyelitis may simulate in all respects the localization symptoms of a tumor. It may be impossible even to diagnose the hemisphere in which the lesion exists, and reports of paralysis with the lesion on the same side of the brain are growing more frequent. The pressure against the skull on one side owing to the pathological condition present may by a sort of contrecoup be manifested more on the other side of the brain, either because the pressure is exerted more directly on the motor regions on the other side, or because of nutritional conditions or idiosyncrasy. Then a lesion on one side may be complicated by hydrocephalus on the other side. Finally the peripheral symptoms may be deceptive.

Dr. Doyen, of Paris, exhibited a set of instruments for the rapid opening of the cranium. They consist of a special boring machine with which the diploe is penetrated and then perforated with an olive-pointed tool, thus avoiding all danger of wounding the dura even when there are extreme irregularities of the cranial vault. He makes several apertures and then connects them by means of a saw making one thousand revolutions a minute, run by electricity and protected from injuring the brain or membranes by a metal director.

Dr. Bruns, of Hanover, read a paper on "Some

Specially Weighty and Practically Important Diagnostic Points in the Differential Diagnosis and Localization of Brain Tumors." The most difficult differential diagnosis is that between tumors of the frontal lobes and of the cerebellum. 1. Disturbances of equilibrium may occur in both, and so mistakes of diagnosis may easily be made as to tumors having their seats in either of these locations. Careful consideration of symptoms makes a differential diagnosis possible, owing to important special symptoms that occur with frontal tumors. 2. Homonymous hemianopsia is of little weight for differential diagnosis. When right-sided homonymous hemianopsia with alexia and optic aphasia is present from the beginning, we may conclude as to the presence of a tumor in the white matter of the left posterior lobes. 3. Tumors in the neighborhood of the central convolutions, especially in the frontal and parietal convolutions, on account of the pressure symptoms, often cannot be diagnosed from tumors of the central convolutions themselves. 4. The percussion signs and the sensitiveness of the skull with the presence of tympany or cracked-pot sound, when it is demonstrable with certainty and facility, are of the greatest importance for localizing diagnosis of tumors. Especially is this true when the percussion symptoms accord in their indications with the localizing general symptoms. In the difficult cases of differential diagnosis of the central convolutions and their immediate neighborhood evident percussion symptoms and localized tenderness may make a final and absolutely certain diagnosis possible. In these cases the percussion symptoms are much more significant than the localizing brain symptoms. Unfortunately these percussion symptoms and sensitiveness occur only when the tumor is very superficially located.

Dr. Lavista, of Mexico, read a paper on the results of surgical intervention for Jacksonian epilepsy and the necessity for its early employment. The efforts of surgeons to relieve cerebral disorders are satisfactory neither to themselves nor to the neurologists; he could not believe that the centres and regions of the cerebral cortex were definitely limited. They represent only the regions where there is the maximum of nerve force for a particular purpose. Besides, we know nothing of the superior and middle frontal convolutions. Notwithstanding a lack of exact knowledge as to localizing symptoms, however, the surgeon is tempted to interfere because otherwise the course of the disease is so hopeless. Our only resource under the circumstances then is a large opening in the skull at the time of operation, so that we may examine as much of the cortex as possible. In this way one is often able to find lesions in parts where no localizing symptoms could be expected. One thing more must the surgeon bear in mind in operations for Jacksonian epilepsy, and that is that the sooner the operation is done the better. The brain tissues acquire a habit or degenerate, and then operations do not give satisfactory results.

Dr. A. d'Antona, of Naples, read a paper on the remote results of operations for partial and general epilepsy. He believed that the remote results would justify the operation for Jackonsian epilepsy, though perhaps not that for general epilepsy. He wished to protest against the teaching that an exploratory trepanation was ever justifiable. He said the use of very large openings for diagnostic purposes was not to be thought of.

Dr. Joannescu, of Bucharest, presented a communication on temporary hemicraniectomy. He believed that with the present uncertain state of cerebral diagnosis and the absolute freedom from risk of aseptic surgery, a large opening in the skull was the only one that a surgeon should make. He did not agree with d'Antona in his condemnation of large openings, because, while it might seem conservative, it was really quite as risky to make a small opening as a large one, and in the latter event the chances of doing good were greatly increased.

Dr. Kocher, of Berne, read a paper on the traumatic origin of Jacksonian epilepsy and its non-occurrence after surgical interference. He had had in the last ten years eighteen cases of complicated skull fractures which had been carefully treated surgically, but in which there must have followed the formation of extensive cicatrices. All of them had been carefully followed and in none had there been any epilepsy. There would seem to be some other cause necessary besides the mere presence of a scar to account for the epilepsy.

BRITISH MEDICAL ASSOCIATION.

Sixty-Fifth Annual Meeting, Held at Montreal, Canada, August 31, September 1, 2, 3, 1897.

(Special Report for the Medical Record.)

SECTION IN SURGERY.

(Continued from page 430.)

First Day—Wednesday, September 1st.

The Accurate Measurements of Spinal Curvature.—Mr. R. Tait McKenzie read a paper with this title, in which he stated that the points to be noted in studying this disease were the difference in level of the shoulders, of the points of the scapulæ, and of the iliac crests, the deviation of the spinous processes at all levels, and a general outline of the hips and shoulders. We should also find the amount and show the nature of the rotation. He referred to many plans or devices for measuring the deformities. Mr. Bernard Roth had an ingenious device, consisting of a plate of pure tin with which diagrams were made. He preferred a device of his own, which consisted of a fixed horizontal iron stand into which a rigid upright rod is screwed firmly. To this rod two arms are attached by collars that can be moved up and down or clamped by thumbscrews. The lower arm passes behind the patient and clamps the hips, preventing any side movement. The upper arm passes in front of the patient and fixes the shoulders. To the collar of the upper arm is attached by a hinge a plate, to which a pantograph is screwed, set so as to make a tracing reduced to one in four. The paper, which is stretched over this plate and held by clips behind, is ruled in eight-inch squares. Hence a line passing vertically through eight squares or one inch would represent a distance of four inches covered by the pointer tracing the deformity.

Mr. Christopher Heath, of London, said that instruments had been used in the most reckless way, and were not only of no value but did positive injury. He had the opportunity of observing many of these cases treated by muscular exercises, and found that they had done well.

Dr. Gibney, of New York, said that until he had noticed Mr. Roth's method, he used to employ apparatus for the treatment of lateral curvature, but since that time he had almost entirely given it up and found that his successes were infinitely better. He found one or two difficulties in carrying out the method. One was the difficulty of keeping up the patient's interest in the gymnastics under the supervision of the speaker himself or his assistant, the friends maintaining that these exercises could be done as well at home. He still used the instruments in cases of stu-

pid girls who absolutely could not be compelled to carry out the serious treatment of their cases. He thought Dr. McKenzie's apparatus for tracing the best he had seen and that Mr. Roth's results were very satisfactory. He was very much impressed when in England with the amount of pain complained of by patients suffering from lateral curvature. This was not the case in the United States. Perhaps the reason of this was that the cases he saw here, being chiefly among the poor, were more inured to pain than the cases (mostly among the well-to-do) which he saw in England.

Dr. Ketch, of New York, said that he had made an analysis of two hundred and twenty-nine cases. Fifty-two were cases of deformity which had existed before the fifth year. He claimed that much better results could be obtained if cases could be seen early. He said it was very difficult to get patients to carry out the instructions regarding the exercises. The cases of lateral curvature divided themselves into two classes, namely, those in which the extrinsic muscles were affected, and those in which the intrinsic muscles were affected. In the first class there was usually no irritation and there was little difficulty in carrying out the treatment. Those in the second class were very troublesome to treat.

Dr. Lee, of Philadelphia, said that an early diagnosis should be made in these cases of lateral curvature. He had found that the lumbar region was the first affected. If the deformity is allowed to go on until the dorsal region is involved, perfect results cannot be hoped for. He fully concurred with Mr. Roth as to the value of exercise and posture in these cases.

Second Day—Thursday, September 2d.

Gunshot Wound of the Spinal Cord.—Dr. George A. Peters, of Toronto, then followed with a paper on this subject. He stated that the causes of death in such cases are shock, hemorrhage, and septic processes, while the factor which most largely determined the rate of mortality is the proximity of the cord lesion to the brain. Cases of this nature in civil practice are very infrequent. Although there have been cases in which after complete transverse lesion of the cord at various levels, the individuals have survived for periods varying from one to twenty-six years, yet it may be stated as a rule to which the exceptions are few that patients with such lesions die within a year of the injury. The determining causes of death are inflammation of the bladder and its sequelæ, bedsores and other trophic lesions, pyæmia, amyloid disease, and exhaustion. The speaker recommended median cystotomy as a routine practice in cases of this injury in male subjects, to imitate the short and straight urethra of the female, as the latter seems to suffer less from bladder symptoms. Dr. Peters then referred to the difference between the deep or tendon reflexes which are permanently lost in complete transverse lesions of the cord, and the superficial or skin reflexes which, as in a case narrated by him, may not only return but may even become exaggerated. The speaker believed that in the case of the skin reflexes the reflex arc remains intact and the exaggeration is accounted for by the overflow of sensation into motor regions in the cord, which are relieved of the natural inhibitory influence of the higher centres by the lesion; while in the case of the tendon reflex an influence is normally transmitted to the muscles to maintain their tone which is also interrupted by the lesion—hence the permanent loss.

The Advantages of the Absorbable Suture, Buried in Aseptic Wounds.—Dr. Henry O. Marcy, of Boston, read a paper on the suturing of wounds. He said that in a large minority of operative wounds made in healthy structures suppuration in some degree still occurs. The surgical technique is complete for making a wound aseptic, but the difficulty is in maintaining it in this condition. The cause of this is definite, viz., an open wound. The remedy is equally definite: "Hermetically close the wound and seal at the time of operation without drainage." The drainage tube was then discussed with disapproval. The most usual source of operative infection, he said, comes from the surgeon's own hands. Careful hand disinfection is of much greater value to the patient than a marble hall for an operative amphitheatre. The speaker then discussed the varieties of suture material, and stated as his opinion that all aseptic wounds should be closed by absorbable sutures under the most careful of aseptic conditions and that subcuticular sutures should be used for the coaptation of the skin. The carefully disinfected skin should be dried, the edges carefully coaptated and sealed with iodoform collodion, reinforced by a few fibres of absorbent cotton. Dr. Marcy condemned catgut, not so much because of its difficulty of sterilization, as of its inherent defects, a large share of its strength resulting from its being twisted and kept dry; when wet it is elastic, unreliable in knotting, and untrustworthy. Before twisting and drying it is a very thin flat band of connective tissue, the fibres of which cross obliquely, and is not unlike a very delicate silk fabric cut upon the bias. The advantages to be obtained from the use of connective tissue as a suture material are apparent, not only because it is absorbable, but because it is first surrounded by leucocytes, which little by little invade the suture. As absorptions go on, these cells are changed into connective-tissue corpuscles, and the suture material is thus more or less completely replaced by a living band of connective tissue. Formerly Dr. Marcy used tendons from the moose and caribou, but subsequently convinced himself that the tendons taken from the tail of the kangaroo were greatly to be preferred, since they are smooth, even, in any variety of size, have never been subjected to decomposition, and are therefore much less difficult of sterilization, while in strength they exceed any other animal structure. When properly chromicized they hold in the tissues about three months.

Coaptation and fixation at rest, with as little force as possible, of like structures, are the aim of suturing. Suture material more than required to secure this purpose is detrimental. The interrupted suture is faulty in that it holds at only the single points of insertion, and each stitch, moreover, requires a knot which is slow of absorption. The continuous suture requires but a single knot, and undue constriction is less liable since a compensation occurs, equalizing the force applied to the entire suture. Like structures as far as possible should be joined, fascia to fascia, muscle to muscle, etc. When coaptation has been accurate there are no pockets left for the retention of fluids, and as a consequence no drainage tube is required. As a rule, fatty structures should not be sutured, since aseptic fat necrosis not seldom results. Coaptation of these fatty structures follows the fixation of the muscles, fascia, and skin. The over-and-over glover's stitch is faulty, in that it unduly constricts the inclosed tissues. The speaker applied the suture deeply from side to side; the needle is introduced parallel to the long axis of the wound, and hence it is called by him the "parallel suture." The needle is introduced exactly opposite to the point of emergence of the preceding stitch, and when it is drawn upon the surfaces are evenly coaptated, and the suture is deeply implanted in healthy tissues, crossing the wounded edges at right angles. The subcuticular suture is effected in precisely the same manner, and the wound is sealed.

Conclusions: An aseptic wound thus closed with buried aseptic tendon sutures will remain aseptic, and in well-vitalized srtuctures will be followed by primary union. No expensive and troublesome dressings are required. The subsequent nursing and care are very greatly diminished. The anxious foreboding of the surgeon "lest something go wrong with the wound" is avoided. No stitches are to be removed, reducing greatly the dread and anxiety of many patients. Safety is greatly enhanced and the period of convalescence is shortened. When the work has been done with care, often the resultant cicatrix is scarcely visible—a matter of much importance in some portions of the body.

Some operations hitherto impossible have been rendered feasible by the use of the buried absorbable suture, *e.g.*, the reconstruction and reformation of the inguinal canal in the male, upon which is dependent the cure of hernia. It was for the cure of hernia that Dr. Marcy first used buried animal sutures in 1870. He is now, he said, in his fourth hundred of hernia cases, and has obtained a permanent cure in over ninety per cent. of the entire number, without a single death.

In laparotomy the permanent closure of the abdominal wound, without subsequent hernia, is rendered almost certain by the use of aseptic tendon sutures.

Traumatic Aneurism of the Internal Maxillary Artery, Treated by Ligature of the Common Carotid.—Dr. Langley Brown reported a case of this kind. The patient was a man who had been kicked by a horse. He was semiconscious on admission to the hospital, perhaps suffering from shock, and bleeding profusely from his right cheek, right ear, nose, and scalp. The right side of his face was much swollen, the right eye being completely closed, and the swelling extended half-way down the neck. The lower jaw was found to be fractured on the left side close to the symphysis, and on the right side through the neck of the jaw. Crepitation was also detected over the right malar bone. The temperature rose to 100.2° F. The next evening it fell to normal, and remained so until about the eighth day, when it registered 101.8° F., and five days later 104.6° F. During the next three days the swelling slightly decreased. On December 5th the temperature rose again and fluctuation was detected in the neck, from which six ounces of pus was evacuated through incision. On the thirteenth day a copious hemorrhage took place from the incision. The swelling now increased and on the 15th distinct pulsation was detected on the right cheek. On examining the mouth the soft palate was seen to be greatly depressed on the right side and congested, and pulsation was easily felt. On the 24th he had slight hemorrhage from the mouth, and on the 26th a more copious hemorrhage. Mr. Brown decided to ligature the carotid. On the third day after the operation the patient passed fæces involuntarily, but since that time he has had perfect control and made an uninterrupted recovery.

Umbilical and Epigastric Hernia. — Dr. A. S. Garrow, of Montreal, reported a case of this kind. He had found but one similar case on record. In this case the contents of the supra-umbilical protrusion consisted of large and small intestines, cæcum, with appendix and omentum, the latter being spread out so as to form a more or less complete sac. There were adhesions, and the hernia could be reduced only with difficulty. The umbilical hernia was small, sausage shaped, and contained but a single loop of small intestine, which was not adherent and was very readily reduced. The lesson he had learned from the case was that as in such cases it was impossible to recognize the double protrusion before incision, after opening the main sac and replacing its contents, a careful search should be made from within to determine whether any other hernia existed, before proceeding to remove the adipose tissue. The speaker's case was that of a woman who had been married twenty-one years, and had had three children. Some months after the birth of the third child, a small lump made its appearance about one inch above the umbilicus. This gradually increased in size until three years ago, and since then had grown rapidly. The principal symptoms were abdominal pain, a dragging-down sensation, and later disturbances in digestion. The tumor was irregularly hemispherical, freely movable, soft and doughy in some parts, but tense and elastic in others, irreducible, distinctly lobulated, somewhat tender on pressure, and palpation occasionally elicited gurgling sounds. The tissues above the part were very thin, so that the outline of the contents could be readily distinguished. By an elliptical incision the sac was reached and opened at its upper and left side. The contents were with difficulty disentangled, and reduction could not be effected until the opening had been enlarged upward about one and one-half inches, and then only with difficulty. On lifting up the mass preparatory to moving it, a gurgling sensation was detected, and upon dissection toward the middle line about two inches below the lower border of the upper opening, another sac, one and one-half inches in diameter and about three and one-half inches in length, was discovered, which on being opened was found to contain small intestines, was not adherent, and was readily reduced. The edges of both openings were freshed and brought together by stout catgut sutures. The patient made a good recovery.

The Operative Treatment of High Cancer of the Rectum.—Dr. James Bell, of Montreal, opened the discussion on this subject. It is only twelve years, he said, since the removal of diseased middle and upper portions of the rectum has become practicable through the introduction of Kraske's operation. As to the frequency of this disease, Mr. Sutton says that of every one hundred cases of carcinoma of the intestine, seventy-five occur in the rectum. The same rule applies here as in cases of cancer of the breast, that early and complete removal of the growth and of the contiguous glands has made possible many cases of cure. In no case had the speaker seen an absence of involvement of the glands. The reason the disease progresses so far before discovery is that there are no early bad symptoms. Even later, when loss of flesh occurs with irregularity of the bowels, flatulence, etc., the disease is not often suspected. It is only when symptoms of autointoxication, with sanious or mucous discharges from the bowel, occur, that an examination of the rectum is made and reveals the true condition of affairs. Operable cases are: (1) Those in which there is a chance of removing the whole mass with permanent cure; (2) those in which, though the mass is removable, the probability of recurrence is strong. In still another class, in which there is no hope of removal, inguinal colotomy should be done. The routes chosen for operation are: (1) From the abdomen; (2) through the sacral region; and (3) in females through the vagina. The second is the one most generally applicable. The line of the third sacral foramina is the upper limit of the incision. The rectum is exposed by one of the osteoplastic methods. The author generally adopted the Heinecke incision. He believed that a preliminary colotomy was necessary. This enables the operator to estimate the amount of glandular involvement; free evacuation and cleansing of the bowel are thus made possible, and, should a permanent artificial opening become necessary, the inguinal opening is much better than the sacral one. The essentials to successful resection are a clean field of operation, free descent of the proximal end of the bowel without tension, and careful su-

turing. The speaker thought that there was quite an unnecessary dread of bringing down the upper segment of the bowel for fear of sloughing. The danger was rather of pulling and stretching and otherwise depressing the blood supply. If the mesorectum and mesocolon are carefully snipped at some little distance from the wall of the bowel, the rectum can easily be brought down several inches without danger of sloughing. After suturing the cut extremities of the bowel through all their coats, Dr. Bell invaginated the proximal into the distal end and applied a row of sutures through the serous and muscular coats. He thought it was unavoidable to open the peritoneum in high operations on the rectum, but this was not to be feared if the opening was afterward closed with sutures and the site of the wound was properly dressed and drained. The question as to when the colotomy wound is to be closed depends upon the completeness of the restoration of the continuity of the bowel and upon the probability of recurrence. The operation is not without considerable danger as there are always more or less shock and hemorrhage connected with its performance. Statistics, though at all times very unreliable, show that the average rate of mortality after the operation is not greater than twenty per cent., and that ten per cent. or twelve per cent. of the patients remain well and without recurrence for four years. Dr. Bell concluded his paper by narrating briefly the history of three cases of cancer of the rectum, on which he had operated since June, 1896.

Dr. C. B. Ball, of Dublin, said that he did not perform an osteoplastic operation, but removed the lower segment of the sacrum entirely. In the osteoplastic and his operation the statistics showed that the mortality had been higher, but that may have been due to the greater extension of the disease in the cases they had undertaken to operate on. He believed the perineal route should be discarded, except, of course, in those cases in which the anus was involved. The best recoveries in these cases were those in which the tumors were freely movable. As preliminary to the operation he usually gave purgatives for several days, together with rectal enemata, to insure thorough cleansing of the bowel. Then he used a two-per-cent. solution of creolin to wash out the bowel, and then gave opium to prevent peristalsis. One danger that had been pointed out was that of sloughing of the parts. This could be avoided largely by care in manipulation. The parts should not be too tense and should not be pressed upon. He reported seventeen cases, with sixteen recoveries, from the preliminary operation. He thought that we should operate even when the cancer was high up and the glands were involved, for present relief. He preferred this operation to colotomy. In two of his cases, of ten and eleven years' standing respectively, there had been no recurrence. He thought the prognosis depended largely on an early diagnosis, for in the early stages of the disease the operation was very satisfactory. He would advise against operation if the tumor was immovable.

Dr. W. W. Keen, of Philadelphia, said that all parts of the digestive tract were now in reach of surgical treatment, except a part of the œsophagus. It was only of late years that operation for high cancer of the rectum had been attempted. There was no doubt that Kraske's operation was of great importance and offered relief to many sufferers. Even when the glands were considerably involved he had found that patients improved very much. He did not think the osteoplastic method was at all necessary. It was his custom to remove the coccyx and the adjoining portion of the sacrum, but he differed from Dr. Ball and agreed with Dr. Bell as to the advisability of doing a preliminary inguinal colotomy, whether temporary or permanent. But the two operations should never be done at one sitting. The main object of this preliminary procedure was to prevent infection of the bowel. It was better to wait two or three weeks for the subsequent operation. Kraske's view was that a preliminary colotomy was to be done only in case the obstruction was so complete that this cleansing could not be effected without it. Dr. Keen thought the operation was necessary to unload and cleanse the bowel. In many cases the two cut ends of bowel cannot be accurately joined, or the whole lower bowel may have to be removed. Colotomy is of great assistance. In one of his cases the preliminary colotomy was so satisfactory that the patient refused the radical one for removal of the cancer. The recurrence limit is four years. He reported twenty-five cases. Of these, fifteen involved sacral operations, and there were twelve recoveries. Four of these had already passed the four-year limit. He believed in prolonged purgation. He had one case in which purgatives were administered for seventeen days, and still at operation the bowel was loaded. It was a good plan to examine the urine for indican, to show if the bowel was empty.

Dr. Ashhurst, of Philadelphia, said he was never very enthusiastic about operation for the removal of cancer of the rectum, although his views had become somewhat modified since visiting Montreal, having seen some cases in which it had proved beneficial. He thought if the disease had gone on to obstruction, it was better to make an artificial anus. He was rather in favor of doing the preliminary colotomy as a safeguard, for in some cases, if resection was done without his preliminary step, there occurred a low form of peritonitis, accompanied by vomiting, so that it was difficult to nourish the patient; whereas if there was an opening in the colon, this could be used for the introduction of food, saline injections, etc., without interfering with the rectum itself. He agreed with Dr. Ball that it was better to remove the coccyx entirely. He wished to speak of one procedure of a palliative character which he found very useful; that was a small, longitudinal section of the rectum through the mass of disease in the median line posteriorly.

(To be Continued.)

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

OUR OVERCROWDED PROFESSION—PROSPECTS OF THE PRINCE'S HOSPITAL FUND—THE OTHER FUNDS—NEW NURSING-HOME—IRISH MEDICAL LOYALTY—RENOVATION OF LONDON HOSPITALS.

London, September , 1897.

Some of the newspapers have been opening their columns, during this "silly season," to the grievances of our "overcrowded profession." The correspondence has been about as instructive and will have about as much effect as previous discussions at this season. It furnishes fair copy to fill the columns of the paper, and will at once be forgotten. If the newspapers would restrict the correspondence to the grievances of the army surgeons and would carefully examine them and editorially insist on the public services being conducted solely with a view to their efficiency, we should soon have a reform. But the ventilation of the heterogeneous difficulties of private practitioners does not seem calculated to enlist the sympathy of the public. The newspapers which pretend so far to feel for our "overcrowded profession" are not ashamed to fill their columns with the doings of quacks and to receive enor-

mous revenues from advertisements they know to be lying snares for the credulous sick.

The precise position that will be filled by the Prince of Wales' hospital fund has been the subject of no little speculation in medical-society circles. What it will do and what it cannot do are points that have been freely discussed—so freely that I may as well draw attention to some of the facts, if I do not venture to add to the numerous predictions being circulated. First of all, £150,000 has been raised as donations. How much of this may be regarded as likely to be repeated yearly? Some experienced managers estimate that one-fourth of the donors will probably continue their gifts each year, so that a sum of £37,000 may be expected from this source. Add to this that annual subscriptions have been promised amounting to £25,000. Thus, apart from a considerable reserve fund that has been raised, an annual income may be expected of more than £62,000—a better result than the Sunday fund. As the Prince's fund will not close until the end of the year, it is by no means certain that the £100,000 a year originally contemplated may not be obtained—a great triumph for the Prince. The sale of hospital stamps—a suggestion of the *Daily Mail*—has been enormous, and it is thought may reach a sum of £50,000; there is talk of "hospital stamps" being made a source of permanent income—an additional triumph for the *Daily Mail*.

What will be the result of the success of the new fund on hospital finance? The more sanguine spirits allege that it will be a simple addition to hospital income. I doubt this. My experience tells me that many have given to the Prince's fund what would in some form have reached some hospitals. It is true that the Sunday and Saturday funds have not been so much behindhand this year as many feared, but it is by no means certain that they will maintain their present position. Certainly the Sunday fund will not, unless it mends its manners—a point I have previously insisted on. I have advised every one my influence reaches to give to the Prince's instead of the Sunday fund, and I know others who are pursuing the same course. This must eventually tell, and if only the Prince's advisers avoid the rocks on which the Sunday-fund committee has injured its craft it will become the most popular of such agencies. Its expenses are expected to be only about two and one-half per cent., perhaps less, and thus the money contributed to it will go direct to the hospitals without a great deduction for salaries and so on.

It is feared in some quarters that the Sunday fund or the Charity Organization Society may get a finger in the distribution of the Prince's fund. It is to be hoped that neither may, for neither is to be trusted. Burdett's "Hospitals and Charities" urges that care will have to be taken to weigh the circumstances of each institution. In reviewing that book, the *British Medical Journal* wants to know who is to weigh? The idea, says your contemporary, of a central board as proposed by the Charity Organization Society, "has been very unfavorably received by the great hospitals and very hostilely criticised by Sir Henry Burdett himself;" and further adds that "no one [unless it be Sir Henry himself] will be satisfied to put the weighing machine into the hands of the Hospital Sunday Fund." As I long ago pointed out the shortcomings of that fund, I am glad to see how naturally your contemporary is led by the same facts to this view. Another co temporary, *The Hospital*, has attempted a defence of the distribution committee, but instead of calmly examining the case indulges in ill-timed and ill-tempered abuse of the critics of the fund and charges them with not taking the trouble to ascertain the facts. It is only a weak case that the plan of abusing opponents' attorney has been said to help. The truth is that those who complain of the partiality of the distribution committee are men who have an intimate acquaintance with the facts and personal experience of hospital management.

Two of our London hospitals have closed their out-patient departments for renovation and repair, and St. Mary's remains entirely closed until the end of this month. It is not much trouble to close out-patient departments, and never seems to produce inconvenience—a fact which might be used with some effect by the Hospital Reform Association. Of course, closing the wards requires special arrangements for transfer of those patients who are unfit for discharge, and is a serious trouble to the managers, though it gives a complete holiday to all the staff. The students of St. Mary's have been granted permission to attend the practice of the Middlesex Hospital until the reopening of their own wards.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 11, 1897:

	Cases.	Deaths.
Tuberculosis	152	111
Typhoid fever	19	7
Scarlet fever	77	7
Cerebro-spinal meningitis	0	8
Measles	49	3
Diphtheria	131	11
Laryngeal diphtheria (croup)	6	0
Chicken-pox	1	0

The Effect of Weather on Hæmoptysis.—Dr. Egger (*Correspondenzblatt für Schweizer Aerzte*, 1896, No. 18) bases his conclusions on information obtained from the records of the Basle Polyclinic, with the following results: the change from good to bad weather, from warm to cold or cold to warm seasons, corresponds with a change for the worse in the condition of many patients with pulmonary disease. In a large number of cases coughing is increased, and in some the cough causes an increase of pressure in the pulmonary circulation and thus favors hemorrhage. Changes in the weather which favor catching cold have serious consequences; so have epidemics of bronchitis, influenza, etc.

Health Reports.—The following statistics concerning yellow fever, cholera, small-pox, and plague have been received in the office of the United States Marine Hospital service during the week ended September 11, 1897:

[illegible]

		Cases.	Deaths.
[illegible]	September 1st to [illegible]	[illegible]	[illegible]

SMALL-POX—FOREIGN.

Bombay, India	August 3d to 10th	[illegible]	[illegible]
Para, Brazil	August 14th to 21st	[illegible]	[illegible]

YELLOW FEVER—UNITED STATES.

New Orleans, La., September 10th. Up to this date there have been 1 death and 12 cases reported as suspicious to the Board of Health.

Ocean Springs, Miss., September 10th. There have been 3 deaths and 2 cases of yellow fever.

Perkinston, Miss., September 11th. One case reported, contracted at Ocean Springs.

Pascagoula, Miss., September 11th. One case reported [illegible]

YELLOW FEVER—FOREIGN.

		Cases.	Deaths.
Para, Brazil	August 14th to 28th	[illegible]	[illegible]

CHOLERA.

Bombay, India	August 3d to 10th	[illegible]	[illegible]
Calcutta, India	July 24th to 31st	[illegible]	[illegible]
Osaka and Hiogo, Japan	August 1st to 14th	[illegible]	[illegible]

Medical Record

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Original Articles.

REMARKS UPON THE NON-OPERATIVE TREATMENT OF CHRONIC SUPPURATIVE DISEASE OF THE ANTRUM AND VAULT OF THE TYMPANUM.[1]

BY ALBERT H. BUCK, M.D.,

NEW YORK,

CLINICAL PROFESSOR OF THE DISEASES OF THE EAR IN THE NEW YORK POLYCLINIC AND SURGEON IN MEDICAL CHARGE OF THE DEPARTMENT FOR DISEASES OF THE EAR IN THE NEW YORK CITY [illegible] ASYLUM, ETC., ETC.; FORMERLY OF THE NEW [illegible] INFIRMARY AND THE FREE [illegible] OF THE EAR, ETC.

RECENT otological literature is full of treatises which deal with the subject of new operative methods for the cure of chronic suppurative processes in the vault of the tympanum and the mastoid antrum. Of these operations ossiculectomy (for those cases in which the disease is limited to a small area within the tympanum) and the so-called Stacke's operation (for those in which the antrum is also involved) are the two representative types. It is not necessary here to enter into any further details regarding these operations or to discuss their relative merits. Suffice it to say that both of them have passed the probationary stage and are now generally accepted by otologists as safe and effective surgical procedures for the cure of the pathological conditions referred to above. Conceding, therefore, as I do, the value and the safety of these operations, I am nevertheless disposed to believe that they are resorted to in many cases in which the simpler cleansing methods would be found to be quite as effective in curing the disease. I should perhaps qualify this remark by stating that it has reference mainly to cases which are seen in private practice. In the treatment of infirmary patients it is not often possible in our large cities to devote at least half an hour, twice or three times a week, to a single case; and, furthermore, our experience in New York has shown that infirmary patients cannot be depended upon to attend the institution regularly for treatment. But, unless these cleansing procedures are carried out in a minute and painstaking fashion, and at rather frequent intervals (two or three times a week), at best only a temporary amelioration of the disease will be secured. I am satisfied, therefore, that in dealing with this class of patients, the otologist is quite right in urging the operative rather than the non-operative mode of treatment. In private practice, however, the conditions are quite different. The surgeon can give to this class of cases all the time that may be required, and the patients themselves can be depended upon to be regular in their attendance. Then again many private patients object strongly to being subjected to an operation which requires the use of ether or chloroform as an anæsthetic, and which may keep them confined to the bed or to the house for several days. It is natural, therefore, that these individuals, when the situation is laid before them, should prefer to have the cleansing or non-operative method of treatment tried first. It is not in every case, however—be it clearly understood—that we can safely offer this choice to the patient. Symptoms may have already developed which point to an extension of the disease to important neighboring organs, and in that case we must recommend strongly the more radical plan of treatment by operation—either Stacke's or the regular mastoid operation. But in most, if not all, of the cases in which a simple ossiculectomy is performed, and in quite a large proportion of those operated upon by Stacke's method, no such threatening symptoms exist, and consequently we are at liberty to deal with the problem before us in a more leisurely manner. If, in such cases, the opening in the tympanic membrane through which the pus and other products of the disease escape into the external auditory canal is fairly large—say two or three millimetres in diameter—and particularly if it occupies a high position, there can be no question about the propriety of giving the cleansing method a fair trial. On the other hand, if the opening is small—perhaps not more than a millimetre in diameter—or if it occupies a low position, the simple cleansing method is more likely to fail. But even here a limited myringectomy may suffice to overcome this drawback and so place these cases on a par with the others. If, however, the pus finds an outlet through the membrana flaccida, it is better to proceed at once to an ossiculectomy (including, of course, a myringectomy). The necessity for a Stacke's operation or for a mastoid operation in this class of non-urgent cases becomes clear when both the cleansing method and a simple ossiculectomy (including the anvil as well as the hammer) have proved unsuccessful in arresting the foul-smelling discharge.

As regards the details of the cleansing method it is enough to state here that it consists essentially of only two steps, viz., the removal, chiefly by mechanical means, of all granulation tissue, cast-off epithelium, and detritus from the diseased tympanic cavity or antrum, and the destruction by chemical means of all pathogenic germs. Injections of hydrogen dioxide through variously curved glass tubes play a very important part in the procedure, not simply on account of the germicidal action of this fluid, but largely because the active effervescence, which at once takes place when it comes in contact with decomposing organic material, aids in dislodging the obstructing substances. When once the cavity has been cleared of all these and rendered aseptic, powdered iodoform or one of the more recent antiseptic powders (europhen, aristol, etc.) should be introduced in liberal quantity and allowed to remain there indefinitely. This, in brief, is the mode of treatment which I have termed the cleansing method.

In conclusion, permit me to bear further testimony to the beneficial results which are obtained from the faithful and persistent employment of this method. I believe that I do not exaggerate the truth when I say that in a decided majority of the cases treated in this manner the results have been successful: and I base this belief not simply upon my own personal experience, but also upon that of other otologists with whom I have had an opportunity to compare notes.

[1] Read before the section of laryngology at the [illegible] British Medical Association, at its meeting in Montreal, September 3, 1897.

SOME OBSERVATIONS ON THE MANAGEMENT OF EARLY PHTHISIS.

BY J. L. C. WHITCOMB, M.D.

PERSONAL observation and a clinical experience in a large number of cases, in a climate of rare efficacy in this disease, have led me to the conclusion that, given one hundred cases of incipient phthisis, ninety may be cured by proper climatic treatment, providing only such treatment be begun sufficiently early.

It is needless, perhaps, to say that on this proviso depends the whole question of the successful treatment of pulmonary tuberculosis to-day. It is no hyperbole to state that on this point hangs the fate of millions of lives. In other words, if for any cause this factor of treatment must be omitted in any given case of phthisis, the outlook for that case more than justifies the terror and gloom which this dread malady inspires in the minds of men. Not that every case of phthisis thus left without the benefit of a proper climate goes on invariably to a fatal termination. The results of many autopsies give us reason to believe that a certain percentage recover without any treatment whatever.

In such cases the transient hypotrophy which allowed a slight invasion of the tubercle bacilli is soon recovered from. The reinforced cells rally to the rescue, and the enemy is soon surrounded and imprisoned in a mass of connective tissue, beyond whose protecting walls it may not pass. But these cases must necessarily be few; for, a foothold once obtained, the morbid products of germ activity tend still further to vitiate cell vitality already impaired below the point of successful resistance, and unless some adventitious aid be forthcoming the breach must become wider and wider until the organism succumbs. The antitoxin formed by bacillary life, and which tends to limit such processes in nutrient bouillon, seems unable to perform this function in the living organism. This fact is undoubtedly due to the blood and lymph currents, which dissipate the antitoxic principle throughout the system, fertilizing still further the soil essential to germ propagation and rendering phagocytic activity less potent. But this is digressing.

This period of incipiency, lasting from a few weeks to a few months at the longest, is the time and the only time when this disease can be attacked with any degree of certainty as to the final result. It is along this line of primary invasion that the battle must be fought, and lost or won, in ninety-five per cent. of cases. It is at this point that all the resources at our command must be brought to bear if the subsequent treatment of the disease is to be anything but a blind trusting to chance—a helpless drifting on to sure destruction. When this fundamental fact in the treatment of pulmonary phthisis is grasped in all its vital significance by the medical profession at large, then and then only will the apathy born of ages of failure give way to a healthy optimism.

While these facts are recognized in a general way, it has seemed to me that this critical period in the history of phthisis—so fraught with deepest interest to the patient—is not given the attention which its importance demands. In the early period of their disease, how many are told that they have "weak lungs; that it is only a cold, or bronchitis, or anything, in fact, but the dreaded truth?

I believe that all physicians must plead guilty to this weakness, not once, but many times. Frequently the friends are *participes criminis*, and insist that all knowledge of the real condition be kept from the patient. On what code of ethics can such practice be justified? The very life of the patient often depends on his having a true conception of his disease. No hard-and-fast rule can be formulated, but in a general way all persons over twenty years of age should be told their exact condition, while those under that age should have their family or friends as fully informed. It is safe to say that many lives have been sacrificed as a direct result of this moral cowardice of the medical attendant. This mistaken charity that would assume the added responsibility of shielding a patient from a knowledge of his disease is a very prolific source of harm in phthisis. This burden rightfully belongs to the patient and his family, and no one can reasonably ask the physician to carry it. It is a wrong, not only to the patient, but to the physician's better judgment and to the State which licensed him to practise. Let the patient face his condition at once and become familiar with it in all its bearings. This knowledge must come sooner or later; and the sooner he understands the seriousness of his disease, the better for all concerned. The mental shock and depression following such knowledge will soon give way before the hope that "springs eternal in the human breast," and we shall win the hearty co-operation of our patient in all our efforts to better his condition: also his lasting gratitude and respect, and not infrequently the longer continuance of his confidence.

While I have always held these views on this matter, my convictions have been strongly confirmed during my residence in Liberty, where my practice is largely among consumptives sent here for their health. It has been a matter of much surprise to me how few of these patients know their real condition and how many of them imagine that a few weeks in the mountains is going to make them well men and women again.

Unless there be some adequate reason which makes such a course inexpedient, I invariably set the facts of his case frankly before my patient, at the same time giving him every encouragement which such facts justify, as well as the benefit of every doubt. Having done this, I feel that half the battle is won. When the patient realizes that his return to health depends, not on a few weeks' vacation in the country, but on months and perhaps years of such residence; that it is to be a long pull and a strong pull for life—then he will make calculations accordingly and set his house in order. This means very much to persons of family or of business affairs. The mind is now no longer haunted by fears it dare not express, and the mental tranquillity which succeeds is highly conducive to physical well-being.

The one point which I wish to emphasize with all the force of which I am capable—the point the importance of which overshadows and minimizes every other consideration in the treatment of this subject—is that suitable climatic environment is the absolute prerequisite of any successful treatment of phthisis so far as medical knowledge can affirm at the present time. Of no other disease can this be said. In a nutshell, our only rational treatment is: 1st, an early diagnosis; 2d, a suitable climate. Give the patient the benefit of these, and we give him nine chances to get well to one against it. True, this is not recent knowledge: it belongs to medical classics. Yet one sees it so often ignored in practice that the conclusion is forced that it is not assigned its true importance relative to the numerous medicinal remedies, whose name is legion; many of which are forced on the profession by ambitious and designing men or through the agency of an impertinently aggressive commercialism.

Creosote or some of its derivatives, antiphthisin, nuclein, aseptolin, tuberculocidin, and many others are employed, one or all, perhaps, before the all-important subject of climate is considered, except in an incidental manner or as a means of last resort. In

the spirit that would try all things and hold fast to that which is good, I have tested fairly and without prejudice all of the above-mentioned much-vaunted "cures" for phthisis, and I do not hesitate to say that, with the exception of creosote, I consider them all of no practical value. Of creosote I shall have more to say.

What is needed is oxygen—the oxygen of pure dry air. This alone is a specific in early phthisis. It will not cure every case—no specific does that; but it will cure nine in every ten, providing enough of the remedy is utilized. And this means exercise in the open air to the point of fatigue. It matters little what form of exercise is used, so long as the lungs are expanded and the appetite is increased and rapid tissue metabolism is promoted. It is a great law of organic life that all strength comes from work; that is, the exercise of function, whatever that function may be. The muscle becomes strong from exercise; in other words, rapid metabolism. Likewise, every individual cell in the body must work or functionate up to a certain point, in order to maintain its physiological integrity. Otherwise fatty degeneration supervenes. Fat is the only tissue in the body that does not diminish and deteriorate for want of work; for it is itself potential energy. The theory has already been advanced that phthisis is but a process of fatty degeneration and that the so-called germs are but crystals of fat. While this position cannot be sustained, it is worthy of note that phthisis usually occurs in those who live and work largely indoors, who exercise their lungs the least and consequently have narrow chests. Also the usual seat of primary phthisis is at the apices, where functional activity is least. If a muscle is not used for a greater or less period of time, fatty degeneration results. Would it not be rational to infer that the same general law applied with equal force to lung tissue?

A degeneration here, however, would be modified by the presence of air, catarrhal inflammation, and tubercle bacilli always present, but which now find a favorable medium for their activity. Whether the primary condition be one of degeneration or not, all concede that there must be marked hypotrophy before the germs can step in to produce by their propagation and life processes the morbid entity known as phthisis pulmonalis. In other words, no hypotrophy no phthisis, germs or no germs.

Even if we admit that the bacilli are essential to the fully developed disease, although of secondary importance to the pre-existing hypotrophy, is this fact sufficient to constitute it a germ disease? If so, then it differs radically from all other germ diseases. It makes a vast difference in the treatment of this disease, according as we consider the germs or the hypotrophy as the main factor in its causation, and therefore the one to be attacked.

Perhaps one of the strongest arguments that can be advanced in favor of the degeneration theory of phthisis is found in the far superior results obtained in treating it as such. If an organ or a muscle be degenerated, we restore its function by exercising it and thereby promoting its nutrition. We use electricity or massage, or by the voluntary use of a striated muscle. Applying this same principle of treatment to a degenerated lung gives results that far exceed those that follow treating it with germicides. At present the germ theory of phthisis is in the ascendancy, and it seems rather heretical and reactionary even to suggest anything to the contrary. However, I am inclined to think that "not proven" would be the verdict of by far the greater number of those who see the most of this disease.

Regarding creosote, I believe that in this drug we possess a remedy of undoubted value in all forms of tuberculosis and of special value in phthisis. Given to the point of tolerance, it seems capable of exerting marked curative properties, in some cases amounting almost to a specific action. There are but few persons who cannot take it in moderate doses, while many can take large quantities of it. My experience with creosote coincides with that of Sommerbrodt, Gutmann and Beaumetz, and others as regards the greater value of large doses. I also find, in common with Burlureaux, that it has a prognostic value. Those who can tolerate large doses are much more likely to recover than those who cannot, although the former may show the greater lung involvement—although I have seen one notable exception to this rule. A lady of about thirty years of age came under my treatment three years ago. She had a large-sized cavity in the right upper lobe, and at one time was very low. She rallied, however, and became a great walker, doing her twelve and fifteen miles nearly every day. She walked herself into excellent health and returned to the city about a year ago, where she works at her profession of typewriting. This lady could not take one drop of creosote without bringing on a severe diarrhœa. She tried it several times, always with the same result.

The following case exemplifies the more common experience:

Mr. K——, aged thirty, American, letter carrier; height, five feet ten inches; weight, one hundred and sixty pounds. Came under treatment one year ago with phthisis, second stage. He was taking one of the numerous preparations of cod liver oil with two or three minims of creosote to the dose. He had been gradually losing ground, although he had been up here in the country for two months. I at once put him on creosote in capsules, increasing the dose one drop each dose until he was taking three hundred drops a day without the slightest ill effect. His urine remained normal throughout, and his stomach and bowels were not the least irritated. His appetite improved immediately and he gained five pounds the first month of treatment. He was anxious still to increase the creosote, but I advised against it. Soon after this he had to return to his duties and I lost sight of him.

The writer has taken two hundred drops of creosote a day for a week at a time on several different occasions, without causing any gastric or bowel disturbance, but with the result of producing a large flow of colorless urine of low specific gravity but never containing any albumin or casts. He has taken one hundred drops a day for months at a time without anything but the happiest results in improved appetite and increased weight, and diminished cough and night sweats and fever and other symptoms resulting from tuberculous involvement of both lungs.

I consider it one of the safest medicinal remedies we can employ in phthisis. In rather a busy practice, in which I have used this drug quite extensively for a number of years, I have yet to see the first case in which the slightest damage has been done or anything but the most trivial disturbance to stomach, bowels, or kidneys has been caused. Of course, care is requisite and these organs must be watched. I have never seen a case of hæmoptysis caused by it. I did have one experience with creosote, however, which to me was unique.

Mrs. L——, aged twenty-eight, married, had a well-marked cavity in the left lung and some infiltration of the right apex. She had spent two years in a sanatorium in the northern part of this State, where she had improved for a time. Later, however, her disease became more active and she was advised to try Liberty. She had attempted to take creosote in small doses during the early period of her illness, but believing that

it disturbed her stomach had discontinued it after a short trial. She came here about eighteen months ago, but did not improve. After being here about three months, she consulted me and I advised her to give creosote another trial. It was with some difficulty that I finally induced her to begin it in small doses and gradually increase it up to fifty-four drops a day. This seemed to be the point of tolerance with her. Her appetite improved at once and she gained eighteen pounds during the next three months.

The peculiarity of this case which made it unique in my experience was this: Instead of the cough diminishing, as is usual, it grew continually worse until I finally stopped the creosote because of this distressing symptom. The expectoration also became more abundant and changed in character. It became more of a frothy mucus, such as results from a congestion of the lungs from overexertion or from inhaling some irritating matter. It was never blood stained, however. Auscultation showed harsh breathing and moist râles over an increased area surrounding the involved portions of lung. This indicated, to my mind, a congestion in and around these tuberculous areas. In spite of this she gained in every respect, and after stopping the creosote she held the ground she had gained, while her cough and expectoration diminished rapidly. For nearly a year now her disease has been quiescent. A slight dry "hack" occasionally reminds her, however, of the damage already done and of the necessity for continual care.

This case is of especial interest, as it may offer a possible explanation of the *modus operandi* of creosote in phthisis. Beaumetz claims that it produces congestion of the lungs, and may even produce hæmoptysis. The elder Loomis claimed that when phthisis was cured it was by a process of fibrosis, the tuberculous focus becoming sequestered by a wall of connective tissue and thus prevented from doing further damage. Koch suggested as an explanation of the curative action of tuberculin that it caused a zone of congestion around the tuberculous foci, promoting thereby the fibrosis essential to a cure. Putting all these facts and theories together makes it conceivable that creosote acts by producing a certain degree of hyperæmia around the diseased tissue, and thus aiding the conservative process of connective-tissue formation. It is possible that it is this property of creosote of producing the requisite amount of stimulation of the diseased tissues which makes it the agent *par excellence* in phthisis. This stimulation if carried a little farther would be destructive instead of constructive, pathological instead of conservative. It would seem that the failure of tuberculin as a safe and curative agent lay in the fact that it carried this stimulation of the involved tissue beyond the point of reparative hyperæmia, and produced in some cases rapid destruction and breaking down of the tuberculous deposits, overwhelming the system with the products of tissue decomposition or producing an eruption of miliary tubercle over extended areas.

Perhaps we would not be justified in regarding creosote as a specific in phthisis. Yet there is little doubt that it has an elective action on tuberculous processes wherever they may occur. I know of no more efficient remedy than creosote in tuberculous arthritis, osteitis, adenitis, struma, lupus, or, in fact, the local or general manifestations of the tuberculous diathesis in any form. In this, also, it resembles tuberculin.

Besides its general antituberculous properties, there is reason to believe that in pulmonary tuberculosis it is pre-eminently efficacious, owing to the fact that it is largely eliminated by the bronchial mucous membrane, it being an excellent expectorant and pulmonary alterative in other than tuberculous affections of the lungs and bronchi. This action is seen in chronic bronchitis, bronchiectasis, pulmonary fibrosis, whooping-cough, and in other diseases of the lungs.

À propos to this subject, the matter of sanatoria for the special treatment of phthisis arises. There is much said and written of late about the advantages of treatment in such institutions. Sanatoria for the treatment of phthisis are of comparatively recent origin. A quarter of a century would cover their history. Both the medical profession and the laity turned to them with high hopes that at last a distinct forward movement had been made in the treatment of this disease. It is needless to attempt to conceal the fact that these hopes have been shattered by the results thus far obtained. The yearly reports of these institutions, with their small percentage of cures, have been a sad disappointment to all who are interested in the subject; especially so when it is considered that only the incipient and most favorable cases are admitted. Occasionally, with blare of trumpets, it is reported that one or more have been discharged cured. But very little is said about the scores who are quietly turned out to die. That all who are thus turned out worse than when they entered do not die is against rather than in favor of hospital treatment. There must be something inherently and radically wrong in the system.

About two years ago a party of five, one male and four females, came to Liberty. They had all been in a noted sanatorium in this State, for periods ranging from six months to two years. The effect on their disease of their residence and treatment there had varied—sometimes worse, sometimes better; but on the whole it had tended downward, until they were advised to change climates. This they did by coming to Liberty. Of the five, one died within three months. She was in a dying condition, in fact, when she came here. The other four are well to-day. Their improvement began at once and progressed with hardly a setback. If anything, their gain was more marked during the winter months. This is usual, however, in my experience. It was the unanimous opinion of this party, as it was certainly my own, that they would never have recovered had they been obliged to remain in a sanatorium. The life had become so intolerably tedious and obnoxious that their chances for improvement were greatly diminished at least. As one of them expressed it, "Death would have been a blessing." I find that this is invariably the case with those who have once been in such an institution and live to tell the story. Usually nothing could induce them to repeat the experience.

Could such hospitals be opened to the hopeless and dying cases of phthisis, they would subserve a useful and humane purpose. But for the care and treatment of early cases it is my opinion that such institutions are not only useless, but diminish the chances of such cases by a large percentage. I have reached this opinion only after careful study of the yearly reports of consumption sanatoria in this country and abroad, and after long observation of phthisis treated within and outside such places.

The causes for this failure are not far to seek. The all-pervading and ever-present depressing effects of institutionalism and hospitalism on the mind cannot help being detrimental to bodily nutrition. In no disease does the condition of the mind have such a powerful effect for good or evil as in phthisis, and in no disease is it so essential that nutrition be pushed to the highest possible point.

To eat, to sleep, to awake, and to exercise by the clock and under orders may be all right in a military camp, but it becomes extremely monotonous to a person ill and who desires relaxation and diversion rather than too much discipline. Too much doctor, nurse,

and treatment, too much looking after and surveillance tend to produce a morbid self-consciousness and sensitiveness to slight symptoms, altogether disastrous to healthy bodily function. In habit of thought and disposition the patient soon becomes like the typical "rounder" of the city hospitals. She studies her symptoms and treatment, and discusses them with disgusting familiarity in season and out.

The constant and exclusive association with the sick in the dampening social atmosphere of a hospital more than neutralizes all the obvious advantages of such treatment. All exercise is apt to be half-hearted, perfunctory, and void of interest, thereby losing half of its value. The outdoor life prescribed soon becomes nothing more than sitting wrapped in furs on a veranda.

That far better results are obtained outside the uncongenial influences of the sanatorium I have seen demonstrated many times. About eight months ago seven young fellows, whose ages ranged from eighteen to twenty-seven, secured board in a private boarding-house near by. They all came from New York and vicinity about the same time, and all were suffering from incipient phthisis. At present they are all well and robust, and remind one more of a party of jovial college boys out for a vacation than they do predestined candidates for an early grave. They have all gained much in flesh, and their physical signs have so far disappeared that it is with difficulty that any trace of their former existence can be found. One of them, the youngest, a boy of eighteen with rather a poor physique and contracted chest, still shows a very few bacilli in the scant sputum. Otherwise his symptoms have all disappeared.

They began to improve immediately on coming here, and with the exception of slight colds occasionally, their progress has been uninterrupted. All of them took creosote in moderate doses; also cod-liver oil part of the time. But what I considered to be the main factor in their rapid improvement was the pleasantly active outdoor life continually followed. The walks and drives, the fishing, hunting, and skating parties, and frequent excursions into the country, all planned with some definite object in view, tended to produce that forgetfulness of self and bodily function so necessary to perfect nutrition.

No aimless and spiritless wandering up and down in glass-inclosed balconies; or curling up in furs in torpid inactivity, like a hibernating animal, on open porches, can produce such results. It may be all that can be done for advanced cases, but it is certainly bad for early phthisis.

Such results as above noted have been so common in my experience that I do not hesitate to repeat the statement made in the beginning of this paper, that ninety per cent. of incipient phthisis can be cured by climatic treatment—which means an active life, out-of-doors practically night and day, for sleeping-rooms should communicate freely with the outside. And this should be in a dry climate, at an altitude of from twelve hundred to twenty-five hundred feet. I often advise young men who cannot afford to board in the country long enough to get well to hire themselves out to farmers for their keeping, and save their lives thereby. Others I have advised to club together and camp out in tents for eight or nine months of the year. I have seen excellent results from such practice. Nearly all who suffer from early phthisis are able to work, and usually do work for a year or more before they are obliged to give up. If such persons could be given some outdoor employment in a suitable climate, they would not only be self-supporting, but would get well much sooner than if they did nothing. This is the most difficult feature of the whole problem—the inability, from lack of means, to take advantage of a more favorable climate. I can conceive of no other practical solution of the question of treatment of the masses of consumptives. If those who have millions to give to charity, instead of building palatial sanatoria with luxuriant appointments which tempt to idleness, would spend but a moiety of the amount in laying out farms and gardens and vineyards in proper climates, and let those whom they would benefit do the work on them, they would not only enjoy the blessings of giving, but would have the satisfaction of knowing that their beneficence had been a benefit instead of a detriment to the recipient. At present there is much money being expended, and much thought and ingenuity are being employed in devising sanatoria that shall be perfect from a hygienic and sanitary point of view. It would seem that of all things beneath the sky that a consumptive needs, four walls to shut out the life-giving sun and oxygen would be the least indispensable. While

"Walls do not a prison make,

they go a long way toward making the sepulchre of the victim of early phthisis. Give him the broad canopy for a roof, plenty of exercise and good food—largely albuminous—in a high, dry climate, and we may almost literally in this disease—

"Throw physic to the dogs."

The colonization scheme suggested above might appear rather utopian at first. Yet I believe it is feasible, and in my opinion it is ideal. There are large and fertile areas in New Mexico and Colorado, also in this State, where the climate is all that can be desired. Thriving communities, villages, and even cities might be built up, and the whole commonwealth be benefited; while thousands could work out their destiny under conditions favorable to life and health.

In the further management of phthisis I have seen great benefit derived from cold sponging every morning, followed by a vigorous rubbing down with a coarse towel. It has a general tonic effect, and gives a feeling of exhilaration and a sense of well-being which nothing else will produce. Pulmonary gymnastics, the use of chest weights and dumbbells, also do good service in increasing the breathing-capacity.

GASTRO-JEJUNOSTOMY IN GASTRECTASIS.[1]

By A. H. CORDIER, M.D.,

[illegible]

The surgery of the abdomen, as it stands to-day, is a beautiful demonstration of surgical ingenuity and the application of methods approaching the exact, as practised by American and foreign surgeons. The peritoneum is as "sacred" to-day as of old, but modern asepsis has robbed this dangerous-to-invade sac of most of its bars to intrusion, and it is opened to-day by the painstaking, clean surgeon with very little danger. Dirty operations bring disaster to-day the same as in former years. The invasion of the peritoneum is not the only source of danger to the patient. The character and thoroughness of the work done determines the success or failure. The peritoneum is filled with hollow organs mostly, or in part, essential to life. These naturally contain myriads of pathogenic germs, and the opening of one of these organs is fraught with much danger unless the work is most carefully and exactly performed. An improperly applied stitch may lead to the loss of a life.

Most of the operations on the alimentary canal have so far been done as immediate life-saving procedures, and the chances of recoveries are not so great as in the class of cases that I propose to deal with in this arti-

[1] Read by title before the Missouri State Medical Society at St. Louis, May 20, 1897.

cle; that is, operations having in view comfort giving first, and later prolongation or saving of life.

While gastrectasis is in a great majority of cases due to some form of pyloric stenosis, there are other cases in which there is no constriction of the pylorus. The most frequent cause of pyloric stricture is cancer, yet it must be remembered that dilatation of the stomach is a chronic slow process, and it is rare that the patient survives the disease a sufficient time to permit the stomach to become dilated. In malignant cases, as a rule, the contents of the stomach are vomited before fermentation from retained food takes place, both factors in the production of gastrectasis. In the majority of cases dilatation of the stomach is not due to the presence of a malignant disease. Nature, in her imperfect work here as in many other localities, leaves a condition not directly dangerous to life, but a menace to comfort and health primarily; secondarily, the imperfect repair, or rather the results of the healing, leave a condition acting as a bar to proper digestion and assimilation, thus leading to retention, fermentation, and gastrectasis, with all the train of symptoms of a dilated stomach. The amount and character of the contents of an aggravated case of gastrectasis are surprising. Even gallons may be evacuated in rare instances. Articles of diet ingested months before, such as prune or grape skins or orange peeling, may be found very little changed.

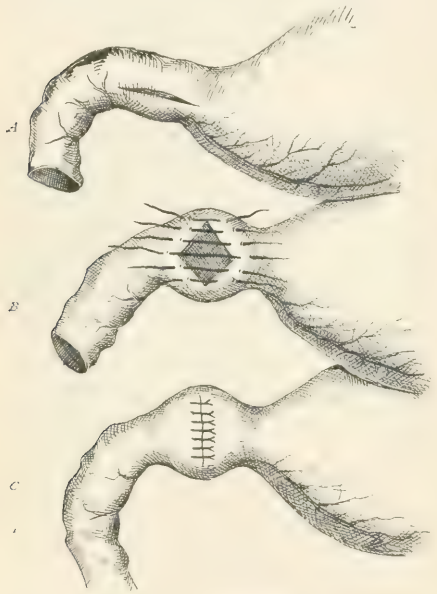


FIG. 1.—Pyloroplasty.

In dealing with the pathology of the abdomen the all-important question of diagnosis must not be lost sight of, as under the guise of the "justifiable exploratory incision" too many abdomens are opened by men who should be diagnosticians as well as mechanics. The diagnosis of the exact pathology and its source can, as a rule, be made in a case presenting symptoms of a pyloric stenosis, as practically only two conditions give rise to a stricture in this locality, one being benign (ulceration) and the other malignant. By far the majority of the cases will have a benign (ulcerative) origin, as the process of dilatation is a slow or gradual one, and will give the usual history of a gastric ulcer.

Movable right kidney, while giving rise in quite a percentage of cases to gastrectasis, does not produce that variety characterized by a persistence of the symptoms (the cause being intermittent), such as is noticed in cancerous or benign stenosis.

In a large percentage of the cases presenting themselves to the surgeon, the usual methods of irrigation, electricity, massage, dieting, etc., will have been tried with either no beneficial results or simply a retardation of the inroads of the condition on the patient's general health. Such results being obtained after months of careful handling, patients will tire of any temporizing procedure involving so much annoyance and self-sacrifice and promising so little in the way of a cure, and will gladly accept any method of dealing with their cases, having in view a permanent relief from the treatment and a fair promise of a cure of diseases from which they suffer.

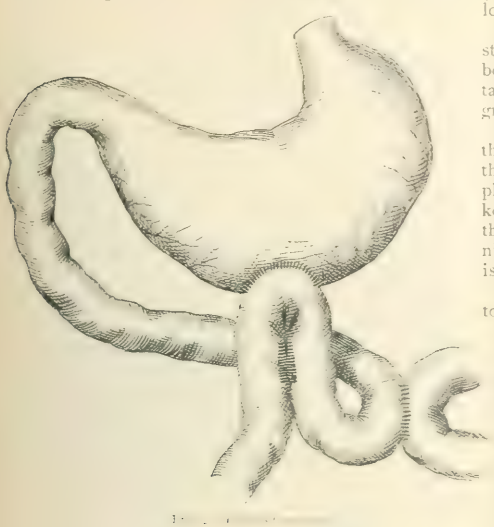
In any form of pyloric obstruction the condition is a mechanical one, and the method of giving relief must be of a like character, *i.e.*, surgical.

Loreta's operation, introduced in 1883, has not demonstrated by time and a fair trial all claimed for it by its originator. Any operation having for its aim the permanent dilatation of a cicatricial narrowing of a canal must of necessity extend over a long period of time, and that, too, with frequent divulsions or stretchings. The history of all cicatricial tissue, especially when the process of healing extended over a large muco-muscular area, is to return to its contracted state after divulsion. This is notably the case with cicatrix of the pylorus following a healed gastric ulcer. The operation of Loreta is certainly not applicable to the closure of the pylorus due to malignancy.

Pyloroplasty, or the operation devised by Heineke-Mikulicz, is one that promises very good results. It consists in making a longitudinal incision on the anterior wall of the duodenum and stomach, in all about three or three and one-half inches in length. This incision is closed in a vertical direction, or transverse to the way in which the cut was made. By thus closing the wound a new pylorus is created, with its cicatricial tissue on its posterior wall. This is a very good procedure, but is attended by unnecessary difficulties to be encountered by the surgeon and dangers to which he is unwarranted in subjecting the patient. Time is an important factor in the success of any abdominal operation, and especially is this true in the case of patients much debilitated from any cause. Many of these patients are much run down as a result of the prolonged suffering, lengthened starvation, and chronic poisoning from decomposed food, etc. Much surgical time is occupied in doing a pylorectomy or a pyloroplasty (Heineke-Mikulicz).

The muscular coat of the stomach in gastrectasis is first thinned by the dilatation, but still retains more or less of its contractile power. The organ under some circumstances is capable of making an approach to its natural size in its efforts at the expulsion of its contents through the pylorus or the œsophagus. Later the organ becomes permanently dilated, with thickened walls in an atonic state, with very little power for self-emptying. The pyloric and duodenal fixation is at a much higher point than the bottom of the sacculated stomach, hence the inability of the stomach to empty itself. Any operation having as its object the relief of this distention and retention must be made with a recognition of the above facts, and a site selected for the opening near the dependent portion of the dilated organ. This will at once be recognized as the only location for proper drainage. In reports of many cases of pylorectomy and pyloroplasty it will be noticed that the patient suffered with many of the old symptoms, and the stomach required irrigation and emptying with the tube, after-effects of the operation failing to fulfil the indications to be met by surgery.

Malignant disease of the pylorus, giving rise to an occlusion or partial closure, with a resulting dilatation, is best relieved by the operative procedure recommended in this paper. It must be remembered that when a malignant disease of the pylorus has advanced



to a period in its history when it produces a closure of the pylorus, it has also advanced beyond the limit of probable total extirpation; hence temporizing and comfort-giving surgery (by methods entailing the least immediate danger to life) is to be applied in the case. Pyloric resection of cancer, while a brilliant procedure, has not been crowned with such success, as far as cure is concerned, as would entitle it to be placed on the list of advisable and warranted surgical operations. This statement, I fully recognize, is at variance with the writing and practice of some of the world's greatest teachers and surgeons.

Dreydorff reports in a series of collected cases of pyloroplasty a mortality of twenty per cent. The same author tabulates (1894) one hundred and eighty-eight pylorectomies with a mortality of seventy-five per cent., the average duration of life in those recovering from the operation being only eleven months, Czerny's mortality from this operation being forty-one per cent. Any operation having an immediate mortality of fifty per cent. to sixty per cent., with an average duration of life of only eleven months following the procedure, should be banished from the list of legitimate surgical operations. Especially is this true when a less dangerous method is offered as a substitute.

In leaving a large cicatricial mass at the pylorus there is, as is claimed by some surgeons, a disposition to malignant degeneration at the site of the fibrous tissue, but this rare change is best averted by diverting the source of irritation (the passage of the stomach's contents) in a direction farthest removed from the scar.

Nomadic surgical procedures, or wandering surgical operations, usually result in half doing any or all methods tried. With a few surgeons the new and untried technique presents a seductive persuasion hard to resist, but the adoption of this technique is only too often disastrous to the patient. Surgical calisthenics ("keeping the hand in"), in inoperable cases of any nature, should be, and is as a rule, condemned by the majority of operators. It is useless and unsurgical to perform a pylorectomy for malignancy far advanced when it is known that nothing but a specimen and a little "surgical exercise" can be expected.

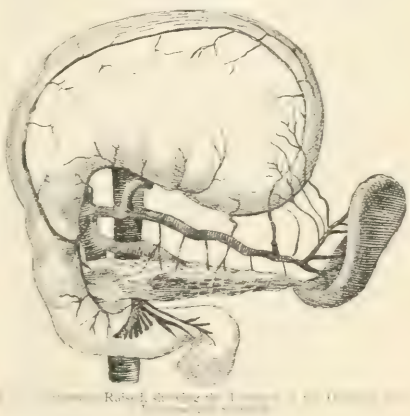
Surgical procedures of long duration on anæmic patients are fraught with much danger. Malignant disease of the pelvis soon induces profound anæmia and cachexia, both militating against successful surgical work. A pylorectomy or a pyloroplasty takes too long, as a rule, for a low mortality in anæmic patients.

Lucke, with the idea of keeping the intestinal peristalsis in line with that of the stomach, rotated the bowel and anchored it in that position. An important factor in the emptying of a dilated stomach is gravity, and not muscular action alone.

Baum's operation not only reversed the direction of the gut's calibre but made multiple anastomoses, so that the operation when completed resembled a complicated piece of plumbing, his idea being not only to keep the wave of the intestine in a direct line with that of the stomach, but to prevent the bile from running into the stomach. His operation, here illustrated, is too complicated to be useful or to be adopted.[1]

I have performed the operation of gastro-jejunostomy five times, with five recoveries. A report of one of the cases will suffice to illustrate the history, technique, and progress of the case after operation.

Stricture of Pylorus; Gastrectasis; Gastro-Jejunostomy; Recovery.—This man, seventy years of age, some eight years ago had an attack of hepatic colic, lasting several hours, followed a few days later by a jaundice persisting three or four weeks. He soon regained his former good health, and retained it until two years ago when he had another colic attack, not so severe as the first and not followed by jaundice. Two years ago he began having more or less pain and uneasiness in the epigastrium, especially noticeable after eating. After two or three months of this uneasiness he began losing flesh and had occasional spells of vomiting. No blood was vomited at any time. When I first saw him he had not been able to retain or digest much solid food for several months and was greatly emaciated. From his former weight of two hundred and forty pounds he was reduced to one hundred and thirty pounds. His appetite was fairly good, and liquid nourishment was taken with a relish. Solid food caused pain and nausea until relieved by vomiting. Upon examining him I find that he is greatly emaciated and has a "swarthy" look, not exactly a malignant cachexia. Pulse and temperature normal. Examination of the abdomen reveals a greatly dilated



stomach, its peristaltic action being plainly felt through the thinned abdominal parietes. No pain on pressure in the region of the pylorus. Here an unnatural sense of resistance can be plainly and distinctly made

City.

out, covering an area about as large as the palm of the hand, or smaller.

A diagnosis of a malignant stenosis of the pylorus was the most acceptable theory to me, yet a non-malig-

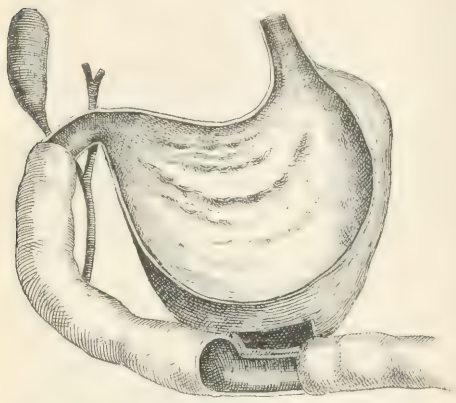


FIG. 4.—Showing the Location of the Openings after the Operation is Completed.

nant stricture had been diagnosed by a good diagnostician before I saw the patient. He was given a tonic of iron and strychnine, and nutrient enemas were ordered in the twenty-four hours. Under this *régime* he gained eight pounds in thirty days.

An operation was advised and assented to. A median incision, four inches long, extending downward from one inch below the xyphoid cartilage was made. A loop of jejunum was pulled into the incision, the transverse colon and the omentum were pushed upward, and a spot in the colon mesentery free from blood-vessels was selected and an opening made through it, thus exposing the posterior wall of the stomach. A portion of the latter being pulled through this opening, the most dependent part of the stomach should be selected for the site of the anastomosis. A puckering-string stitch was then put at the proposed site of the new opening, and a similar procedure was carried out with the jejunum. The opening in the jejunum was made first, and one-half of the largest intestinal Murphy button put in, the other half of the button being inserted in the opening now made in the stomach. The button was pushed together, closely approximating the jejunum and stomach serous coats. Care was taken that no fold of the colic mesentery was included in the grasp of the button. An additional "backing up" Lembert stitch was run around the button, and the operation completed by closing the parietal incision. The patient vomited for the first time ten hours later. The bowels moved on the second day. His convalescence was uninterrupted. He is alive to-day and has gained sixty pounds. He has had no return of any of his former symptoms of pyloric stricture or gastric dilatation. Evidently the stricture was a non-malignant one, as the operation was performed over two years ago.

The history (clinical) of these cases will vary only as the pathology is of a different character or severity. The operative technique is about the same in all cases. The cardinal point to recognize in operating is to make the opening in the stomach in a location that will drain the indolent organ.

I append the history of an aggravated case of gastrectasis following the cicatrization of an ulcer near the pylorus. The patient being an intelligent physician, I give his own description of his case:

"RAYMORE, MO., April 24th.

"*Dr. A. H. Cordier, Kansas City, Mo.*

"DEAR DOCTOR: In 1862, while in the army, I noticed first a pain at the pylorus. Continues after a few weeks from its inception. This was present in greater or lesser degree until about July, 1865, when I became much worse. Accompanied with pain were indigestion, flatulence, and a sense of distention. I was actively engaged in a large, laborious country practice, and kept up, although steadily losing weight. In October, 1865, I did an enormous amount of work, and in November was doing more. At 3 A.M. on November 9th I awoke, feeling faint and sick, and attempted to rise, when I fell off the bed, unconscious. My wife raised me up and I commenced vomiting. As I had eaten no supper, the contents of the stomach ejected showed pure blood. I bled and vomited by turns until death seemed ready to claim me then and there. I finally recovered, and for four days lay on an inclined plane to supply the brain with blood. In February, 1866, I resumed my practice, but the same old stomach trouble kept up—stomach full of gas, contents fermenting, and a general disturbance of the digestive process. On October 24, 1869, I had another hemorrhage, and in August, 1872, another, and the last. From this on I found that my stomach was constantly troubling me with the usual symptoms of acidity, etc. In 1888 I finally found that my stomach was dilated, and I would take a hypodermic injection of

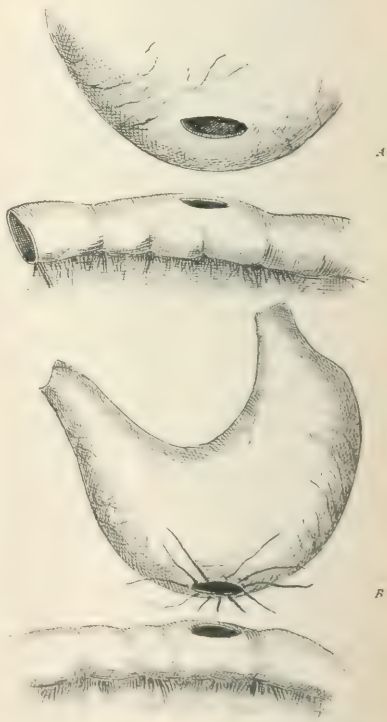


FIG. 5.—*A* Shows the Opening in the Stomach Made too High on the Wall of the Organ. *B* Shows the Correct Position of the Opening.

apomorphine to empty it, and then measure the contents. Four to six, and one time seven quarts was found. My friends used to say, 'Doctor, you are getting a big belly on you,' joking me. In 1890, seven years ago, I commenced the use of a stomach tube and

lavage. At that time the greater curvature rested on the pubes, and the epigastrium was flat or retracted, the stomach's contents, by force of gravity, pulling the stomach out of position. After washing the stomach I often used hydrozone in water, and still do when I want to have a general cleaning up of the organ. From 1890 up to date I have used the stomach tube twice every day, and sometimes three times, which amounts to at least five thousand times. The time I use the tube is before dinner and supper. I have formed the habit of lying on my right side at night, thus turning the stomach on end and the pylorus down, and by force of gravity and remaining so long in that position, the process of digestion is carried on, and the contents pass the pylorus. For the reason (I suppose) of loss of elasticity, due to dilatation, and the stenosis, the contents from morning to evening are not carried through, only in a partial way, hence the necessity of removing residuum before dinner and supper. Being a medical man, of course I looked closely after my case, and to the use of the tube lavage I owe my life to-day. At present I use three pints of warm water to wash the stomach, but I have tried to see how much the stomach would hold, and seven to eight pints will fill the stomach and drag it down to the pubes. My theory is that I had a bad ulceration at the pylorus, which finally healed, producing stenosis from cicatrization, and in turn this caused dilatation of the stomach with all its troubles. My weight fell from one hundred and fifty-five pounds to one hundred and seventeen pounds and I never have reached more than one hundred and thirty-five pounds since. If I am situated so that I am unable to wash my stomach I dare not eat, but must omit the meal until I can (except the morning meal). I often have pain now, mild in character, at the pylorus, but it is not continuous.

"I can truly say that had I been a layman I should have long ago been dead, for it is only by the unremitting care that I bestow upon myself that I am so well. Truly and fraternally,

"W. W. Johnston."

Deductions.—1. Cancer of the pylorus, even though removed, returns quickly, and always kills.

2. Pylorectomy is attended by a high mortality and is not a justifiable surgical procedure in advanced carcinoma of the pylorus.

3. Gastrectasis due to a malignant closure of the pylorus is best treated by a gastro-jejunostomy.

4. The operation as advised by Von Hacker best meets the indications.

5. It is not necessary to twist the bowel, in making the anastomosis, to prevent the bile from entering the stomach.

6. The anastomotic opening in the stomach should be at the most dependent point of the dilated organ.

7. The operation is attended by a low mortality.

8. In all cases in which marked dilatation of the stomach exists, accompanied by emaciation, pain, and invalidity, the operation of gastro-jejunostomy should be performed.

9. The relief of pain, due to the effort of the stomach to relieve itself, follows this procedure at once. The patient gains rapidly in weight and if non-malignant disease be present his former good health is restored.

Emergency Tracheotomy.—Waste no time in giving an anæsthetic. In diphtheria there is already a blunting of the sensibilities. In cyanosis and coldness of the skin the sensitiveness to pain is greatly diminished. In burns of the pharynx and larynx be ready to operate at the first evidence of sudden grave dyspnœa.

IDEAL ANÆSTHESIA.

By Rawlings Nichol, M.D.,

New .

Nowhere in the domain of surgery may graver injustice be done to the skill and reputation of the practising surgeon than in that class of cases which must be left unfinished, or, at best, in a condition far from satisfactory to the operator undertaking the surgical procedure, because of an unsuccessful narcosis.

There are in use two agents, chloroform and ether, under the influence of which most of all grave surgical manœuvres are conducted; in the remainder combinations of these, made with and without the addition of alcohol or the passing of oxygen or nitrous oxide through them, are employed. As yet we have no agent that is superior to the two playing the first rôles in the earliest history of anæsthesia; at present the real issue proposes a choice between them.

It cannot be doubted that if we measure future progress by our present improvement over measures in vogue but a few years ago, a safer and better anæsthetic will soon be at the disposal of the operator. There lurks in my mind a modest suspicion that when the realms of electricity shall have been somewhat more explored one may be derived from that source, enabling us to place our patient in a condition of unconsciousness, from which he may return to consciousness not shocked but rather exhilarated.

Chloroform.—The manner of administering chloroform or ether differs but little in the gross particulars. In the majority of cases chloroform is the best agent; in some it is the least dangerous, and in the hands of a skilled anæsthetist its risks are reduced to the minimum. A considerable series of experiments, including actual exhibitions, numbering over five hundred, with this agent, has impressed me with the accuracy of this conclusion. Different anæsthetists apparently attain equally good results with different agents; therefore, by leaving the choice of an anæsthetic to such an individual, the best results are most likely to obtain. In this connection, as the responsibility of a successful narcosis rests upon him, it is well to allow him to use such agent or agents as in his skilled judgment he considers best adapted to the case in hand. Practice develops a perspicacity which anticipates the peculiarities that mark types of individuals, and his training develops perceptive faculties which intuitively guide him to successful results. Dissimilar types require distinctly different methods; certain subjects present marked varieties of pulse, respiratory sounds, changes of color, degree of conjunctival reflexes, etc., and each has its peculiar natural significance. While the patient is being brought, or is "under" the influence of the anæsthetic, the practised anæsthetizer notices little gradations of symptoms easily escaping the observation of the occasional administrator, disregarding those which possibly alarm the tyro, while feeling grave anxiety where the casual and untrained observer thinks all is progressing favorably. Most of this knowledge is empirical, practical experience being the only possible method of obtaining it. To use but one favored anæsthetic, irrespective of the operation or type of subject, is now a thing of the past. An anæsthetic to commend itself to comparative consideration should possess these qualities: Safety; least disagreeable to administer; best calculated to produce muscular relaxation, followed by no ill effects, as vomiting, catarrh, etc.; not affecting prejudicially the question of hemorrhage; best adapted to the prevalent characteristics of the patient.

As before noted, chloroform will fulfil these requirements in the majority of cases, especially if the kid-

neys, heart, or lungs are diseased. The two conditions which to my mind might constitute occasion for hesitancy in giving an anæsthetic are the later stages of pulmonary phthisis with marked emphysema, and severe right cardiac diseases. Any interference with the patient before he is profoundly "under" should be deprecated, as in the condition of imperfect anæsthesia the dangers are considerably increased, the frightful mental phantasmagoria possible in a semiconscious state necessarily contributing greatly to the existing or induced shock. Chloroform's most brilliant field is in laparotomy, suturing of large surfaces, operations by night; in extreme old and young subjects, brain surgery, acute and chronic inflammatory and catarrhal affections of the respiratory tract, chronic endarteritis, renal disease, obstetrics, operations on chronic alcoholics, removal of tumors or foreign bodies from the larynx; in those delicate and minute surgical operations which require for their successful performance absolute quietude; finally, in all conditions in which expedition is of vital importance.

Chloroform's greatest recommendations are its rapid action, its easier administration with fewer unpleasant attendant consequences, and its less-irritating effects on the respiratory organs. Shock is less after a narcosis with it than with ether, though it must be conceded that the immediate dangers are greater with chloroform, while only the remoter ones obtain with ether. It is not possible fully to estimate the actual relations in this respect, but the dangers attending chloroform administration may be almost eliminated by the two safeguards of proper preparation of the patient and a rational administration of the anæsthetic.

Chloroform is suffering from past practice, when it was given to a degree and in a manner which would not now be tolerated. Numberless operators prefer ether to chloroform, as at some time in their experience they had a coincident death from the latter, causing them to abandon its use. The mortality from chloroform seems to be much greater than that from ether, but frequently grave disorders, such as pneumonia (especially frequent and fatal after laparotomy), bronchitis, broncho-pneumonia, œdema of the lungs, and nephritis, result from the exhibition of ether, and deaths from these complications ought to be regarded as equivalent to deaths from anæsthesia. Doubtless these effects are caused by the chilling of the blood stream or the immediate action of the intense cold on the lungs and the necessarily excessive elimination of ether by the lungs and kidneys, after it has been disintegrated by the economy. Körte and Wunderlich affirm that chloroform irritates the kidneys more than ether, and they are supported in this by Wyeth, of New York, who has made extensive reports upon this particular, but this is hardly the general opinion. I hope to submit comparative data with respect to this issue in the near future.

Preparation of the Patient.—He should have had no solid food for at least eight hours preceding the time of operation; if very feeble, concentrated and readily assimilated liquid nourishment (not milk nor beef tea) might be given up to within three hours of the contemplated commencement. Experience has induced me always radically to discountenance the so-called "ether breakfast." A mild saline purgative the evening before and a rectal injection of warm water immediately preceding the time set for the operation are a *sine qua non* to an easy and featureless anæsthesia. Even in emergency cases, when haste is demanded, a high enema or gastric irrigation, or both, ought to be insisted upon; this will minimize if not absolutely prevent the state of excitement, and will increase the efficacy of the least amount of the anæsthetic used, a feature always superlatively desired and demanded.

The stage of excitement marks the period in which most of the fatal cases of syncope have taken place, a term which has been in the past ofttimes a misnomer for obstructed respiratory function. If the patient struggles violently, we should raise his upper and lower extremities in the air, removing the fulcrumage upon which he can pivot his strength, making it comparatively easy to prevent him doing himself or attendants injury, and at this time the anæsthetic should be pushed, as struggling is the chief symptom of incomplete anæsthesia.

Frequently, with novices as anæsthetists, the struggling patient has projected upon him the assistants present, the surgeon orders more chloroform, which is hurriedly thrown into the cone and the face piece closely applied, and this is speedily followed by a stage of suspended animation, artificial respiration, anxious inquiries for brandy, strychnine, nitrite of amyl, ammonia (any of which are rarely at hand); then inversion of the patient is tried; a galvanic battery is frequently employed but is of little use; the *tout ensemble* is general demoralization of all concerned, and after a more or less extended period of this kind the patient may be resuscitated and the operator enabled to begin or complete the operation. It cannot be expected that the surgeon will be at his best after the excitement just encountered, and he is morally certain to complete his labors in the shortest time possible, fearing another excursion of his patient within the environs of death. A rarely recognized danger at this stage of anæsthesia is the rupture of some of the smaller vessels in the brain, giving us paralyses of various groups of muscles, often ascribed to the toxic effects of the agent upon the centres, but generally of mechanical origin.

The clothing of the body should be of the lightest, yet sufficiently warm to prevent the patient from being mischievously influenced by the fall of temperature incident to anæsthesia. The thoracic movements should be in plain view of the anæsthetizer, since a close observation and vigilant attention to the preservation of the respiratory function are absolutely necessary. When I speak of respiration, I do not mean fitful and feeble contractions of the diaphragm inadequate to the slightest ingress or egress of air to the lungs. The habit of females dressing for the occasion in belaced and berufflled chemises ought to be prevented by the physician's orders.

The Position.—This should, if possible, be the recumbent, or if preferable on the left side, with the head slightly extended, the means being at hand of promptly lowering the head to any degree desirable. The head should rest on a small pillow, the face be smeared with vaseline, and the patient instructed to count or talk as long as he is able.

The cone should not be closely applied to the face until the sensibility of the glottis and nasal mucous membrane is dulled.

When the patient is "under" the influence of the anæsthetic, I am in the habit of passing a curved needle, threaded with broad silk, through the tongue, as it gives one complete control over that organ, allowing it to be pulled forward instantly if necessary, and leaves but a small wound rarely noticed by the patient, giving him considerably less pain or trouble than when the tongue is held by the ordinary tongue forceps. Of the latter, I use a pair the blades of which cannot become disconnected; the ends are broadened out into a circle, of which the centre is punched out, allowing the needle to be passed through them without trouble. I find them extremely useful. If the patient gives the slightest sign of commencing to vomit or retch, the anæsthetic should be pushed to cut off the vomiting reflex.

Respiration, color of skin, condition of pupil, and

pulse claim my closest attention. Gaskell and Shore in their brilliant series of demonstrations proved that chloroform stimulates the vasomotor system until long after the respiratory centre is paralyzed, and this discovery, added to others of theirs on the condition of the heart musclè during anæsthesia, made clear how the pulse is prevented from betraying the condition of the heart during chloroform narcosis.

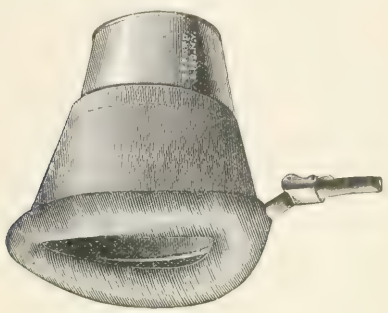
Time of the Operation.—The time of the day most suitable to administer an anæsthetic is in the morning hours; when possible, it should be so chosen, as it allows the patient refreshing sleep to fortify him for the ordeal. Thus we may take advantage of a night's rest and all the salutary effects that are associated with it, leaving the nervous system in the best possible condition and in an essentially tolerant mood successfully to cope with the great changes about to be undergone by it; at this period of the day the physical and psychical forces most nearly approach a condition of happy equipoise that is such a desideratum in anæsthesia. A factor of importance has ofttimes appeared in my experience to be the punctual observance of the time set for the operation, it doing much to prevent hysterical attacks in those who have steeled their nervous system to undergo the contemplated surgical procedure and only weaken as the time slips past the hour originally engaged.

The practice of giving either morphine, chloral, caffeine, alcohol, or similar drugs, is generally reprehensible, except, as in very rare instances, when their exhibition is indicated because of certain peculiar conditions. They seem theoretically correct and their administration is a routine practice, but careful consideration has impressed me with a desire to avoid these frequently mischievous and superfluous addenda. After the operation each has its clearly marked occasion for exhibition, but now the operator has become the sole judge of their propriety. Morphine increases the liability of asphyxia by strongly antagonizing the reflex phenomena, protracting the return to consciousness after the operation is completed, and thus frequently demoralizing the patient's friends, mayhap the surgeon too. Added to these undesirable sequelæ may be an unexpected opium or other narcosis supplanting the anæsthesia. Vomiting, at this stage especially dangerous, is frequently caused and invariably intensified by the practice, and a dangerous train of symptoms may be incited by even a relatively small hypodermic injection. It obscures signs of the greatest importance to the administrator, prolongs unduly the stage of excitement, naturally followed by a corresponding degree of wasted natural force. The temperature sinks considerably lower than in ordinary anæsthesia, and headache and nausea are its most constant results. The only point which can in any way recommend it to the surgeon is that it lessens the amount of the agent necessary to produce anæsthesia, but, as pointed out previously, the successful anæsthetist can accomplish this without its aid. Koenig abandoned this practice after a deliberate trial to test its efficacy and desirability in thousands of hospital and army cases, concluding it to be either positively harmful or at best of no benefit. Recently a new method of administering chloroform has been proposed by Dr. M. Rosenberg, who contends that the greatest dangers to both heart and respiration are occasioned reflexly by the irritating action of the chloroform on the termination of the trigeminus distributed to the mucous membrane of the nose, and that this may be obviated by first anæsthetizing this membrane with cocaine. Having tried this method in fifty cases, he concludes that the commencement of anæsthesia is less disagreeable to the patient, the excitement stage is often wanting and always slight except in alcoholic cases, and that it is rare that a patient vomits; if he does there is but little retching, and when he awakes he has no disagreeable sensation and is not haunted by the smell of chloroform or ether. His method is to direct the patient to blow his nose, thus clearing the mucous membrane; then leaning forward or sitting (never lying), to snuff a centigram of a powder consisting of ten-per-cent. cocaine muriate and some inert substance, repeating this in about three minutes before general anæsthesia is commenced. Another method to obtain the same result is proposed by Dr. A. Guerin, of Paris, who advises that the nose of the patient should be held by the fingers until general anæsthesia is produced, when there can be no longer any reflex action through the terminations of the nerves supplying the nasal mucous membrane, if the chloroform is inhaled exclusively through the mouth. Dr. Guerin rightly claims that when death occurs from stoppage of the heart, the cardiac muscle ceases to contract under the influence of the reflex action exerted by these nerves on the pneumogastric, stimulating the inhibitory power of the latter on the heart; he further shows that when a rabbit is subjected to tracheotomy, and then made to inhale chloroform directly through the trachea, the drug has no effect whatever on the heart; on the contrary, when it was held before the nose of the rabbit, the heart almost immediately stopped. The trachea being cut transversely, it is obvious that the chloroform inhaled by the nostrils could not reach the heart through the bronchi; therefore the doctor assumes that the anæsthetic agent exerts an injurious action upon the movements of the heart through the intervention of the nasal nerves and cardiac branches of the pneumogastric, the former acting reflexly on the latter. I have tried both these practices and they have given excellent results in a few of my late cases.

The essential characteristics of an anæsthetizer are the possession of a knowledge of the subject as far as it may be gained by constant and practical study, and familiarity with the literature, especially that concerned with the portrayal of clinical cases and accepted statistical records growing out of the use of anæsthetic agents. He should be gentle, quick, perfectly cool and self-contained, courageous, not rashly bold or liable to lose his nerve or head at critical moments. He should possess in the greatest degree the *suaviter in modo et fortiter in re*, as there is no contingency of a professional character that requires such tact and velvet-tongued diplomacy as when he has to soothe a semi-sensible or hysterical patient in order to continue or commence the administration of an anæsthetic. The trained operator of this description, with his thoroughly equipped satchel and his special experience, both to stand in good stead at critical moments, cannot fail to aid the operator to obtain best results and be necessarily of use in every well-planned *séance*. The demand for specialism in this branch of medicine is obvious and will tend to effect a notable saving of human life. With regard to the equipment, I make it a point to carry my own supply of chloroform and ether obtained from reputable manufacturers, stored in small containers sealed and protected from the action of light, enabling one to dispense with anæsthetics which have been kept for an indefinite time on drug-store shelves, exposed to conditions extremely liable to promote their decomposition; I never use any anæsthetic left over from a previous case, for after it has been uncorked it rapidly deteriorates.

Essentials for Administration of Anæsthetics.—An open and closed inhaler (I prefer Townshend's and the small modified Clover inhaler), chloroform and ether, Ferguson mouth gag, tongue forceps, needle holder and needles, a pocket or tracheotomy case, hypodermic syringe, and tablets of strychnine, nitroglycerin, atropine, morphine, digitalin. Aqua ammoniæ fortior and a silver catheter are sometimes of use.

The many complicated and cumbersome apparatuses to be found at all surgical-instrument makers', intended to dilute and automatically administer the vapor, are the illogical result of the fallacious premises that the anæsthetic agent must be accompanied by definite proportions of atmospheric air. Any complicated mechanism in the construction of which intricate valves are employed (to get out of order at unfortunate moments) are to be decried. The simpler the device for giving the vapor, the more serviceable and satisfactory will it prove. Of late I have employed



one devised by Dr. Townshend, of this city, with excellent results for either agent; it is modestly simple, cannot get out of order, and it is possible thoroughly to cleanse it instantaneously. The older ones frighten patients immediately they see them, especially children and hysterical subjects—certainly not to be wondered at considering the lethal-like aspect of the majority of these pseudo-scientific toys.

From the teaching laid down by men clearly untrained carefully to observe or practically unacquainted with the phenomena of anæsthesia, fallacious ideas have been associated with various inhalers, so that operators proceed with the idea that no harm can occur to the patient if the vapor is measured with one of these automatic contrivances. The susceptibility of patients to anæsthetics is not governed by any law that applies with equal force to all individuals; therefore, to prescribe definite hard-and-fast rules to all is, to say the least, poor practice; on the contrary, they may be adapted with special significance to the peculiarities of each subject. Idiosyncrasies, disparity of temperament, the latent strength of the patient coupled with his occult moral force, physical conditions, the position and preparation of the patient, and numerous other concomitant features are all factors of little importance to the occasional administrator, but pregnant with meaning to the specialist. These factors cannot be regulated by any known mechanism, however subtle; the rôle each plays has to be approximately gauged by the skilled anæsthetist, constituting in a great measure the necessity for his aid. Numberless patients have been asphyxiated and the result has been calmly chronicled as being due to a greater percentage of vapor than the human organism can safely tolerate.

Chloroform Syncope.—This term is universally accepted as the correct designation of the sudden deaths occurring in chloroform narcosis; it may happen when only a few whiffs have been inhaled, but there is no doubt that primary syncope is returned as the cause of death when it could be traced to other causes. Dr. Richardson says: "I should be inclined to put down 'fear' as one of the most determined causes of fatality from chloroform anæsthesia. I have before me now several instances in which it is impossible that chloroform—minus fear—could have been the direct cause of death, because sufficient of it was not administered to produce this result." To avoid this danger, it is absolutely necessary that the patient should be completely anæsthetized without anything to disturb his quietude, being cheered and comforted by the anæsthetizer alone; all hysterical relatives and friends should be kept from him; if he has a dear friend, who is of sterner stuff and for whom the patient has great affection, he may be allowed to stand near him or hold his hand. All talking, slamming of doors, or the rattle of instruments about to be used should be prevented, and it is imperatively desirable that not even the locality to be operated upon be uncovered or examined until he is completely narcotized. Necessarily, patients with fatty hearts, aortic or advanced mitral lesions, are more liable to syncope. A point of some importance is the fact that robust and vigorous patients form the greater proportion of those who have these attacks at the initial stage, frequently, no doubt, due to the fact that the chloroform is timidly given, instead of the anæsthetizer rapidly pushing on to complete anæsthesia. Syncope occurring in the second stage of anæsthesia is probably due to the reflex inhibition of the heart through the vagus; its most dangerous stage is just before the patient sinks into complete surgical anæsthesia, and it seems that at this period a special sensitiveness of reflex mechanism is brought about, death occurring from apparently trifling causes, frequently in attempts at vomiting.

In case of intestinal obstruction and like conditions, this particular time seems to be fraught with peculiar danger; at this stage the anæsthesia must be pushed rapidly to completion and the patient kept thoroughly "under" until the operation is finished. If the syncope is profound the chloroform must be removed, investigation made to discover if any coincident asphyxia is present, and the cause eliminated. Artificial respiration, with or without the use of Fell's apparatus, is to be employed; flagellation with towels alternately wet with hot and cold water; pressure on the floating ribs; rhythmical traction of the tongue; fresh air admitted into the room in plenty; hot saline solution thrown into the rectum; nitrite of amyl and ammonia by inhalation; strychnine, nitroglycerin, and ammonia hypodermically. Stretching of the sphincter ani is often an extremely good measure. I have but little faith in oxygen or the use of a faradic battery; the latter stimulates the vagus and increases the inhibitory action of this nerve, seeming to me positively harmful; by pressure on the lower ribs and carefully conducted artificial respiration the phrenic can be stimulated to excite the diaphragm. Traction on the tongue can be employed to prevent the approximation of the aryteno-epiglottidean folds, thus allowing free ingress of air to the lungs and removing the chance of accident from the tongue falling backward upon the epiglottis. It was pointed out some time ago by a careful observer that rhythmical traction on the tongue will stimulate respiratory movement.

Syncope occurring during the third stage of anæsthesia is least frequent and is due to an overdose acting on the intrinsic centres of the heart in this muscle itself (Ludwig, of Leipsic, and Von Recklinghausen showed that the heart is under the control of these ganglia and can perform its normal mechanism even when disconnected from the brain or cord) or to paralyzation of the nerve centres in the medulla. Doubtless a great portion of the mischief comes from the carbonization of the blood in the capillaries of the lungs, retarding the stream until this reaction is felt by the larger vessels and culminating in paralysis of the heart muscle in the effort to empty its ventricles. The concentration of the anæsthetic atmosphere is not of so great importance at this stage of the narcosis as is the amount of chloroform circulating in the blood.

"The amount coming from the inhaler varies greatly from time to time as fresh anæsthetic may be dropped into the cone; the danger exists greatest when the most concentrated vapor coincides with the period when the patient is inspiring deeply" (Lister). The treatment of syncope occurring during complete surgical narcosis is practically the same as outlined for that occurring during the second stage of anæsthesia, with the marked exception that the anæsthetic must be removed and fresh air in abundance admitted into the room.

The administration of a few doses of digitalis or strychnine hypodermically in subjects with weak hearts was recommended and practised by the late Dr. Wood, who was a firm believer that it lessened the danger of syncope and that it could be profitably employed in most cases.

If it is ever necessary to perform tracheotomy on a patient, the method proposed by Dr. Von Donhoff, of this city, being so simple and requiring such an infinitesimal time renders it of momentous service in connection with spasm of the glottis, occasionally happening in narcosis. A curved needle threaded is passed through the trachea; then the tracheal rings are cut, and the thread is caught by a blunt hook; this thread is divided in the middle and the two strings it forms are loosely tied at the back of the neck.

Ether.—"Any one can give ether" has been the stereotyped cry of surgeons of the last decade, when the question of a suitable anæsthetic in a given case has had to be considered. Of late, this belief has been renounced by many of the most able; certainly those who have had considerable practical experience in the administration of this anæsthetic are the firmest believers in the renunciation, readily affirming that it requires a greater skill to administer ether than chloroform. It is not so apt to kill the subject on the operating-table, though grave dangers are encountered hours or days after the surgical *séance;* these are often lost sight of or ascribed to other causes.

Eliminating asphyxia, but little is known by even our advanced physiologists of the manner in which anæsthetics kill; no one has discovered the subtle secret, though plausible theories have been advanced by the score. In records of autopsies of death from anæsthetics, how often is the return marked: "All the organs were healthy and the cause of death was not shown."

The preparation of the patient should be the same as prescribed for chloroform, especial care being taken to secure an empty stomach and to insure that the patient is kept warmly covered, hot water bags being applied to the extremities if necessary, as the fall of temperature is greater when ether is used. The first few inspirations should contain only a small quantity of ether vapor until the sensibility of the glottis is dulled, the administrator gradually increasing the amount until the stage of excitement is reached, then pushing the anæsthetic until surgical anæsthesia is induced and keeping the patient thoroughly "under," accomplished by a small amount of ether if judiciously administered. The anæsthetizer should be prepared to meet at the onset any difficulties of respiration that may arise, the delicate circulation in the lobes of the ears giving ample warning of disturbed circulation; if present it is to be promptly met by allowing the patient to breathe one or two inspirations of unmodified air. The patient should not be removed to a cooler atmosphere until he has recovered from the anæsthetic; indeed, it is well to keep him for about twelve hours in a warm room to minimize any bronchial trouble that may occur as a result of the etherization. This is especially important if infants or elderly people are the subjects. If a closed inhaler is used, the patient should be allowed a breath of unsaturated air from time to time, best accomplished by removing the cone from the face. If ether is incautiously pushed for a prolonged period without allowing the patient to renew the air in his lungs from time to time, his respiration may stop, although the muscles may be flaccid; this condition appears to ensue from the overloading of the blood with ether, leading to paralysis of the respiratory centre and a condition of collapse similar to the syncope of chloroform narcosis. The increased secretion from the mouth and respiratory tract should be occasionally sponged out, but the experienced anæsthetizer encounters considerable less of this disagreeable symptom than the novice. Vomiting and coughing should at all times be overcome by pushing the ether to tolerance. Warning of vomiting is generally given by the occurrence of irregular, shallow breathing, yawning inspirations, efforts at swallowing, retching, and dilatation of the pupil. The latter sign must be differentiated from that which occurs when syncope is about to be induced; it is one of the most dangerous symptoms, and its true import should be instantly recognized. In case of the administration of ether to patients in a state of collapse, very dilute vapor must be given, the room kept about 85° F., and dry heat applied to various portions of the subject. Schilling is in the habit of giving one-grain doses of camphor hypodermically as a stimulant, reporting good results from this procedure.

The following conditions are looked upon as being specially suited to the administration of ether, but mitigating circumstances, as with the field mapped out for chloroform, may contraindicate its use: surgical shock, epilepsy, tendency to syncope, fatty heart or advanced aortic or mitral disease, acute alcoholism and delirium tremens, fatty or obstructed liver, spina bifida, hydrocephalus, when any heart-depressing drug has been administered in large doses. No alcoholic stimulant should be given before or during collapse following or occurring at its administration; it only increases the narcotization, and therefore the dangers; for the same reason opium should also be withheld.

Obstructed respiration may occur from simple falling back of the tongue, the presence of blood, mucus, etc., in the the larynx, or from spasm of the glottis. A good anæsthetist can administer this agent to patients of any age, but it will be generally found that elderly people do best under chloroform, they having often a condition of chronic bronchitis.

In aortic diseases it acts as a stimulant and is often beneficial, but if there is a tendency of the venous system to be turgescent, as in mitral diseases or dilated right heart, chloroform will be more suitable, if administered on right principles.

Ether exercises a much less dangerous action on the ganglia of the heart; this would relegate chloroform into disuse but for the fact that the after-effects of its administration are often so dangerous. Thus the superior safety of ether is frequently more than counterbalanced, necessitating careful consideration as to which should be employed. The danger from reflex inhibition, producing primary syncope, is less liable to occur than when chloroform is used, and can be best treated by pushing the anæsthetic, unless this is contraindicated. Thus, even with the so considered safer and more fashionable anæsthetic, the supersaturation of the blood and nervous tissues, with its sequence of paralyzed respiratory and cardiac action, is a possibility not to be lost sight of.

When one considers that the aim and result of all anæsthetic procedures is to paralyze nerve-cell function, it must not be forgotten that the distance is not far to paralyzed centres, which portends so much. In all anæsthesias, whatever substance is used, the true anæsthetist strives to remain in that narrow limit between reflex inhibitory influences and paralyzed nerve centres.

68 West Tenth Street.

THE PATHOLOGY OF EVOLUTION.

By CORA HOSMER FLAGG, M.D.,

Since biology no longer places man in a separate order by himself but considers him as the last link in the long chain of organism, it has become absolutely necessary for a broad and progressive knowledge of man's structure, its physiology and pathology, that our medical schools should present these subjects from a comparative standpoint.

The great progress made in anatomy during the last few years has been wholly due to the study of the evolution of organs and tissues through lower to higher forms. Thanks to the work of those great masters of comparative anatomy—Wiedersheim, Cunningham, Osborn, Sutton, Wilson, Cope, Howes, Humphry, Rathke, and a host of others—this subject is at the present time the most progressive of all the biological sciences.

It now remains for physiology and pathology, based as they necessarily are upon morphological data, to profit by the consideration of the possibilities of comparative anatomy for elucidating many of the pathological conditions to which man is subject.

It is a common idea that the human body is fixed or stable in its structure, that it is perfectly and marvellously adapted to supposed uses for definite ends, while all the evidences from comparative anatomy, embryology, and physiology go to show that the majority of our organs are combinations, rearrangements, and compromises necessitated by the accidents of growing complexities. These same biological sciences show many indications that changes in man's organism are still continuing, and, by pointing out to us the centres of most rapid evolution, give us a hint as to what the man of the future will be like.

Much of this instability of structure is directly due to the mechanics of the upright position and to the fact that the body with its quadrupedal ancestry has not yet become perfectly adapted to this condition. Every region of the body shows evidences of this maladaptation. Some structures are in a state of progression—that is, they are tending toward more perfect adaptation; others are slowly retrogressing, some having gone so far in this direction as to have dropped out of use entirely, remaining now as vestiges. Some have disappeared, only to reappear as reversions or anomalies. Our developing, degenerating, rudimentary, and reversional organs show conclusively that man is now in active process of evolution.

It is the purpose of this paper to place in view the relations which exist between maladaptation and certain pathological conditions of various structures of the human body, or rather some diseases or pathological processes that are most obviously due to the fact that man has evolved from lower conditions of organism.

Naturally we should expect to find in the pelvis marked modifications adaptative to the upright position, for instead of a pelvis which transmits the weight of the posterior end of the spinal column merely to the femora, we now have a pelvis which transmits the weight of the whole column and upper extremities, and supports the weight of the viscera. In conformity to this change of function, instead of the "box-shaped" pelvis of the quadruped, with its long, narrow, straight ilia, straight sacrum with no projecting promontory, and straight birth canal, we have a "bowl-shaped" pelvis with wide-flaring ilia and contracted inlet, curved sacrum with projecting promontory, and a curved birth canal. It should be noticed that this latter type of pelvis is not found in the newborn infant, but commences to take shape as soon as the child becomes accustomed to the upright gait, and it increases in this direction as long as the plasticity of the bones allows. Litzmann finds that the European infant at birth has a pelvis much like that of the lower mammals, *i.e.*, the cavity is deeper, the sacrum scarcely curved, and there is more inclination of the pelvis, so that the entrance to it is round and large, differing much from the later adult form. This infant pelvis is as good evidence as to the shape of the pelvis in the early mammalian stage of human phylogeny as the gill slits are to the ichthyoid stage. The adult pelvis, while better adapted for support, is not the shape best adapted for easy and safe parturition. The curved birth canal, together with the changed angle of pelvic inclination, causes the canal to vary at different depths, making necessary a series of changes of position of the child's head during delivery. The projecting sacral promontory, most marked in civilized races, still further lessens the dimensions of the pelvic inlet. All these characters increase the danger to life during delivery of both mother and child, and it is well known that the death of thousands of mothers and children, otherwise perfectly healthy and well formed, can be traced to this evolutionary factor alone.

The highest expression of modification is found in the pelvis of the civilized woman. In her we have well illustrated the struggle that has been and still is going on between expanding ilia and contracting inlet for better support on the one hand, and the increasing size of the child's head, which is correlated with an increased capacity for brain development, on the other. It is of significance to note in this connection that the pressure of the viscera upon the pelvis is artificially increased by the corset-wearing habit. The civilized races are more or less mixed races, and so there is a constant discrepancy between the shape of the child's head and the shape of the pelvic inlet of the mother, which increases the difficulty of parturition. Primitive races are usually homogeneous races, and the shape of the fœtal cranium and the maternal pelvis are usually well correlated, hence we rarely find such difficult parturition arising from this cause among them. The pelvic contents of the other mammals and the human infant are not the same as those of adult man. A downward shifting of the viscera occurs when the child begins to walk, and the protruding abdomen, so like that of the anthropoids, disappears. The urinary bladder and its appendages, uterus, vagina, and their appendages, vesiculæ seminales, rectum, sigmoid flexure, and lower part of the ileum, are all pelvic organs of the adult man. In the other mammals and the human infant the sigmoid flexure, lower part of the ileum, and fundi of the bladder and uterus are always in the abdomen. No other reason can be assigned for this downward shifting except gravity; hence any pathological condition arising from their presence within the pelvis must be due to the upright position. Of the pelvic organs affected by downward pressure, the uterus probably suffers most. The various folds of peritoneum, so-called ligaments, and the round ligaments, while distinctly functional in the quadrupedal position, to act as "guy ropes," to prevent the gravid uterus from falling too far forward and interfering with the function of lungs and heart, practically do not support the uterus in the upright position. Adaptative changes have taken place in a measure in the tissues about the cervix uteri, the health and tonicity of which will be more generally recognized by gynæcologists as important agents in preserving uterine position. The inadequacy of this makeshift, however, is shown by the very great frequency of uterine displacements, which, together with the very serious disturbances accompanying them, furnish one of the most obvious pathologies of evolution.

Man is the only animal that fully extends the thigh

at the hip-joint. This straightening of the legs when the child begins to walk is effected by the development of a lumbar curvature in the spinal column. This convexity forward in the lumbar region has received much attention from comparative anatomists, many of whom claimed it as a distinctive human characteristic until Cunningham demonstrated a beginning development of it in certain of the semi-erect anthropoids. It is never found in the spines of animals habitually quadrupedal in gait. A cervical convexity also appears when the human infant acquires strength to raise its head and balance it on the summit of the spinal column.

The single, large, dorsally directed curve of the quadrupedal spine has been modified to the requirements of the upright position by the formation of these two antagonizing curves, and the massive development of the erector-spinæ group of muscles. Wiedersheim finds evidences of its present evolution toward more perfect adaptation in the increase of all of its curvatures, especially the lumbar, the shortening of the centra of the lumbar vertebræ, and the upward shifting of the pelvis on the column, which is shown by finding the fifth lumbar vertebra in all stages of progression toward becoming incorporated into the sacrum. Undoubtedly there was a point in man's phylum when the spinal cord accompanied the whole length of the column, which was much longer than at present, the coccyx being the vestigial representative of this shortening. An atrophy of the cord upward has taken place, and now it reaches only to the first lumbar vertebra. In view of this fact the attention is directed to the relation between those tabetic affections to which this part of the cord is subject and this upward degeneration.

There are evidences that the upper part of the spine possessed more ribs than at present, for a proof of the existence of cervical ribs in mammals is found in the Edentata. The seventh and sometimes the sixth cervical vertebra of the human embryo almost always possesses vestiges of ribs, and cases are not at all rare in which a seventh cervical sternal rib has been found in adult man. Sometimes it is paired, and often it does not reach the sternum. Often the first pair of thoracic ribs show such marked degenerative characteristics that Howes says "the question might be raised whether this tendency toward reduction at the upper end of the thorax may not be a determining factor in the degeneration so frequently found to be commencing at the apices of the lungs."

Since the upright gait frees our anterior limbs from the supporting and walking function—a function necessarily demanding equal use of the limbs of both sides—we have acquired right-handedness, no satisfactory explanation of which has as yet been suggested. Whatever the cause, there is associated with it an inequality of muscular development between the two sides. This inequality of muscular development may be assigned as one of the causes of lateral spinal curvature, a pathological condition found only in man.

In the lower mammals the fibula is nearly equal in size to the tibia, and both articulate with the femur, contributing to the formation of the knee-joint. We find this same condition of the two bones in the human embryo at one period of its development.

In the upright position during phylogenetic development the weight of the body has come to rest on the tibia alone, and the fibula has shifted downward and dwindled to a mere appendage, saved, however, from still further degeneration by its connection with the heads of the peronei and the part it takes in the formation of the ankle. It is not strongly functional; hence it is a weak structure, and, being in a position exposed to strains and impacts, is very frequently fractured.

Fractures of the neck of the femur are probably rendered more frequent from the fact that the angle it makes with the shaft of the bone is increased by the weight of the body as age advances.

While the viscera as a whole were nearly as well adapted for use in an upright position as in a horizontal one, yet the change to verticality did bring about certain disadvantageous conditions, aside from those resulting from pressure, which have caused pathological conditions. Clevenger has shown that in the quadrupedal position the circulation in the intercostal and lumbar veins has to be maintained against gravity; consequently we find in them an abundant supply of valves. In the upright position the direction of the blood current in these veins is horizontal, and, although valves are of no functional value, yet they are always present in various stages of retrogression. This interesting phylogenetic fact is still more emphasized by our finding many more valves in the human embryo than attain to complete development in the later adult form. While there is no reason for valves in the horizontally disposed portal system of the quadruped, their absence in the hemorrhoidal and other parts of our portal system has an important influence on the development of certain diseases due to congestion, one of the most common of which is hemorrhoids or piles. Much suffering is caused also by the frequent absence of valves in the ovarian veins, especially in the vein of the left side, which almost never possesses a valve.

The heart works at a great disadvantage, because it has to force the blood column to a higher level and against greater hydrostatic pressure. We might find here a cause for the tendency to heart affections from which man suffers. The difficulty of lifting the blood column against gravity is shown by the frequent occurrence of varicose veins, varicocele, etc.; and as disorders secondary to heart affections we have anasarca, congestions of the liver, ascites, cardiac dropsy, etc.

The upright position has exposed the great vessels of the leg and arm, increasing the danger to fatal hemorrhages from their greater liability to injury.

The cæcum and colon are not favorably located in the upright position for carrying off fæcal matter; and the rectum, forced to follow the curve of the sacrum by pressure of other organs, is because of this the seat of numerous ills.

The weakest spots in the abdominal walls are those openings in the abdominal muscles just above Poupart's ligaments for the transmission of certain structures from the abdominal cavity. When the visceral stress is in the ventral direction, this weak part is in a protected position; but with visceral stress in the caudal direction these weak places are most unfavorably located. Adaptative modifications of tissues about the inguinal canals have taken place, but when the abdominal muscles are powerfully actuated they are often strained, the openings enlarged, and the intestine is forced out, constituting the pathological condition known as inguinal hernia.

Every region of the body shows some record of the past history of the race, in the large number of vestigial structures, the present representatives of parts once of value when environmental conditions were different from what they are now. These vestiges through lack of function and consequent lessened metabolism become more quickly overloaded with the katastates of their own cell life, and so fall the more readily a prey to adverse conditions. So great is their liability to be attacked by disease that "an unused part is a diseased part" has become a medical axiom.

Many obsolete canals which were functional in our remote ancestors, instead of filling up and becoming cords, have sometimes a lumen left in them, which occasionally fills with fluid, making tumors. Many

of the ducts and organs connected with the genito-urinary apparatus, being tertiary adaptations from a primitive kidney system, through a secondary kidney system, are peculiarly liable to disease, not only on account of their late and complex evolution, but from the persistence of many vestigial structures connected with them. The parovarium is one of these—the remains of the Wolffian body. It consists of a series of short vertical tubes, dipping into the hilum of the ovary and ending blindy above in a duct. From some cause these tubes are often the seat of cysts which may attain great size. They are sometimes accompanied by ascites, sometimes infect the peritoneum, and often cause death by malignant degeneration.

Because an organ in a pathological condition may cause widespread systemic derangement is no proof that such an organ is now of physiological value, when there is no other evidence as to its function. The fact that the thyroid gland, when diseased, may give rise to goitre, acromegalia, and other systemic disturbances, is no proof that the thyroid in health is of functional value, and that it should not be classed as a vestigial organ.

Not enough of experiments have been made as yet of removal of the thyroid, unaccompanied by other conditions, to give us data as to any normal function. What has just been said is also applicable to the thymus gland and the suprarenal capsules.

In many places where canals open on a free surface, the orifices are usually surrounded with glands and a mass of adenoid tissue. The tonsils are an example of this, located in the fauces and marking the inner orifices of the gill slits. There is a third tonsil, identical in structure with the tonsils of the fauces, in the pharyngeal vault, which, although not associated with a gill slit, is situated at the pharyngeal orifice of a duct, which in the embryo traverses the floor of the pituitary fossa and opens into the roof of the pharynx. These are very troublesome vestiges, often giving rise to tonsillitis and malignant tumors, and from their vestigial character are the seat of the initial lesion in many pathological affections of the throat. As is well known, adenoid tissue has an inherent tendency at slight provocation to increased activity of its cellular elements, thus enlarging the mass; and it is this hypertrophy, especially of the third tonsil, that causes so much trouble in childhood.

It has been conclusively shown that the intestinal cæcum, owing to changes in diet and habits, has become much shortened in man—the vermiform appendix being left as a rudiment of this shortened part. It has all the characteristics of a rudiment, noticeably variability in both length and occlusion, and a greater development in the embryo than in the adult. Appendicitis is now a well-recognized lesion, and to it other inflammatory conditions, as the different forms of typhlitis and peritonitis, can be traced.

All of that great number of our retrogressive and progressive structures which are now becoming changed to secondary uses, or becoming more highly differentiated by the modification of their cell habits, offer a less vigorous resistance and more readily succumb to disease than do those structures that have developed along one line alone, so retaining their earlier cell habits in constant vigorous activity.

While congenital abnormalities are usually the result of local disturbances or malnutrition, they are usually of a type recalling the original evolution of that part; so that local disturbances seem to be more effective on an atavistic line. We have cleft palate from failure of the maxillary plates of the first gill arch to approximate; anterior cleft palate and harelip from a failure of the frontal process to project sufficiently far downward; supernumerary auricles and branchial fistulæ at the gill-slit localities from arrested developmental processes; hypospadias from failure of the genital furrow to unite in the male.

It is a noticeable fact that the most common brain lesions are those of the latest developed and most highly specialized convolutions; that the rarest lesions are those affecting the deeper parts of the brain, where lie the primal emotions and desires common to nearly all animal life.

The external parts of the brain, which during the course of evolution have developed and specialized in response to individual need, rather than of species necessity, are the most complex and hence the most unstable parts. Consequently we find them the most liable to disease and the most easily disturbed by disease in other parts of the body. The more complex parts of the brain are associated with the more complex phenomena of the mind, such as the more intricate correlations from which arise generalizations of concrete experiences, and hence deductions as to the nature of new but analogous conditions. These complex functions, being the latest acquired, are the most easily disturbed, and their derangement furnishes the most satisfactory explanation of delusions, double personality, and other morbid mental manifestations. The insane will readily commit suicide, as the primitive savage will readily sacrifice his life, but both will instinctively struggle against another injuring them in the same way. The appreciation of value of one's own life to one's self is a later acquirement—the struggle for existence against another being a primal tendency. In those brain lesions of the cortex which produce insanities, the deep-seated primal emotions are freed from the repression which this part of the brain has gradually, during the course of evolution, come to exercise over them.

Between these two extremes of primal emotions and complex correlations there lie the vast series of ever-specializing centres of organic and muscular activities. The lesions in these centres, in the frequency of their occurrence, lie between the comparative lack of them in the case of the deep-seated parts of the brain, and the constant occurrence of them in the later, higher psychic development of the external portions.

In this cursory review of pathological conditions due to the evolutionary nature of man's origin, we have only touched upon those which have the most clearly arisen from the action of this principle in him. Broadly speaking, however, the pathologies of evolution should not be thus confined; for in the broader view, which takes in the action of this principle throughout nature, we should include within our inquiry all factors that affect man.

Before we are prepared fully to understand the details of pathology, they must be carefully verified and collated under a broad system of comparative study, which not only takes into account the individual disease as it now exists, but which will trace, as far as possible, the factors in the long history of our growth that gave rise to it and from which it too has evolved.

The Treatment of Chorea.—Dr. De Renzi has confidence in only three remedies: 1. Absolute rest, avoiding any external excitation whatever, and placing the patient in a dark room. 2. The ascending electric current along the spinal cord—the best results with a gentle current, progressively increased. 3. Arsenic in large doses, commencing with twenty drops of Fowler's solution each day for children, and double this amount for adults. When the chorea ceases the medicine should be continued, for the disease returns readily. The nutrition of the patient must be maintained, and good food and gymnastics are useful.—*Gazzetta degli Ospedali e delle Cliniche.*

TOBACCO AMBLYOPIA.

BY RICHARD ELLIS, M.D.,

A CHRONIC retrobulbar neuritis may arise from a variety of causes, chief of which is the abuse of tobacco. From its most common cause the disease has been called "tobacco amblyopia," though it is better to keep the term "retro-bulbar neuritis" as derived from the pathology, rather than to accept a name derived from the etiology. The victim usually comes early to the physician, complaining of some loss of sight with possibly a slight cloudiness obscuring vision. In such cases the ophthalmoscope reveals no signs of a special pathological state, and normal vision soon returns on the discontinuance of the use of tobacco.

In advanced cases, vision may range from $\frac{20}{200}$ to $\frac{5}{200}$. Reading is impossible; a hazy cloud is extremely annoying; central vision is so poor that mechanically the patient will turn his head to either side in order to use the peripheral parts of the retina. He is often sure he sees better at night, at least he does not see this haziness quite so disagreeably. This oft-observed nyctalopia caused Arlt, ignorant of the pathology, to call this form of neuritis "retinitis nyctalopica." The patient does not know when the trouble began. He may early detect his inability to read as well as formerly, but many of these patients (who read but little) are not troubled much until failing vision interferes with their work. Then some consult the physician at once; others, not realizing the trouble, lose their positions, and console themselves with their beloved pipes and coddle their cud until a condition of almost complete blindness drives them to some hospital to seek advice.

The patient tells enough to suggest at once the diagnosis. If the ophthalmoscopic examination is negative, the physician examines for central color scotomata in that part of the field corresponding to the part of the retina supplied by the papillo-macular bundle of the optic nerve. A careful examination will show a color scotoma in both eyes, with loss of central vision. As the retina is very easily exhausted, especially at the border lines of the scotomata, it is not advisable to try to map out the boundary lines too carefully. Have the patient look at a black lead pencil a few feet in front of him, and then quickly present to the nasal field of the eye examined a small black disc with a red centre. At once the patient recognizes the color. When the disc is brought to the temporal side, the patient cannot possibly recognize the color in the oval field corresponding to the maculo-papillary retinal region, or in mild cases he will at once notice that the color is less bright. In advanced cases he may not recognize bright blue or even white.

The peripheral parts of the field are color blind in the normal eye. The nearer the color approaches the centre of the field, the more acutely is the color recognized. In this form of amblyopia, since there is an atrophy of the very nerve fibres that best distinguish colors, we expect the patient to have central color scotomata and should remember this as the leading point for diagnosis in this form of amblyopia.

The ophthalmoscopic examination is usually negative. From a close examination the physician is usually convinced (from the breath) that most of these patients indulge in the abuse of whiskey as well as in that of tobacco, so that in many cases it is a question which should take the greater blame. I am convinced from the pathology of the abuse of alcohol (increase of connective tissue, decrease of normal cells) as well as from the breath, that alcohol must be considered as an adjuvant to the tobacco in such cases. Some believe that alcohol alone can produce this retrobulbar neuritis. Noyes states in his text-book that "in alcoholic amblyopia we find usually a dull red nerve with swollen veins, rather hazy borders, and torpid circulation. Atrophy may subsequently ensue. . . . In tobacco amblyopia the nerve is brighter and more nearly normal, or it may show tokens of atrophy or of interstitial inflammatory exudation. Generally there is little lesion to be recognized."

Since Samelsohn showed that the pathology of this form of amblyopia lies in the maculo-papillar bundle within the optic canal, we look closely at that part of the fundus which is supplied by this bundle of nerve fibres. We are not surprised to find the temporal side of the nerve whiter than the rest of the nerve, so white in some cases as to indicate atrophy and to cause surprise that this peculiarity has not been more particularly mentioned.

The workingman living out of doors, and consuming tremendous quantities of food and oxygen as well as tobacco, is usually the victim. The cigarette smoker escapes because his stomach gives out before his optic nerve is in the least danger. Were the "gentleman" smoker to consume the quality and the quantity of tobacco that some of our workingmen smoke with keen pleasure, the result would be an attack of acute nicotine poisoning.

I personally am very fond of tobacco, but a few whiffs from a hod carrier's vademecum would satisfy my tobacco craving, at least until after dinner. There is more nicotine-paralyzing ability in the smoke from one pipeful of black "juicy" tobacco than in a hundred mild cigarettes, yet occasionally we hear of mild amblyopia from cigarette smoking. Were the workingman to use milder tobacco and to clean out his pipe occasionally, this form of amblyopia would rarely be seen; but so long as the strongest kinds of tobacco are sought for and enjoyed, so long will tobacco amblyopia be encountered. A patient recently seen at the Sherwood Eye Infirmary, in the service of Dr. Scott, was a stalwart Bohemian, who had been gradually growing blind. His friends kindly diagnosed his trouble as due to "advancing years." He acquiesced in the diagnosis, and, losing his position as a stonecutter, he engaged in the occupation of keeping his pipe warm, until his sight was almost gone, when he wisely thought it time to consult a physician to have his friends' diagnosis verified. He was surprised to learn the true diagnosis and promised to give up smoking at once. Two weeks later he proudly stated he had not smoked in this time, but found "chewing about as satisfactory." He was as innocent of any wrong doing as a former patient who promised to smoke "less often," and a month later showed me his pipe, which he proudly stated he smoked but "three times a day." It was made to order and about the size of a beer keg. The ophthalmoscopic examination of this Bohemian patient was negative save for the whiteness of the temporal side of the disc, which was so very white as to suggest atrophy at once. Vision of right eye, $\frac{10}{200}$; left eye, $\frac{5}{200}$; white square on black background scarcely seen in field where red and blue scotomata were clearly made out. Colors easily distinguished on nasal side. The patient chiefly complains of loss of central vision and blurring of vision. He says he sees better at night and turns his head to either side in order more clearly to see a light in front. The patient has been soaked in nicotine so long that a bad prognosis is given, though the majority of cases improve if tobacco is stopped and strychnine is prescribed. I have seen a case regain $\frac{20}{20}$ from $\frac{20}{40}$ in a few weeks; $\frac{20}{20}$ may be regained from $\frac{20}{40}$ in a comparatively short time, but $\frac{5}{200}$ sight is so very poor as to make the prognosis very unfavorable. Certainly the white atrophic appearance of the temporal region of

the disc makes one realize that the nerve has really been poisoned to death.

Though we do not know why these special fibres of the optic nerve should be affected, we do know that this great manly fellow has lost much of his sight through ignorance, and his family has lost the blessing of his support.

It is indeed a pity that the average man does not realize the danger that lurks in this seductive weed. Like a siren, the charming Nicotina soothes her victim while she slowly but cruelly blinds him. Accursed be such a siren, and accursed again I say, as I see this great fellow blind and his family in want! Such a siren should be exposed as she lies on the watch, concealed by the ignorance of those most in danger—the abusers of tobacco. The use of tobacco is indeed a great "comfort." It satisfies a craving so well that perhaps a majority of the inhabitants of the world worships at the throne of Nicotina. Of nothing else is this true excepting alcohol. If the real value of tobacco among all classes of men, especially the workingman, the soldier, and the sailor, could be estimated, it would be found to be of more value than all the nuggets of the Klondike. Certainly it has been truthfully and well said that "tobacco is a lone man's companion, a bachelor's friend, a hungry man's food, a sad man's cordial, a wakeful man's sleep, and a chilly man's fire."

We know tobacco is a powerful poison, yet we believe in its use. The two things most desired by the out-of-doors man are tobacco and coffee, and of these two, tobacco always comes first. He who has never enjoyed an after-dinner cigar will not be in sympathy possibly with those using tobacco, yet he will agree that the use of tobacco cannot be stopped, and that it is the abuse that injures, not the use of tobacco. He will agree with the writer that only men should use tobacco, and they only with intelligent moderation, proceeding from a knowledge of the dangers as well as the pleasures concealed in the world-worshipped yet poisonous weed.

241 Lenox Avenue

Progress of Medical Science.

Nasal Micro-Organisms.—1. In all bacterioscopic investigations of the nasal fossæ, in all researches as to the action of nasal mucus, etc., a clear distinction must be made between the vestibule of the nose and the proper mucous cavity. The former is lined with skin, and is not part of the nose cavity proper, but only leads to it. 2. Contamination with the lining of the vestibule is difficult to avoid, even when this source of error has been realized. 3. In the dust and crusts of mucus and *débris* deposited among the vibrissæ of healthy subjects micro-organisms are never absent, and are usually abundant. 4. On the Schneiderian membrane the reverse is the case. Under normal conditions micro-organisms are never plentiful here, are rarely even numerous, and in more than eighty per cent. of cases no organisms whatever are found and the mucus is completely sterile. 5. The occurrence of pathogenic organisms must be so infrequent that their presence on the Schneiderian membrane can be regarded only as quite exceptional.—Thompson *and* Hewlett, *Arch. of Otol.*, xxiv., 3 and 4.

The Bacteriology of Typhoid Fever.—In the course of observations made in eighty-three cases of typhoid fever, Besson (*Revue de Médecine*, June 10, 1897) found albumin in the urine in forty-seven. Bacteriologic examination of the urine in thirty-three of these disclosed the presence of typhoid bacilli in six, principally in those in which the albuminuria was pronounced. In none of the cases examined with this end in view, and these included especially those attended by complications, such as hemorrhage, phlebitis, and suppuration, were the bacilli found in the blood and but once in the contents of a rose spot. It is therefore believed that the cutaneous exanthem is of toxic origin. Of fourteen cases presenting angina, bacteriologic examination of material obtained from the tonsils disclosed the presence of typhoid bacilli in six. In thirty-three cases suppurative complications were apparently dependent upon the staphylococcus pyogenes and in five upon the streptococcus. Meningitis complicating one case and urethritis complicating another were found associated with the bacterium coli commune. The typhoid bacillus alone was found attending suppurative complications in six cases. From the foregoing observations the conclusion is reached that suppuration due to the typhoid bacillus is frequent in the course of typhoid fever. It is usually unattended by constitutional phenomena or febrile reaction; the temperature may even be subnormal. The complication is insidious in development and may require exploratory puncture for its detection. It develops most commonly during the period of defervescence or in convalescence and is usually benign in course, a fact that may be related to the phagocytic activity displayed by the pus.

The Relation between Tissue Change and the Leucocytes in Connection with Blood Dissolution.—As a result of observations in a case of malarial intermittent fever, supplemented by experimental studies in which blood dissolution in animals was effected in various ways, Kühnau (*Archiv für klinische Medicin*, vol. lviii., Nos. 4 and 5) found that such dissolution is attended by a considerable degree of leucocytosis, together with metabolic changes, as manifested by increased elimination of uric acid and xanthin bases; primary increase with secondary diminution in the elimination of phosphoric acid; and increased elimination of chlorides. The chlorides and the phosphoric acid appear to stand in vicarious relations with one another, the retention of the one corresponding with increased elimination of the other. The increased elimination of alloxur bodies is dependent principally upon destruction of the leucocytes. Probably other nucleated cellular elements take part in this process and in slight degree also the nuclein-containing albuminous constituents of disintegrated red blood cells. The mother substance for the formation of alloxur bodies is in large part contained in the plasma and the serum and in smaller degree in the red blood corpuscles. The amount of uric-acid-forming substance depends upon the number of leucocytes in the blood. Normal blood serum induces only a slight increase in the elimination of alloxur bodies and leucocytosis; typhoid serum none at all; and leukæmic serum a very considerable increase. The primary increase induced by leukæmic serum results from the presence of uric-acid-forming substances; the secondary increase is the result of the increased production and destruction of leucocytes dependent upon the activity of the leukæmic serum. The leucocytosis attending blood dissolution is an effect of the co-operation of three causes: (*a*) the direct leucotactic action of the blood poison; (*b*) the chemical substances (especially nucleins) set free as a result of the destruction of the cellular elements of the blood; (*c*) the remains of disintegrated blood corpuscles circulating in the blood. The leucocytosis induced by injection of corpuscular elements into the blood is a pure phagocytosis and leads to no notable destruction of leucocytes. The increased destruction of leucocytes in the blood in cases of infectious diseases is due to the presence of a leucocytolytic substance.

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THE YELLOW-FEVER OUTLOOK.

THE situation in those parts of the South where yellow fever prevails remains at the present writing practically unchanged. New cases are reported daily in the towns where the disease gained an entrance before its true nature was recognized, but this is only what must be expected for some time to come, especially in view of the fact that in many of these places the sanitary conditions are far from being perfect. There is no cause, however, to fear a disastrous epidemic or a wide extension of the disease, for the health authorities are thoroughly alive to the gravity of the situation and may be relied upon to keep the fever practically confined to the localities where it now exists until cold weather shall set in.

The epidemic of fear which seized upon the entire population within a radius of five hundred miles, when the occurrence of yellow fever at Ocean Springs was first announced, seems to be gradually subsiding, although its influence is still seen in the shotgun quarantine which nearly every hamlet in Alabama and Mississippi has established against its neighbors. In some places there is a double line of shotguns, one at the outskirts of the town, guarding it against approach from the country, and the other a short distance outside of that, guarding the surrounding country from an invasion by the urban population. In the mean while in neither locality is there any fever, and the result of this senseless panic-inspired quarantine is to keep the community in a state of constant apprehension, to shut out the necessary supplies, and to put an end to all business. The sooner such baseless alarm as this subsides, the better it will be for the country at large as well as for the communities where it prevails. The fear exists chiefly in places where there is not the slightest danger of an outbreak, while in those where the disease actually prevails the situation is regarded with comparative calm.

The effective work of the Marine Hospital physicians and of the local boards of health is aided by the weather, which has become cool all over the country. Although no frosts can be expected on the Gulf Coast and the neighboring parts of the interior for some time, the temperature has nevertheless fallen sufficiently to exert a very favorable influence upon the course of the epidemic, if the mild prevalence of the disease at this time can be dignified with such a title. It is a fortunate circumstance that the disease appeared so late in the season, for, however well it might have been gotten under control, it would almost certainly have lingered in the large cities until the advent of cold weather, thus making them dangerous for unacclimated persons to visit. As it is, however, there are only a few weeks of warm weather remaining in which yellow fever is possible in those latitudes. According to Dr. Touatre, of New Orleans, the history of all previous outbreaks of yellow fever in that city shows that no epidemic, however severe, can long survive the cold that is sure to come in October. The great epidemics have always begun to wane with the first cold of that month, and have practically disappeared entirely in November. Several years are recalled in which the fever broke out in August or later, and was quickly killed by the frost before it had the opportunity to assume the proportions of an epidemic.

With the coming of frost and the disappearance of the fever the danger will not be over, however, for the frosts of an entire winter do not always destroy all the concealed germs of the disease. It will be a matter of general concern, therefore, that the places which have been invaded by yellow fever this year be thoroughly cleaned and put to rights during the winter, for unless the warning of the present visit is heeded some of the infected cities will very probably see a return of the disease with the first heats of summer. To trust to the efficiency of quarantine while neglecting local cleanliness, is to live in a fool's paradise.

THE MODERN TREND OF PHARMACY.

ANY one who will persue carefully the number of excellent papers read at the recent meeting of the American Pharmaceutical Association, will be impressed by the fact that legitimate pharmacy, both from scientific and business standpoints, is in a bad way.

Mr. William C. Alpers, the chairman of the scientific section of the association, in an able address on the "Modern Trend of Pharmacy," is quite emphatic in the declaration that the conscientious and scientific pharmacist of to-day is by no means a thriving and prosperous member of the business community. To give becoming emphasis to his position, he significantly repeats what very many of his confrères have said often enough before, that "Pharmacy has ceased to be a science; it is a mere trade, and a poor one at that." In this respect its twin sister, medicine, can give it due sympathy and meet it on common grounds of mutual condolence. Both sciences are threatened by the monopolistic tendencies of wholesale prescribers and wholesale manufacturers. What the hospital and dispensary abuse is to medical practice, such is the modern pharmaceutical plant with large capital and advertising push to the ordinary dispensing pharmacist.

In this connection Mr. Alpers significantly asks: "How many truly pharmaceutical laboratories con-

nected with the shops are there to-day? How many pharmacists can vouch for the correctness of their preparations because they made them? If we ask a young graduate from any of our pharmaceutical colleges whether he prepares his own potassium iodide or iron sulphate, he will probably consider us jokers; and yet there are old pharmacists now living who were taught to prepare their chemicals themselves and who actually did so in their younger years."

While this state of affairs may interfere in a great measure with shop preparation of different compounds, it is nevertheless the fact that the large manufacturers can afford to make and sell their products much cheaper than a retailer who cannot buy expensive machinery and who has not the necessary capital for competition in an open market. For purely business reasons there is hardly any other argument to be offered than that which applies to the survival of the fittest. It has come to pass, then, that the competent retail compounder cannot compete with the equally conscientious wholesale manufacturer. This, however, does not interfere with the retail pharmacists being the recognized dispensers of such cheapened articles. But there are many other troubles in the way, as duly noted by different members at the meeting in question.

It is claimed with reasonable show of truth that the doctors and apothecaries too often cross forbidden lines in relative interpretation of privileges. The doctors, for instance, are given to dispensing their own medicines; while, on the other hand, the apothecaries are constantly indulging in counter prescribing. The bone of contention is held at either end by the opposing parties, while the real meat is in the middle. Each to get the whole is pulling with all his might in different directions.

The remedy suggested by one writer, Dr. F. E. Stewart, who is both M.D. and Ph.G., is that the apothecary split the difference by prescribing for minor cases and be legally qualified to do so. This is claimed to be the remedy for increasing the prescription business, while it would not seriously harm the doctor. The apothecary would be sure to sell some medicine, when the doctor would not be likely to see the patient at all. Thus it is tacitly admitted that the doctors and druggists are natural rivals, and, taking a pharmaceutical view of the situation, the house is divided against itself. While the respective parties muse the fire burns, and the innocent cause of the trouble—the patient himself—either buys his drug without question, prescribing for himself, or becomes the easy dupe of the advertising quack. The doctor, to keep what patients he has, gives medicines with his advice; and the apothecary ekes out extra profits by selling tooth picks, hair brushes, and perfumery. Thus it appears that both professions are degenerating into the merest trades, and are forced to deplore the lamentable existence of a cut-throat competition.

Contagion and Prison Discipline.—The lockstep has been abolished at the Detroit house of correction because it was thought to facilitate the spread of contagion.

THE MILK PHILANTHROPIST AND THE HEALTH BOARD.

The health board has scored a mild sensation by securing the technical conviction of a well-known and well-meaning philanthropist, on the charge of selling a specimen of milk below the claimed nutritive standard. In the testimony for the prosecution it was stated by the inspector that "the sample from one can, when analyzed by the chemist for the health department, was found to be a trifle below the required standard." On the contrary, it was also admitted that the methods of sterilization adopted by Mr. Straus, the defendant in question, had been formally approved by the board, that the milk at other depots had been found to be of excellent quality, and was far above the legal standard. Even the justice, in passing sentence on what he acknowledged was merely technical grounds, was impelled to apologize for his decision, and took occasion to compliment the alleged culprit on the truly laudable motives of his enterprise. The motives of the health board were apparently not under discussion, save in the very paradoxical assertion that the said board had no desire to cast any reflections on the work or to hinder it in any way. It is somewhat difficult to understand, in view of the latter assertion, why legal proceedings should have been instituted because of a single accident or oversight, when a more prompt remedy could have been found by notifying the proprietor, who would doubtless have been only too glad to remedy the difficulty. It would appear to be a matter in which strictly legal right on the part of the board should have been tempered with a little discretionary mercy. The board has immense powers under the law, but it cannot be too circumspect in using them. Above all, it should be particularly careful to guard against all suspicion of persecution. In spite of the verdict, the public will not believe that the good citizen is really guilty of any culpable wrong, while the board will miss much of the credit which might have belonged to a well-considered action.

ORIGIN OF THE VERTEBRATES.

Despite the many strides made in recent years—more particularly in chemistry, biology, and astronomy—it may be doubted whether the problems of the origin of life are much nearer their solution; in truth, so many fresh facts have been accumulated and so many new sources of discovery have been opened, that in many ways we would seem to be in more of a fog than before. That Darwin has not said the last word in regard to evolution is certain. Dr. Stuart Jenkin, of Sudbury, Ontario, proposes to explain man and the other vertebrates by the theory of parasitism. There is, he thinks, but "one theory which seems adequately to explain these hitherto obscure points; and it is this—that the vertebrate organism, instead of being a single organism which has been evolved from a simple to its present highly complex form by a gradual and cumulative differentiation, is, in fact, a compound made up of two distinct organisms constantly associ-

ated. In other words, that the divergence of the vertebrates from the lower type was caused by the parasitic implantation of one organism of the ganglionic type upon another, the implanted organism giving rise to the cerebro-spinal nerve system and internal skeleton. More than this, I am convinced that the ganglionic type is itself a compound, the ganglions being parasitic on a simple cellular matrix."

The paper explaining these views was first published in the *Medical Age*, and has been issued as a reprint. Dr. Jenkins' theory cannot be said to be lacking in ingenuity, whatever else may be thought of it.

News of the Week.

Hospital Ships.—The Red Cross Society of Japan has given orders, it is said, for the construction of two thoroughly appointed floating hospitals, of twenty-six hundred tons each, for the treatment of the wounded in time of war. The good accomplished by the hospital ships during the war between Greece and Turkey is said to have been the inspiration for this move on the part of the Japanese Red Cross.

The Women's Medical School in St. Petersburg.—The first course has begun in this new school for women, with a class of one hundred and sixty students, nearly an equal number of applicants having been refused admission for want of room. It was at first determined that only orthodox Christians should be admitted to the school, but a recent ukase had modified this to the extent that women other than Christians may be received, provided the number of them shall not exceed five per cent. of the total. There are accordingly eight such in the first class, so many having applied that the full complement allowed by law was admitted. They are obliged to pursue the same course of studies as their orthodox sisters, and this includes the study for six months of dogmatic theology. The other subjects for the first year are anatomy, histology, physiology, botany, and chemistry.

Rheumatism a Form of Pyæmia.—Dr. Singer, of Vienna, asserts that acute articular rheumatism is due to the presence of pus microbes in the tissues, and that it is therefore a modified form of pyæmia. Following out this theory, he believes that the true specific treatment of the disease consists in the intravenous injection of a sublimate solution, and he claims that this will cut short the disease and prevent valvular complications much more effectually than salicin or salicylic acid. His experiments and investigations were conducted in Weichselbaum's clinic.

Bowery Liquor.—The health board of this city has been making an analysis of the beer and whiskey sold in the "dead-houses" for three cents a glass. The beer was said to be of good quality, containing only hop bitters, and no injurious adulterants were found. The whiskey was artificial in almost every sample analyzed, being made from cologne spirits (containing about fifty per cent. of alcohol by volume), colored by caramel, and flavored by a small amount of a non-injurious essence. In the chemist's report it was said that this made whiskey is probably less injurious to the system than a genuine new whiskey of the same alcoholic strength, containing twenty-five per cent. or over of fusel oil. The proportion of alcohol in the diluted stuff sold for three cents an ounce was only about sixteen per cent.

Sir William Gowers has been elected an honorary member of the Russian Medical Society of St. Petersburg. This society was established in 1833, and is one of the oldest medical associations in Russia. Professor Popoff, of the Imperial Military Medical School, was elected president of the society at the beginning of the present year.

The American Public Health Association.—The coming meeting of this association in Philadelphia, from October 26th to 29th, will be the silver anniversary of the association, and the attendance and the number of papers read will probably be larger than at any previous meeting. A feature of the meeting will be an exhibit of hygienic and sanitary appliances, preparations, etc., including all articles capable of furthering or preserving public or personal health.

New York State Association of Railway Surgeons.—The seventh annual meeting of this association will be held at the Academy of Medicine, New York City, on Tuesday, November 16, 1897, under the presidency of Dr. J. Frank Valentine, the chief surgeon of the Long Island Railway. Dr. C. B. Herrick, of Troy, is the secretary of the association.

A Great Medical Journal.—The London *Lancet* for August 21, 1897 (students' number), consists of eighty pages of text and one hundred and forty-four pages of advertisements—in all, two hundred and twenty-four pages. It is said to have a subscription circulation of twenty thousand copies a week.

Dr. Stephen Smith has been appointed by Mayor Strong a charities commissioner, to succeed Mr. Silas C. Croft, who has been appointed to a federal office. Dr. Smith has been a member of the State Charities Aid Association, and is thoroughly familiar with the work of the charities department.

Delaware County (Pa.) Medical Society.—The regular monthly meeting of this society was held at Chester, Pa., on September 10th. Dr. E. Marshall Harvey, of Media, read a paper on "Cholera Infantum"; Dr. Frank J. Evans, of Chester, one on "Milk"; and Dr. J. F. Forwood exhibited a fibrocystic tumor.

"The Zoological Bulletin" is the title of a new journal, issued as a companion to the *Journal of Morphology*, designed for shorter contributions in animal morphology and general biology. It is published by Ginn and Company, under the editorial supervison of C. O. Whitman and W. M. Wheeler, of the University of Chicago. The first number, that for August, 1897, contains articles on "The Morphology of the Petrosal Bone and of the Sphenoidal Region of the Skull of

Amia Calva," by Edward Phelps Allis, Jr.; "Recent Experiments on Regeneration," by Charles W. Hargitt; "The Metamerism of Nephelis: A Contribution to the Morphology of the Nervous System, together with a Description of Nephelis Lateralis," by Charles Lawrence Bristol; and "Remarks on the Question of Intercalation of Vertebræ," by G. Bauer.

To Further Woman's Health.—A lady in St. Petersburg, Mme. Woltov, has in hand the establishment of a new club or association, the sole object of which is to be the hygienic development of women. The Tsaritsa is said to approve heartily of the project and to have lent it the aid of her influence.

Dr. S. Henry Dessau has resigned his position as chief of clinic to the children's department, Mt. Sinai Hospital Dispensary. In a letter from the chairman of the dispensary committee, Dr. Dessau's resignation was accepted with expressions of appreciation of his faithful services.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending September 18, 1897. September 16th.—Assistant Surgeon H. La Motte was placed on the retired list, September 15th, for physical disability.

The Victorian Order of Nurses. — Notwithstanding the vote of the British Medical Association in favor of this scheme, the medical profession in Canada does not support it with much enthusiasm. The *Canadian Medical Review* says that it thought the movement was dead, but it would seem that there is still a little vitality in the cause, or rather a little sympathy for it in its moribund condition. At the meeting of the British Medical Association, Dr. Roddick moved that the scheme be approved, and in courtesy to him, our contemporary says, the motion was allowed to pass. But it adds that "the Ontario Medical Council, the Ontario Medical Association, many smaller medical societies, many medical men, and especially those in Manitoba, have expressed themselves as opposed to the whole scheme. These should know better than our British visitors. This resolution of the British Medical Association may let the affair down easily, by showing that some at least sympathized."

Drinking in England.—The report of the inspector of inebriate asylums in England, which has just been issued, states that drunkenness is increasing not only among the poor, but also among the upper classes, and especially among women of all classes. Out of 442 male inebriates treated at the Dalrymple Home and discharged as cured, 101 were university men, and 316 of the remainder were well educated; 235 were married, and the others were widowers or bachelors. In 228 cases sociability was said to be the cause, ill-health caused the downfall in 36 cases, and overwork was given as the excuse for taking to drink in 32 cases. In fifty-five per cent. of the cases the excess was traceable to predisposing hereditary causes. About one-third of the cases treated are permanently cured. Out of the 442 patients discharged from the Dalrymple Home, 372 were kept trace of, and of these 149 were said to be entirely cured, 24 had improved, 164 had relapsed, 31 were dead, and 4 were insane.

The Westchester (N. Y.) County Medical Society.—The annual meeting of this society was held at New Rochelle on Tuesday, September 21st. Dr. Hermance delivered the presidential address. A paper on tuberculosis was read by Dr. Stubbert, of Liberty; and one on hysteria by Dr. Grainger, of Bronxville.

The Plague is reported to be increasing in the Bombay presidency. Several Europeans are among those who have been attacked at Poonah. A despatch to the London *Daily News* from Odessa says that the plague has broken out in the northern Caucasus. A sanitary commission has been sent from Tiflis to determine the nature of the disease prevailing there, and to take all necessary measures to prevent its spread in case it proves to be the bubonic plague.

Obituary Notes.—Dr. Samuel McNutt Ross died at Altoona, Pa., on September 13th, aged seventy-three years, in consequence of injuries received by being knocked down by a wagon. He was graduated from Jefferson Medical College in 1850, and had been engaged in the practice of medicine at Altoona since 1875.—Dr. Francis Rizzo died at Philadelphia on August 11th, at the age of fifty years. He was a native of Italy, and was graduated from the medical department of McGill University in 1877. For five years he resided in Florida, subsequently removing to Philadelphia.—Dr. John Rendell, of Brooklyn, was thrown from his surrey on Wednesday of last week, sustaining a fracture of the skull, and died in St. John's Hospital the following day, without having regained consciousness. He was a graduate of the Long Island College Hospital Medical School.—Dr. Theron Tuttle, of Brooklyn, died at his home in that city on September 16th. He was born in Hartford in 1833, and was a graduate of the College of Physicians and Surgeons, New York, in 1854. He had practised medicine in Brooklyn for nearly twenty-five years.

The Late Dr. John J. H. Love.—At a regular meeting of the Orange Mountain Medical Society, held September 10, 1897, the following resolutions were adopted:

"*Resolved*, That in the death of our late friend and associate, Dr. John J. H. Love, this society has sustained a loss which we deeply mourn. A constant attendant upon its meetings, its welfare was ever his earnest care. His voice was invariably raised in behalf of progressive medicine and surgery, and his well-weighed opinions were received with that attention and respect which they always merited.

"*Resolved*, That we tender to his family our sincere sympathy in their bereavement, and that a copy of these resolutions be spread upon the minutes of this society and published in the medical press.

"William Pierson, M.D.,
"H. B. Whitehorne, M.D.,
"James S. Brown, M.D.,
"Committee."

Society Reports.

TWELFTH INTERNATIONAL MEDICAL CONGRESS.

Held in Moscow, August 19, 20, 21, 22, 23, 24, 25 and 26, 1897.

Special Report for the Medical Record.

SECTION IN SURGERY.

(Continued from page 404.)

Fifth Day — Wednesday, August 25th.

Orthopædic Treatment of Tuberculous Joint Disease.—Dr. Dollinger, of Budapest, read a paper on this subject. He thought the important principle of the treatment of tuberculous joints with apparatus is as far as possible the absolute fixation of the joint with separation of the articular surface by gentle but firm extension. The apparatus must be as light and as unobtrusive as possible, and so arranged that the points of pressure will not interfere with nutrition of the skin.

Dr. Hoffa, of Würzburg, exhibited apparatus for practically treating all the affections of the lower extremities that may demand the help of the orthopædic surgeon. The principle worthy of attention was that the employment of flexible steel in the apparatus practically takes the surgeon out of the hands of the instrument maker. One of the great objections to the free employment of apparatus had been the state of servile dependence on the mechanic in which they placed the doctor. The fulfilment of special indications was often almost impossible, as the instrument maker would follow his models, but with this flexible steel the shape of the apparatus could be changed at will, and yet would be firm enough for all practical purposes.

Orrhotherapy of Cancer.—Dr. Sematzky, of St. Petersburg, presented a communication on the serum treatment of malignant neoplasms. Streptococcic serum was employed, but absolutely without results. Virulent cultures of streptococci were also employed; these seemed not only to do no good, but to be absolutely harmful. A thorough trial was given them, frequently several times in the same patient, though often against the speaker's better judgment, but no encouraging results could be obtained.

Dr. Pavlovsky, of Moscow, in discussing the subject, reported the case of a teacher in the public schools in whom a tumor developing on the jaw was diagnosed as sarcoma. It seemed inoperable from its size and from the probability of deep glandular involvement. Erysipelas toxins were used and with success, for the tumor had disappeared and for more than a year the man had been entirely well.

Dr. Fabrikant, of Kharkov, said that in his experience the serum treatment, as well as that by aniline injections, had given absolutely no results in cancer.

Permanganate of Potassium in Lupus.—Dr. Kachanovsky, of St. Petersburg, read a paper on this subject. He employs powdered permanganate of potassium. The powder, freshly prepared from dehydrated dried crystals, is applied in a layer, three to five millimetres in thickness, over the whole surface of the lupus and the suspected portions of the surrounding tissues. In case of deeper ulcerations with undermined edges, the powder is applied after curetting two or three times in order to level the uneven surface. In all cases a layer of medicated cotton is put over it to keep the powder in place and absorb the secretions and eliminated material. In most cases a single application of the powder suffices. He has employed the powder now in more than thirty cases since 1878, and always with complete success.

Hot-Air Treatment of Lupus.—Dr. E. Hollander, of Berlin, had first tried the local application of steam for lupus but without result, as the patients were unable to stand a temperature sufficiently high to affect the diseased tissues. Then he tried hot air. His apparatus consists of a Bunsen burner, on the top of which is mounted a coil with a tube passing through it. To one end of the tube is attached an air-pressure bulb for driving a current of air through the coil; the other end is left open. A current of air heated to 300° C. may be driven through the coil and directed very exactly by the patient himself, so that it affects only the diseased parts. The mode of action of the process is, according to the author, as follows: The intensely hot air produces an active contraction of the vessels of the skin and of the diseased tissues. They become blanched and bloodless; after two or three days the blood returns to the supporting framework of connective tissue, but not to the diseased granulation tissue. Cicatrization sets in and a radical cure results.

Dr. Schulz, of Duisburg, had had very good results from extirpation of the diseased part followed by Thiersch's skin transplantation. The success of the process depends on the thorough removal of the diseased tissue. If any of this is left, reinfection of the whole surface will often follow and absolutely prevent the skin grafts from taking.

Conservative Treatment of Hip Disease.—Dr. V. Menard, of Berck-sur-Mer, read a paper on this subject. From 1894 to 1897 he had had under treatment six hundred and fifteen cases of coxalgia. Two hundred and sixty-one of the cases were without the formation of pus. These were treated without question of operation, the lighter cases being kept at rest with continuous extension, the severer cases with absolute immobilization by plaster apparatus. During convalescence the patients were allowed to move around with an immobilization apparatus. In one hundred and eight cases an abscess had to be treated. All were treated with modifying injections of camphorized naphthol. In ninety-four cases a cure was obtained after from two to ten injections, very seldom more. In six cases a persistent fistula remained, and in eight cases in which after a long series of injections no improvement was noticed resection of the hip was done and was followed in seven cases by primary union, in the eighth by a fistula that persisted for five months. In the six hundred and fifteen cases of hip disease, in five years the mortality was twenty-two. There were nine deaths without operation, from meningitis, cachexia, and visceral tuberculosis; thirteen after operation, four of these from shock. The principle of treatment insisted on was not to convert a closed aseptic hip-joint abscess into an open one with all the dangers of mixed infection.

Intra-Articular Injection in Tuberculous Joint Disease.—Dr. Cazin read the paper in his own name and that of Dr. Duplay, of Paris. After having tried intra-articular injections of iodine for some time, the authors now limit themselves to the use of iodoform, either in the form of a mucilage or a ten-per-cent. ethereal solution. The solution in ether has the inconvenience of causing considerable pain, so they prefer the mucilage holding in suspension one and one-half grams of iodoform. The injections are made twice a week, unless improvement is slow, when they are made every second day. The results have been very satisfactory. It is especially in white swelling of the knee that the injections of iodoform have given good results when combined with immobilization, compression, and extension.

Massage in Surgery.—Professor Zabloudowsky, of Berlin, read a paper with the title, "Remarks on

the Employment of Massage in Surgery Supported by Observations from the Berlin University Surgical Clinic." He regarded massage as of the greatest use to the surgeon, and said that the method was so simple and its employment required so little time that all surgeons could practise it.

Flatfoot.—Dr. Bloch, of Paris, presented a communication on "The Treatment of Painful Flatfoot—Tarsoptosis and Tarsalgia—and the Cuboid Symptom." He said that there is a solidarity in the structures of the foot, and that the plantar arch like every other depends on the strength of each of its component parts. There is in the foot a *locus minoris resistentiæ*, and it is found in the cuneo-cuboidal convexity. Any muscular or ligamentary insufficiency uncompensated for makes itself felt at this joint and produces the so-called painful flatfoot. For this Dr. Bloch proposed the name tarsoptosis.

Suture of Arteries.—Dr. Djemil Pacha, of Constantinople, read a paper on this subject. He reported two cases of wounds of large arteries closed by sutures. In one of his cases, during an operation for mammary cancer, the axillary artery was torn, a slit fifteen millimetres long resulting. With a fine needle he sutured the arterial tear together, using five sutures. Then the connective-tissue coat was sutured above it. The arterial current was at once established, and only slight pressure for a few minutes was necessary to stop the exudation of blood at the points of suture. This was two and one-half years ago, and there is not the slightest trace of traumatic aneurism or any abnormality of the vessel. A second case of the same kind was treated in the same way, with like result.

Dr. Nitze, of Berlin, presented a communication on the same subject, and exhibited an instrument for the preservation of the arterial coats from undue pressure after suture. The divided halves of a cylinder of ivory or bone are fastened to the ends of a small pincette. When brought together around the artery they cover the sutured place and relieve the parts from pressure, so preventing the danger from secondary hemorrhage which might result from overtension on the sutures. He considers that it is no longer justifiable for a surgeon to tie a large artery and run the risk of gangrene. Even when an artery is torn completely across its lumen may be restored after resection and suture.

Metastases of Endotheliomata.—Dr. Scriba, of Tokio, read a paper "On the Clinical Diagnosis of Endotheliomata and their Special Manner of Giving Metastases." He said that these tumors, arising from the endothelium of the smallest vessels, are much more frequent all over the body than is generally supposed. They have been taken for carcinomata most frequently, from their tendency to metastasis in the lymph glands, but sometimes also for sarcomata. Clinically they may be differentiated by their metastases differing from sarcomata, in that they give metastases to the lymph glands, and from cancer because their metastases are not so hard, grow more rapidly, and are not painful.

Spontaneous Gangrene.—Dr. I. Munk reported a case of spontaneous gangrene of the fingers, occurring in a child, three years old, within a short time after a severe attack of scarlet fever. He thought it very probable that spontaneous gangrene in run-down subjects is due to the fact that the lowered resistance of the tissues enables microbes in the blood current to make an extremely rapid growth when the blood current is slow in the extremities, with the resulting production of an amount of toxin that acts fulminantly in the local tissues, causing their death.

Roentgen Rays in Diagnosis.—Dr. Levy, of Berlin, read a paper on a new development in the application of the *x*-rays for diagnostic purposes. The new method avoids all the disadvantages of inflammation of the skin, long exposure, etc. Its success is based upon: (1) A special form of tubes, which gives double and triple the usual quantity of *x*-rays; (2) by using a special "shortening" fluorescent screen; and (3) by employing special plates or films which are coated with the sensitive material on both sides. By means of this apparatus it is possible to take a radiograph of any part of the human body, even the pelvis, in a time not exceeding one minute.

Excision and Suture of the Ulnar Nerve, Six Months after Accidental Division.—Dr. G. B. Ferguson, of Cheltenham, England, reported the case of a young lady who fell through a skylight and cut herself seriously, including the right ulnar nerve. This was not noticed at first, and the wounds were sewn up. Very soon, however, muscular weakness was noticed in the healed arm and total ulnar anæsthesia. An operation for suture was proposed and declined, and every alternative plan of rubbing and electricity was employed. At the end of six months the arm was much shrunken and of but slight use, and the hand was quite claw-like, owing to the shrivelling of the interossei. Owing to the anæsthesia the affected side of the hand was constantly receiving unperceived injuries, and on one occasion she literally boiled her little finger to warm it. This was, of course, followed by long and painful sores. At last, after six months, the parents asked for an operation. The divided ends were soon found, much separated and much degenerated. Fully an inch was excised, which made it hard to bring the ends together. But after considerable separation and stretching this was effected, and a splice was made with catgut. After two days sensation began to return and the parts soon became even hyperæsthetic. It was many months before the plumpness of the muscles began to return, but return it did, and now, rather more than two years after the operation, all is strong and normal, save that that hand is wont to be colder on the ulnar side.

Skin Grafting.—Dr. Linngrenn, of Trelleborg, Sweden, read a paper "On the Faculty of the Human Epithelium to Preserve its Vitality apart from the Organism for Purposes Especially of Skin Transplantation." He has in a large number of cases transplanted to the surface of fresh and granulating wounds portions of human epidermis, after they had been kept for from one day to six months in sterile serum. In most of the cases the grafts took and formed a layer of skin just as in the ordinary method of skin transplantation.

Irrigation Treatment of Gonorrhœa.—Dr. Vigneron, of Marseilles, read a paper on the results of the irrigation treatment with permanganate of potassium in eighty-three cases of urethritis in which gonococci could be demonstrated. In twenty-three cases treatment was begun within forty-eight hours after the appearance of the discharge. These gave the most favorable results, viz., eighteen cures after from four to fourteen irrigations; four cures after from six to eight weeks of treatment; one case disappeared from observation after the ninth irrigation, still having some discharge but without gonococci. All the others were perfectly well fifteen days after their last treatment. All the twenty-three cases except three were cured by the permanganate. These had to have two or four irrigations with sublimate to complete the cure.

Pathogenesis of Deformities.—Dr. C. Ghillini, of Bologna, read a paper on this subject. He held that all deformities of bones are due to pathological conditions in the epiphyseal cartilages. This is true not only for deformities that occur in the articular ends of the bones and in the immediate neighborhood of the epiphyses, but also in deformities occurring in the diaphyses of long bones. It is true that here ab-

normal tension, pressure, and traction play a rôle in producing deformity, but they act by affecting primarily the epiphyseal cartilage.

Incision of the Pericardium.—Dr. Voïntch Sinogensky, of St. Petersburg, read a paper on "The Removal of Moderately Large Purulent Exudate in the Pericardial Sac by Open Incision." He said that, while a number of methods may be employed to remove the purulent exudate from within the pericardium when it is of considerable size, most of these methods are not so applicable to small quantities of exudate. The weightiest consideration in the matter is the position of the anterior edges of the pleura as regards the anterior thoracic wall. The space between the pleura in front is not very uniform in size and position. Small amounts, not more than one hundred and fifty cubic centimetres of purulent pericardial exudate, do not alter the position of the heart and pericardium as he has noted in thirteen cases on the cadaver, but a number of different diseases of the internal organs materially change the position of all the thoracic viscera. In general it may be said that there is more room for a longitudinal than for a transverse incision. Despite the various positions possible to the pleura in front, there are certain points that act as guides. An incision made between the fifth and seventh costo-sternal articulations avoids the pleura and pericardium. An exploratory puncture made in this line with a fine needle which is inserted only moderately deep, 1.5 to 2.5 cm., is absolutely without danger. The tubercle of the sixth left sterno-costal articulation serves best as a guide for the skin incision and is usually easy to find on the surface.

SECTION IN MEDICINE.

Third Day—Monday, August 23d.

Clinical Forms of Hepatic Cirrhosis.—Dr. Chanfard, of Paris, read a paper with this title. The clinical analysis of the different types of hepatic cirrhosis, to be complete, should show in each individual case the anatomical process, the pathogeny, and the course. First he defined what was to be understood by the term cirrhosis of the liver. Three conditions must be present in order to justify the diagnosis of cirrhosis: (1) The proliferation should be general, distributed throughout the entire liver; it may predominate in one or another region, but it must always be diffuse. A pericystic or pericalculous sclerosis cannot be called cirrhosis. (2) The new-formed connective tissue must be fibrous and full grown, rich in elastic fibres approaching that of cicatricial tissue. (3) The process must not be absolutely confined to the interstitial elements, but the cells must also be affected. To classify properly the hepatic cirrhoses one must take into consideration the anatomical changes and the nature of the agent producing them; in other words, the classification ought to be anatomical and at the same time etiological. We cannot understand why some hepatic cirrhoses run an acute, others a subacute, and still others a chronic course, unless we appreciate that we are in the presence of a process more or less distinctive, according to the manner and the duration of its action. Clinically, as well as by experimental pathology, we know that every toxic agent or infection capable of producing a cirrhosis can, under proper conditions, provoke any degree of inflammatory or degenerative reaction in the hepatic cell. We learn this by the study of the principal forms of cirrhosis, where we see that the irritant action of large doses of a given agent kill the cell, while the same agent in small doses continued over a long period provokes sclerosis and only later or secondarily affects the cell. So the irritant agent may be too powerful or too feeble to produce cirrhosis, as we see in the case of phosphorus or lead poisoning. Again, under proper conditions the one agent may act only on the cell or it may act to produce cirrhosis; thus the toxin of syphilis in the second stage may cause a syphilitic icterus, while at another period, when less virulent, it is essentially cirrhogenic. Tuberculosis shows this even better. If we inoculate the liver experimentally with human tuberculosis, it causes not only tuberculosis but fatty and coagulation necrosis in the liver; if we inoculate it with aviary tuberculosis, sclerosis is the usual result. Cirrhosis is therefore always the result of the action of a poison in small doses long continued; the sclerotic reaction of the connective tissue corresponds to a defensive resistance on the part of the liver to the poison, and when the toxic agent is too violent it provokes necrobiotic degeneration, but not cirrhosis. All this applies to venous cirrhosis. As to biliary cirrhosis, the question is much more obscure, since we know nothing certain of its pathogeny. If it is infectious in origin, as affirmed by Hanot, it would appear to depend on a prolonged bacillary infection, and so comes under the laws just demonstrated. A cirrhosis once begun becomes soon a definite disease with its symptoms, its complications, its evolution, and its termination. These different clinical elements so group themselves as to individualize a series of types of cirrhosis, of which the descriptions are classic. But one has a very incomplete idea unless he takes into consideration also the anatomical and functional condition of the hepatic cells. Hanot expresses this very aptly when he says that the diagnosis of cirrhosis is made from the condition of the connective tissue, the prognosis from the condition of the hepatic cells. From experiments on animals (the removing of portions of the liver) we know that histologically hepatic lobules hypertrophy, that they can double or triple their size, at the same time that new lobules are appearing and developing alongside them; so we can believe that compensatory hypertrophy is a general law. Acknowledging this, we may distinguish three groups of facts: (1) The compensatory hypertrophy is insufficient or masked by the destruction more or less rapid of the glandular elements. Such is the case in the atrophic cirrhosis of Lænnec. (2) The compensatory hypertrophy may be sufficient to allow the patient years of life, but not a cure. The sclerotic process continues its work till one day secondary icterus appears and the patient dies. It is thus that the hypertrophic biliary cirrhosis of Hanot kills. We know how long the course of this disease is, and if the patient dies of an intercurrent affection we find the hepatic cells healthy, hypertrophied, or in full karyokinetic activity. But if the cirrhosis has time to complete itself we find the trabeculæ parted, the hepatic cells fragmented, deprived of their nuclei, or even fatty granular, and this especially in the centre of the lobules. (3) Finally the compensation may remain sufficient for such a long time that an apparent cure has taken place. We see this in the hypertrophic alcoholic cirrhosis of Gilbert and Hanot. From the works of these authors we know how different is the prognosis when the liver is atrophied or hypertrophied. In the latter case it is not rare to see under milk diet and diuretic medication the ascites disappear and the general condition improve to the point of apparently perfect health. The patient seems actually to be cured. The conclusion therefore is, the author said, that the liver reacts under the form of cirrhosis only when the pathogenic agent is relatively moderate and is prolonged; that the sclerotic process is to a certain point a proccess of protection and defence to the hepatic cell; that this in its turn participates in the disease either by compensatory hypertrophy or following the conditions is destroyed.

Dr. Gilbert, of Paris, followed with a communication on the same subject. He distinguished two grand categories, after Hanot: simple cirrhosis and complicated cirrhosis. In the latter, by addition to the sclerosis and atrophy or hypertrophy of the hepatic cells, there were various degenerations always extending to the parenchymatous element. In simple cirrhosis the pathogenic agent may come from within or from without the organism. The cirrhoses of auto-intoxication are the dyspeptic, the gouty, and the diabetic.

In dyspeptic cirrhosis Boix described the liver as large, smooth, remarkably hard, without increase in volume of the spleen, without icterus, ascites, or collateral venous ciculation. The duration is very long, even ten years. As a cause of this we may suspect the action of acetic acid, which is so frequently formed in the stomach of dyspeptics. Among the poisons from without which cause cirrhosis, the speaker mentioned lead and alcohol. It is more than a disputed question, he said, whether the former can cause cirrhosis; the latter causes it under two forms, viz., atrophic (Laennec) and hypertrophic (Hanot and Gilbert). Under the head of infectious cirrhosis, he mentioned those caused by the eruptive fevers, by typhoid fever, cholera, syphilis, and tuberculosis. Under the head of cirrhosis by auto-infection we have the biliary cirrhosis of Hanot and biliary cirrhosis by obstruction. Mechanical cirrhosis is another name for cardiac cirrhosis. The complicated forms of cirrhosis are those accompanied by fatty, amyloid, or pigmentary degeneration, necrobiosis, diffuse or nodular hyperplasia, and adeno-epitheliomatous changes.

Intercellular Hepatitis.—Dr. Carmona y Valle, of Mexico, described a special form of hepatic cirrhosis, occurring in the city of Mexico, which, he said, is not spoken of in the text-books. It is characterized by an enlargement with induration; constant icterus; continued, remittent, or intermittent fever; hemorrhage; digestive disturbances with continuous bilious diarrhœa; cerebral disturbances with ataxo-adynamic phenomena; frequently ascites; and it finally terminates in death. Its mean duration is six or eight months; but it may kill in much less time, or may last as long as a year and a half. It differs from the hypertrophic biliary cirrhosis of Hanot by its much more rapid progress, by its almost continuous fever, by the frequency of ascites, and by the fact that the spleen does not hypertrophy. The proliferation begins in the intra-hepatic veins, extends rapidly to the trabeculæ of the lobules and afterward to the ramifications of the portal vein. There is always destruction of the cells, and in some cases the connective-tissue proliferation is so abundant that it obstructs the vessels, so causing nodules, more or less large, of necrobiotic tissue which softens and forms cavities full of a creamy fluid.

Orrhodiagnosis of Typhoid Fever.—Dr. Widal, of Paris, read a paper on the serum diagnosis of typhoid fever, in which he gave in detail his method of obtaining the reaction and offered a theoretical explanation of its production.

Dr. A. Mills, of Brussels, followed with a paper entitled "On the Gruber-Widal-Grünbaum Sero-Diagnostic Method of Typhoid-Fever Auto-Reactions." In twenty-eight serum reactions made with cultures of like ages, but of variable virulence, the speaker said, he had constantly found that the rapidity with which agglutination was produced was inverse to the power of the virulence of the typhoid bacillus. He thought therefore that it was necessary to mention three elements before giving the results of a serum reaction. These are (1) the dilution of the serum of the patient, (2) the duration before the appearance of the serum reaction, and (3) the virulence of the culture employed. Dr. Mills then spoke of auto-reactions. It was interesting, he said, to determine whether the action of the blood in typhoid fever was the same when placed in the presence of other bacteria as when made to react through its own infecting bacteria. Out of eight cases the hetero-serum reaction was six times produced more quickly than the auto-serum reaction. In two cases the contrary took place. These differences were in perfect accord with the state of virulence of the cultures. In discussing the question as to whether the serum reaction is due to a natural or to an acquired immunity, he said that it could not be a natural immunity, because he had always observed that the agglutinative power increases with the infection so long as the intoxication of the blood is not too considerable, and that it does not disappear immediately with the infection. Consequently it must be an acquired immunity.

Dr. Widal, of Paris, asked Dr. Mills how he came to associate three names in this reaction, when up till now it has always gone under one name.

Dr. Mills answered that Gruber was the first to point out certain points in regard to this agglutinative reaction, and after Widal Grünbaum had suggested certain modifications.

Dr. Widal said that personally he esteemed both the gentlemen mentioned, admired the work that they had done, and felt it an honor to be associated with them, but till now he had not known that Grünbaum had modified the reaction to any such extent that would justify the addition of his name, and Gruber did not apply the reaction to the diagnosis of the disease. The principal point, however, was that he did not think Mills had the right to call the reaction by names not before associated without the permission of the men in question. As Mills had not asked his (Widal's) permission, he requested that his name be withdrawn from the title of the paper, and if it was lawful for the president to make the change he desired him to do so.

The President said that under the circumstances the three names would be erased from the title.

Orrhodiagnosis, Orrhoprognosis, and Orrhotherapy of Relapsing Fever.—Dr. Loewenthal, of Moscow, read a paper with this title.

Orrhodiagnosis: The foundation of this method consists in the influence of the specific bactericidal properties of the blood during each apyrexia of relapsing fever. The author had had thirty cases with a positive result, as shown by the course of the disease; nine cases of other acute infectious diseases, with negative result; and fourteen cases verifying the specificity of the blood during the apyrexia. From a study of these experiments he had come to the following conclusions: (1) The serum diagnosis furnishes us with a positive method for diagnosticating the disease in the course of one or two hours, when the patient is first seen in the apyretic period. (2) This is true even in abortive attacks (third and fourth attacks, or slight paroxysms) when the blood contains but very few spirilla. (3) After inoculating the patient with the anti-spirillum serum there will be no relapse in half of the cases. (4) The stay in the hospital will be shorter for the patient, especially since by error such cases are now often diagnosed as simple malarial fever.

Orrhoprognosis: The procedure is the same as in that of serum diagnosis. This method gives an exact criterion by which to prognosticate the cause of the disease. Acccording to Dr. Loewenthal's researches (fifty-eight cases), when the duration of the reaction was for one hour seven days after the first apyrexia, a relapse never followed.

Orrhotherapy: The speaker had inoculated eighty-four patients at the beginning of the first apyrexia—fifty-three per cent. relapsed, forty-six per cent. ended after one attack. During the same time, of one hundred

and fifty-two cases not treated by the serum, in only sixteen per cent. did the disease end with one attack.

Dr. Metchnikov suggested that the explanation of the spirillicidal action of the blood during the apyretic period of recurrent fever was not so simple as Dr. Loewenthal would seem to regard it. The whole reaction would seem to prove that there is some other influence at work besides spirillicidal material freely circulating in the blood. Gabrichevsky has shown that no definite rule can be laid down as to the spirillicidal power of the apyretic blood. Sometimes it kills in one and one-half hours, sometimes only in eighteen, sometimes not for thirty-six hours. Normal human blood will do the same thing in eighteen to twenty hours as a rule. In experiments on apes Bardach has shown that during the crisis of the fever and in convalescence living spirilla appear in the spleen and are infective when inoculated into other apes. If the liquid obtained from the spleen be gently heated it loses its infective property, thus showing that it is not in the form of spores that the organisms are present. It is almost proven then that it is not a new generation of organisms with greater virulence that causes the second attack after the apyrexia, but that some influence holding the organisms in check has been removed or paralyzed in its action. This is not likely to be any substance circulating freely in the serum, but is much more probably some living influence that in its cycle of existence loses its resistant power. This would speak very strongly for the phagocytic action of the leucocytes in relapsing fever. The irritation in the blood-making organs during an attack causes a leucocytosis which sets free a number of phagocytes to englobe the spirilla and hamper their action: after a while this generation dies off, setting free the spirilla that have not been killed and so leading to another attack.

The Pathogenesis of Typhoid Fever.—Dr. Francules, of Roumania, read a paper entitled "The Pathogenesis of Typhoid Fever and the Errors of the Current Microbian Theory," of which the following is a *résumé*: (1) Typhoid fever may, under certain conditions, arise spontaneously, that is, without the presence of the bacillus of Eberth. (2) The bacillus coli communis may, under favorable conditions, acquire pathogenic properties and produce typhoid fever. (3) It can preserve and transmit these new qualities to future generations. (4) These new generations may adapt themselves to new conditions, and, obeying the law of atavism, return to their primitive state. (5) It is incorrect to say that a germ must always and everywhere preserve its form and specificity, especially an absolute specificity.

The Malarial Parasite of Tertian Fever (with Demonstration by Lantern Slides).—Dr. Judson Daland, of Philadelphia, read the paper. The photographs from which these lantern slides were made were secured in the following manner: The thumb was cleansed first with water, then with alcohol, and finally with ether. It was then punctured: the emerging droplet of blood was placed upon a slide and then upon a warm stage and photographed within from twenty to forty minutes. The initial magnification was from one thousand to two thousand diameters, and a Zeiss apochromatic oil-immersion lens was employed. Not infrequently three photographs of the same parasite were taken at intervals of three or five minutes. The first picture, from a case of tertian fever, showed a large and small matured extracorpuscular malarial parasite, the pigment showing very well but not sharply outlined, as these particles were in a rapid dancing-movement at the time the photograph was made. The second picture showed a large moderately matured intracorpuscular plasmodium. The red blood corpuscle acting as the host of the parasite was a macrocyte. The original attack of the tertian malaria four years ago was acquired in India, since which time the disease recurred each succeeding autumn. This patient had received several hypodermatic injections of the bimuriate of quinine and urea with but little benefit. The third picture showed a matured extracorpuscular body photographed thirty minutes after removal from the patient during the interparoxysmal period. The duration of the exposure was one second and the magnification two thousand diameters. A second photograph was made in four minutes and no change was observed. A third photograph was made in six minutes, when the body was seen in the act of disintegrating. The large masses of pigment were seen free in the plasma and the protoplasm that had formed the parasite was seen as a number of globules of various sizes. This observation was especially interesting as showing the last step in the life history of a matured extracorpuscular malarial body. The sixth picture showed a free malarial body; the pigment granules were quite large and when photographed were in lively motion. The blood was taken from a case of tertian intermittent fever at the beginning of a chill. The seventh picture showed the same parasite ten minutes later, during which interval the pigment had shown a tendency to a bipolar distribution with a clear space in the central region. The eighth picture showed the same parasite ten minutes later, when the beginning of an hour-glass contraction may be plainly seen. The ninth picture showed the same parasite forty minutes later, when the body had completed its division. It would seem from the series that one of the methods of the multiplication of the plasmodium is by division. The last picture showed beautifully a crescentic body. Plainly could be seen what appeared to be the shell of the red corpuscle in which the parasite was inclosed. The pigment was motionless. The case was one of quotidian fever and the photograph was taken upon the third day of the absence of fever, during which time the patient received sixty grains of quinine in divided doses. Five days later, or eight days after the last paroxysm, these crescentic bodies were still to be seen, although but few in number. It seems not improbable that these crescents represent certain of the parasites that have come under the influene of the quinine and have been arrested in their development.

Gastroscopy.—Dr. Revidzov, of Moscow, read a paper on the technique of gastroscopy. The author proposed the following modification in order to replace the direct introduction of the metallic tube, which is sometimes dangerous: An English œsophageal sound, almost equal in size to the exterior metallic tube of Rosenheim's gastroscope, is introduced while the patient is in the sitting posture. Then, with the head bent backward, the othe. two tubes of Rosenheim's gastroscope are introduced—a procedure which can usually be done without difficulty.

Surgery of the Lung, like that of the viscera, has of late made much progress, thanks to the perfection of our anatomical knowledge and to the improvement in operative procedures for the arrest of hemorrhage. Equally favorable conditions for surgical intervention do not occur in all affections of the lungs. Wounds caused by contusing bodies, by stabbing and cutting instruments, and by gunshot projectiles of small and medium calibre, usually heal well without causing suppuration or troublesome reaction. The danger which results from such injuries is due, not to the injury of the lung structure itself, but rather to the multiplicity and extent of the wounds and to the lesions of important neighboring parts. The surgeon should not intervene too hastily in these injuries.—Péan.

BRITISH MEDICAL ASSOCIATION.

SECTION IN SURGERY.

(Concluded from page 457.)

Third Day—Friday, September 3d.

Resection of the Intestine.—Dr. F. J. Shepherd, of Montreal, reported a case of successful removal of six and one-half feet of intestine. The patient was a man, twenty-eight years old, who had noticed for some months an enlargement of the abdomen. The diagnosis was a retroperitoneal lipoma. On opening the abdomen, the tumor was found adherent anteriorly and laterally. It grew from the mesentery. Three feet of ileum attached to the growth, as well as nearly two feet on either side, had to be removed.

Penetrating Wounds of the Abdomen.—Dr. Tobias Nuñez, of Mexico City, presented a paper on "The Diagnosis and Treatment of Penetrating Wounds of the Abdominal Cavity." He pointed out how difficult it was to ascertain the true extent of wounds of this sort and the amount of damage done. The two great dangers were peritonitis and internal hemorrhage, the symptoms of which were well known. These complications might occur separately or together. If it was clear that the intestine was wounded, laparotomy was called for. But, generally, if the indications did not call for radical measures, the speaker leaned to conservatism in treatment.

Surgery of the Bile Ducts.—Dr. A. H. Ferguson, of Chicago, read a paper on this subject. He said that the surgeon alone could treat these cases successfully. Stone in the gall bladder or any of the bile ducts was as clearly a case for the surgeon as stone in the bladder. He did not mean that operation should always be performed as soon as a diagnosis was made, but a surgeon should be at hand to sit in judgment upon the clinical evidence. The speaker reported forty-six cases of various affections in this region which had come under his care.

Intestinal Obstruction.—Dr. A. B. Atherton, of Fredericton, New Brunswick, reported a case of intestinal obstruction caused by strangulation of a loop of ileum by Meckel's diverticulum. The patient, a man with a small umbilical hernia, had suffered from attacks of cramps once or twice yearly, attended latterly by vomiting and looseness of the bowels, induced apparently by errors in diet. After a dose of calomel these symptoms were relieved until the last attack, when this did not produce movement of the bowels. Vomiting was persistent, and when the man was seen by the speaker in consultation the facial expression was bad. The temperature was 99° F. The belly was distended. Tympanites was marked in the umbilical region. Tenderness and pain were especially marked below and to the right of the navel. There was no induration. Meckel's diverticulum was of the size and shape of a pear and partly gangrenous. A good deal of force was needed to draw the diverticulum out. The patient rallied fairly well, but his pulse ran up to 150, temperature to 101° F. within twenty-four hours, and the face looked pinched. The temperature afterward fell to normal, but the pulse remained high and the patient became delirious, and died thirty hours after the operation. Autopsy showed a loop of ileum protruding through a hole in the mesentery. There was considerable intestinal distention in the neighborhood, but no peritonitis. Only one case like this, so far as the speaker knew, had been reported.

Ureteral Stones.—Dr. Jordan Lloyd, of Birmingham, presented a communication on stone in the ureter and its treatment. He was struck some ten years ago, when work in renal surgery began, by the number of failures in discovering renal calculi. It happened in the hands of many men that in patients who presented all the symptoms of renal calculi none was found. Some had gone so far as to remove the kidney, and then had found no stone. In some of these cases the speaker was sure the condition was one of stone in the ureter. He reported the case of a man who had suffered from typical symptoms of renal calculus for three and a half years. An operation was performed, but no stone was found. Forty-five days later the patient was seized with acute pain which lasted a few seconds and then disappeared. In five or six hours a calculus was passed. In his next patient suffering in this way he resorted to the expedient, which he considered of great importance, of giving the patient a sudden very strong blow over the suspected site of the stone. This hurts only for a moment, causing a stabbing pain, very characteristic of stone. This patient, besides paroxysmal nephralgia, had shooting pains about the lower abdomen and hips. Hæmaturia was present. There was absence of kidney tenderness. His first step in diagnosis was to examine the bladder to determine that there was no stone there. The urine should be examined microscopically for blood. Then a group of symptoms should be looked for which are always associated with what he called "water-logged kidney," a "urotoxæmia." The patient looks excessively ill. The skin is moist, the pulse rapid (160 to 180), and the temperature is subnormal. There is abdominal distention caused by paresis of the intestines and the distress is extreme. He had been called in consultation to see a man by his physician, who stated that a curious condition was present—that the heart and lungs seemed to be much crowded upward, and he was unable to tell why. The man on inquiry gave a history of stone, and had left lumbar colic. This gave a clew. The ureter had become impacted and water-logged kidney was present, as indicated by one of its typical signs, viz., intestinal distention, which accounted for the crowding up of the thoracic viscera. Aspiration was done to relieve the distention. At the autopsy the pelvis of the kidney and the ureter were much dilated. Lumbar nephralgia with localized tenderness pointed to the position of the stone. Most cases of impacted stone would be found within the lower three inches of the ureter. The treatment in these cases was to cut for the stone, the sooner the better. If it was located near the bladder a suprapubic cystotomy gave the best results. The bladder should be opened, the ureter split up, and the stone extracted.

Dr. W. W. Keen reported a case in which there were symptoms of appendicitis. The fever was slight; the pain centred around the umbilicus, later being felt in the iliac fossa. There was nothing suggesting ureteral or renal trouble. On opening the abdomen no appendix was found. He did not think of stone in the ureter until the next day, when he did so with a strong twinge of conscience. Ten months later he removed a calculus from the patient's bladder. Dr. Keen said he thought that in every case of renal colic in which within two or three days no stone is passed the bladder should be evacuated with a Bigelow evacuator.

Appendicitis and Pyosalpinx.—Dr. Lapthorne Smith, of Montreal, gave a brief account of seven cases of appendicitis complicating pus tubes. He explained a new method of dealing with the appendix. Instead of leaving a stump and searing with carbolic acid, which he said was frequently followed by fistulæ by reason of the mucous surfaces not uniting, he cuts the appendix off flush with the bowel, thus practically treating a hole in the bowel.

Dr. Marcy, of Boston, said that he united the muscular and mucous coats and then invaginated the stump so as to bring the peritoneal coats together.

SECTION IN MEDICINE

Second Day—Thursday, September 23.

Crossed Hemiplegia.—Dr. J. E. Graham, of Toronto, reported a case of crossed hemiplegia, the result of injury of the pons Varolii, which came under his observation five years ago. The history taken at that time was as follows: A. L——, aged ten years, was perfectly well. When eighteen months old, fell, while playing, and a slender jagged end of a spruce stick, about two feet long, entered the mouth and penetrated the soft palate. In the fall, the stick broke off at the line of the teeth and was so firmly embedded in the tissue that it had to be moved from side to side and much force used before it could be drawn out. The sliver measured between three and four inches. Profuse hemorrhage followed. The accident occurred at 5 P.M. and the patient cried until 11 P.M., when vomiting of clotted blood commenced and immediately after vomiting convulsions set in which lasted two hours. A second series of convulsions similar to the first, but shorter in duration, came on the next day. On the third night he had a third convulsive attack and during the afternoon a fourth. The latter was followed by pain, which continued till morning, when paralysis of the right arm and right leg was noticed with affection of the left side of the face. The left eye was turned slightly inward and the pupil was contracted. He swallowed liquids with difficulty. No solid food was given. He vomited occasionally for two weeks and remained in bed for seven months. Since the recovery of his strength, he had had convulsions, at first several in a day, but latterly less frequent. The series would often last seven or eight hours. Latterly they have been only ten or fifteen minutes and sometimes five minutes in duration. For the last five years they have occurred at night and are more frequent during the fall of each year. Constipation seems to bring on the convulsions. His mind is always clear, but he is not so bright as other boys. The affected side is always colder than the other and the right hand, which is rigid during the day, becomes flaccid at night. On examination in 1892 the right chest was one and three-quarters inches smaller than the left, while the circumference of the right arm, forearm, thigh, and leg averaged about one inch less than the corresponding parts of the left side. The face was drawn slightly to the left. No motion of the muscles of the right forearm was possible except slight additional flexion of the fingers, which were always considerably flexed and could not be extended by ordinary force. Motion of all the muscles of the humeral region could be made with some awkwardness. In the lower extremity all the muscles seemed capable of motion, but the foot was capable of only about half the normal flexion on the leg. The patient had an awkward limp which seemed due in part to the loss of motion in the ankle-joint and in part to lessened general power over the muscles of the joint. The patellar reflex was less on the right than on the left side. Ankle clonus was absent, also the cremasteric reflex. The condition present now differs very little from that of five years ago, except that now there is no squint. No similar case, as far as the speaker knew, had been reported.

Dr. Mackenzie, of London, said that the fact that the paralysis did not develop for three days showed that it was due to an inflammatory condition.

Dr. Angell, of Rochester, spoke of a case of tumor of the pons he had had, which gave similar symptoms and which showed no reaction of degeneration in the muscles. He considered the paralysis in Dr. Graham's case therefore due to hemorrhage outside of the pons and not in it, otherwise the muscles would have shown reaction of degeneration.

Bacteriology of Pertussis.—Dr. Koplik, of New York, read a paper on this subject. The small white pellets found in the sputa when examined show a very small bacillus. In sixteen cases examined the bacillus was found in thirteen. It is motile, grows on agar, gelatin, blood serum, not on potato. It is one-half or one-third the length of the diphtheria bacillus, and is an exceedingly delicate organism.

Cardiac Murmurs.—Dr. Musser, of Philadelphia, read a paper on the murmurs of heart disease. Organic murmurs often disappear on change of position of the patient, but only rarely is there a disappearance of the mitral murmur due to organic disease. Often cases in which murmurs are present for a long time before death show no evidences at the autopsy of disease of the valves. The order of disappearance of organic murmurs is: (1) mitral obstruction, (2) aortic regurgitation, and (3) mitral regurgitation.

Tuberculin.—Dr. Whitaker, of Cincinnati, reported his six years' experience in the use of tuberculin. He mentioned the various theoretical objections to its use, but said that in no case during the past six years had any bad effects had been observed, nothing other than the characteristic reaction. It was without doubt a most valuable means of diagnosis. As soon as tolerance of the treatment has been effected it should be stopped and later commenced again. In nearly all cases there was improvement at the first, but as the fever in late cases was due to the products of other micro-organisms, streptococcus, etc., tuberculin would not be of much service here. Many times cases showed very great improvement, and although it could not be said that this was due to tuberculin entirely it certainly had a beneficial effect. Tuberculin was contraindicated only in miliary tuberculosis.

Arthritis Deformans.—Dr. James Stewart, of Montreal, opened the discussion on arthritis deformans, especially its relation to rheumatism, nervous diseases, and tuberculosis. He based his remarks on the observation of forty cases which he had had in Montreal; of these twenty were in males and twenty in females. This proportion varies from the usual figures of five males to one female. There was a family history of some form of rheumatic affection in eight cases, of tuberculosis in five, and of a neuropathic tendency in four cases. As to exciting causes the following were noted: There was a history of gonorrhœa in thirty per cent. of the male cases, and in three of the male cases was a history of two or more attacks. In the female patients, however, there was, with the exception of one case, an entire absence of symptoms pointing to a past genito-urinary disturbance. For a long time it had been thought that there was an intimate relation between uterine disease and rheumatic arthritis. Next to gonorrhœa, exposure to cold was considered the most likely exciting cause. It appeared to be the sole or chief cause in five of the forty cases. The next most frequent cause was worry, which was present in four cases. Three patients had had subcutaneous abscesses, two double otitis media, two influenza, and two tonsillitis. Typhoid fever, pertussis, and diphtheria were each considered the chief cause in one case. In fifteen per cent. no cause could be ascertained. More than fifty per cent. of the cases had thus some previous infective trouble, the most frequent being gonorrhœa. The reasons usually advanced for adopting the nervous origin of rheumatoid arthritis are: (1) The fact that in certain diseases of the spinal cord, as tabes, syringomyelia, progressive muscular atrophy, joint changes of a somewhat similar character are met with. (2) The very frequent early and pronounced muscular atrophy observed in cases of rheumatoid arthritis. (3) The history frequently obtained of causes

which have a marked affect in lowering the resisting-power of the central nervous system to disease. (4) The frequent onset of rheumatoid arthritis with symptoms of a nervous character, symptoms pointing to a central or peripheral nerve disturbance. In ten of the forty cases tingling and numbness of the extremities preceded the attack. It is difficult to explain the marked and early atrophy of muscles that occurs in rheumatoid arthritis. No matter what the cause is, it must be due in the first place to some change in the joint and not to any supposed changes in the spinal cord. It is in the first place an arthritic affection. The speaker had never been able to ascertain that there was an objective disturbance of sensation in rheumatoid arthritis. There was never a loss of sensation. Of the series of forty reported cases in only three was there a history of tuberculous trouble, a proportion not greater than if as great as in people in good health. Indirectly a tuberculous tendency may, by lowering the resistance, tend to bring about rheumatoid arthritis, and it is only in this sense that there is a connection between the two diseases. In a very considerable proportion of all cases a history of rheumatism is forthcoming. In four of the forty cases there was a very clear history of acute rheumatism. In at least thirty per cent. the onset was that of either acute or subacute rheumatism—the unavoidable inference being that a very intimate connection exists between rheumatoid arthritis and acute and subacute rheumatism. There is no recognized well-marked dividing line between chronic rheumatism and rheumatoid arthritis. In Germany and France it is the custom to call cases chronic rheumatism which in England would be called rheumatoid arthritis. As yet we have no absolute proof of rheumatoid arthritis being due to a micro-organism, but it is highly probable that it is. In the speaker's opinion the most valuable of all methods of treatment is the use of baths of superheated dry air. Generally a considerable increase in the mobility follows the use of a few baths.

Dr. Hingston Smith, of Bristol, said that the disease was a chronic polyarthritis and not rheumatism. The fact that thirty per cent. of male cases had had gonorrhœa speaks strongly in favor of microbic origin. It is perfectly clear that the wasting of the muscles is due to non-use. The carbonate of guaiacol is said to have been useful in early cases.

Dr. Lindsay, of Belfast, thought there was no justification of a relationship between rheumatoid arthritis and tuberculosis; but the nervous theory could not be disposed of so summarily, on account of the presence of acute atrophy. He had seen many cases develop after chronic rheumatism.

Dr. Jacobi, of New York, said that in acute articular rheumatism we have to do with an affection of the synovial membranes, while in rheumatoid arthritis the cartilages are the parts affected.

Dr. J. C. Wilson, of Philadelphia, said the term rheumatism should be confined to the acute articular trouble. In rheumatoid arthritis there is a development in the early stages of successive attacks similar to light attacks of rheumatic fever.

Dr. T. D. Griffith, of Swansea, regarded the condition as a symptom similar to eczema, and not a specific disease like gout or small-pox.

Dr. Gibney, of New York, advised the use of hot air and of an appliance regulating the amount of motion of the joints; absolute rest was necessary in the early stages.

Dr. Tyson, of Philadelphia, used general tonic treatment, arsenic, etc.

Atony of the Rectum.—Dr. George Acheson, of Galt, read a paper on this subject. In the treatment of these cases it is of the first importance to discover and remove, if possible, the cause, such as any displacement of the uterus, a pelvic tumor, etc. Much may be accomplished by a hygienic mode of living: regular habits; attention to diet; using more of the coarser foods, vegetables, fruits, and fats; exercise in the open air; cold bathing; massage; drinking plenty of water, preferably hot, before breakfast; above all regularity in going to stool at a certain time every day. Purgatives should not be administered in a routine way; an occasional gentle laxative may be of use to stimulate peristalsis. A general nervo-muscular tonic is indicated, such as nux vomica or strychnine, either alone or combined with iron, aloes, belladonna, and ipecac. In more obstinate cases it may be necessary to use tonic injections, such as extract of rhatany dissolved in alcohol, once a day. He cautioned against large injections of warm water.

The Treatment of Diabetes by Uranium Nitrate.—Dr. Ebenezer Duncan, of Glasgow, in a paper on this subject, said that ten to fifteen grains had been given by Dr. West in the London Hospital with rather favorable results. Very little has been done in other hospitals. In dogs, cats, rabbits, uranium nitrate produces a nephritis. Doses up to fifteen or twenty grains in the human patient produce no bad results and may be used for two or three months.

Dr. Tyson said it was twenty years since he had used the drug until last fall, when he tried it again in much larger doses; two grains three times a day being the old dose. This last time he gave five grains thrice daily. In his cases diarrhœa often resulted and his results had not been good.

Dr. Saundby said that in his experience uranium was not a specific, but it did good in some cases, although he had not given such large doses as fifteen grains, but had given ten grains thrice daily. Dr. Duncan, in reply, said he did not consider it a specific; he simply had stated what occurred when the drug was given in his cases.

Third Day—Friday, September 3d.

Gall Stones.—Dr. William Hunter, of London, opened the discussion on cholelithiasis, dealing principally with the causation of that affection. He said the disease was a very common one, affecting nearly seven per cent. of the population. During the preceding half century very little had been found out about it, but recently some light had been thrown on the subject. Obstructed circulation has long been known to be a potent factor in the production of gall stones. Bile is a fluid of low specific gravity, composed of water which holds certain specific constituents formed by the liver cells in solution, together with bile pigments and bile salts. Certain additions are made to the bile in its passage along the bile ducts and canals. The secretion of these passages, though formerly considered a mucin, is really a nucleo-albumin. The bile also contains a small amount of cholesterin which is held in solution by the bile salts. The nucleo-albumin is secreted constantly in the gall bladder, but most actively four or five hours after food has been taken. During digestion the exit of the common duct is closed and the fluid is driven back into the gall bladder. Gall stones as a rule are composed of a centre of bilirubin and calcium surrounded by cholesterin. Cholesterin is a substance found abundantly in many tissues of the body very widely distributed. The cholesterin of bile stones is secreted in the liver cells or is a product of degeneration of the epithelial cells of mucous membranes. In bile only a very small quantity is present, while in phthisical sputa it exists in abundance. The inflamed mucous membranes of the biliary channels and gall bladder are in a great measure the sources of the cholesterin of the gall stones. Bilirubin and calcium are found free in

bile, but do not form combinations with each other in health. Free albumin will precipitate them as an insoluble mass of bilirubin and calcium. In inflammation of those passages the necessary amount of the albumin is present for that precipitation. The catarrh may be caused by the stagnation of bile which occurs in many conditions, *e.g.*, pregnancy, tight lacing, indolent habits, constipation, etc. This stagnation was not sufficient in itself to excite inflammation, as the bile is an aseptic fluid, but it is very liable to infection by the bacillus coli communis from the intestine. This is not the only organism found here, for the typhoid bacillus has frequently been found in an inflamed gall bladder existing with typhoid fever. The chief indication of treatment is to flush the bile passages. This can be accomplished in the following ways: (1) Taking food; (2) Presence of bile salts; (3) The only drug which would thin and increase the amount of bile was salicylate of sodium. It is better given in combination with Karlsbad and Vichy waters. No drug has any effect in dissolving stones except olive oil, but this, when given internally, has not effected the desired results.

Dr. W. Osler, of Baltimore, spoke of the relation of typhoid fever to cholelithiasis. The typhoid bacillus may exist in the body without causing typhoid fever, resembling in that respect the pneumococcus. In one case under observation the bacillus was found in a case of cholecystitis in pure culture without any previous history of typhoid fever. Orth, of Neusser's clinic, said there was an acute infection in cholelithiasis—enlargement of spleen, albumin in the urine, etc. Sometimes no gall stones are found, as in a case operated on by Mayo Robson. The term "hepatic intermittent fever" should be limited to cases in which a long series of malaria-like attacks occur, which may be followed by jaundice; in the intermissions the patient is perfectly well. The stone is probably in the common duct in those cases. Suppurative fever. This gives more alarming symptoms—chill, rigors, etc. Dr. Osler said that a great deal of our knowledge of this interesting subject is due to many of the recent excellent papers by the surgeons.

Dr. H. Handford, of Nottingham, Eng., said he had had a large number of cases of typhoid fever but had never observed jaundice with that disease and he thought the condition must be rare. In young people gall stones occur but rarely, but he had seen a case in a young girl. He saw a girl three years ago who had had intense jaundice one and a half years and she was still well, though the jaundice was very marked. In biliary colic very many cases are not associated with the passage of gall stones, and hence it is infrequent to find these bodies in the stools. Morphine is unsafe when there is intense jaundice and it should be given, if at all, carefully.

Dr. Baumgarten, of St. Louis, said that, with regard to gall stones and cancer, in many cases the cancer was the primary condition and the gall stones developed secondarily, but the reverse might occur. He reported a case of peritonitis following perforation, in which, after death, a very small rupture, pin point in size, was found, but there was no evidence of ulceration. The gall bladder was contracted.

Dr. Pasteur, of London, Eng., spoke of the very great difficulties of diagnosis in these cases. He reported a case in which a man of fifty-two years had had a very acute attack of colic with severe hæmatemesis. He lost flesh rapidly. No enlargement of the liver or gall bladder could be made out. The speaker advised an operation, but no stones were found. The liver was contracted as well as the gall bladder. After operation, however, the man improved very much.

Dr. Rogers, of Denver, mentioned a case in which a young girl became suddenly attacked by colic and rigors. The attacks recurred. On operation there was found a contraction of the gall bladder. The operator connected the gall bladder with the small intestine by means of Murphy's button; death followed on the second day. He expected to find peritonitis at the autopsy, but instead found an obstruction at the lower part of the small intestine. The site of operation was healthy.

Dr. Acheson, of Galt, Ont., said that there was a large quantity of lime salts in the water around Galt, and he had observed that many of his patients suffered from bilious attacks. He asked Dr. Hunter if the excess of lime had anything to do with the biliousness.

Dr. Stephen Mackenzie, of London, Eng., spoke of the importance of the investigations of Dr. Hunter. A most important fact was the relationship of gall stones with typhoid fever. He said Osler had shown that typhoid bacilli might be present in the bile without producing any inflammation of the bile passages. The fact that no calculus can be found in the fæces does not prove that none has been passed. In a case in which Dr. Mackenzie had diagnosed gall stones nothing was found on operation. Subsequently another attack occurred and about one year later the patient came to him in triumph, showing a stone which she claimed to have passed.

Dr. Hunter, in closing the discussion, said he did not think the association of typhoid fever with jaundice was common, but that it did sometimes occur. The typhoid bacillus, however, had frequently been found in the gall bladder when stone existed. The bacillus coli communis was much more common. He said there was no conclusive evidence that an excess of lime in the drinking-water would produce cholelithiasis, for gall stones occurred frequently in places where no lime existed in the water.

Pneumonic Empyema.—Dr. Angus Mackinnon, of Guelph, Ont., read a paper on the empyema of pneumonia. He thought many cases of so-called abscess of the lung were nothing more or less than a localized empyema which had opened into a bronchial tube. He considered the empyema to be due to the pneumococcus in the majority of cases. He cited several cases of this affection which he had successfully treated.

Medical Uses of the Roentgen Rays.—Dr. Francis H. Williams, of Boston, read a paper on this subject. Charts were shown illustrating the various organs in their normal position in the healthy body and then those of various diseases such as tuberculosis, emphysema, pleurisy, etc., which had been obtained by means of the fluoroscope. The excursions of the diaphragm in ordinary and deep inspiration were well marked. When a pleural effusion displaced the heart, he said, that displacement could plainly be seen. The fluoroscope outlined the shape of the heart and aorta quite plainly, so that aneurisms or other diseases could often be detected when auscultation and percussion gave no signs. Early tuberculous deposits in the lungs could often be seen when percussion and auscultation revealed nothing.

The Use of Terms to Indicate Myocardial Changes.—Dr. James Tyson, of Philadelphia, read a paper on this subject. The importance to the clinician and experimenter of using the same terms to indicate like conditions is illustrated by the term "dilatation" as applied to the heart. The word may be applied (1) to a condition of distention or stretching possible within limits in an organ whose walls are normal, when overfilled with blood, such as occurs in an early stage of insufficiency or stenosis or increased blood pressure from any cause; or (2) to an organ which has yielded as the result of pathological weakness. This may be acute or chronic, commonly it is chronic.

To such pathological enlargement the term dilatation should be restricted, while for the former the word distention is more suitable. It is the first which precedes hypertrophy, while the second succeeds upon hypertrophy. The first stimulates hypertrophy, while the second is the result of failing nutrition in a hypertrophied heart. As such, the term dilatation of the heart should be limited to a relative enlargement of one or more of its cavities associated with fatty degeneration of its walls and consequent weakening of contractile power. Such walls may be thicker than the normal walls, though they are usually thinner. Whence it is doubtful whether the term hypertrophy with dilatation should be used as synonymous with eccentric hypertrophy, for in the latter condition the muscular integrity is unchanged, or at least not degenerated. For this, the term hypertrophy with expansion might be used, the term expansion to imply no degeneration and an active state, while dilatation implies at once degeneration and passiveness.

SECTION IN OBSTETRICS AND GYNECOLOGY.

First Day—Wednesday, September 1st.

Operation of Choice in the Treatment of Pelvic Disease.—Dr. F. Henrotin, of Chicago, read the first paper. When the surgeon, he said, operates on a pus sack in this region he finds usually that he has removed the ovary. An ovarian abscess is frequently overlooked when it is the primary seat of disease. Streptococci are conveyed by certain channels directly to the ovary and an abscess forms. With free incision of the abscess and drainage complete recovery is very probable. Completeness of recovery depends on early operation. The incision usually should be made in Douglas' pouch. The speaker had made this incision in one hundred and twenty-five cases with no deaths. Pus in the ovary should be let out as well as pus in other localities. No cure is possible without operation. Early vaginal incision at any stage accomplishes good result in ninety per cent. of cases if properly carried out.

Causation and Treatment of Hyperemesis Gravidarum.—Dr. J. A. Temple, of Toronto, read a paper on this subject. The great majority of the views regarding vomiting of pregnancy are speculative. It is much more frequent in primigravidæ. The simple morning sickness is functional, but pernicious vomiting is associated with some pathological process. The fatality is probably greater than the records would show.

Most writers think it is due to reflex irritation—the nerve endings in the uterus and ovaries being disturbed in the morning by the sinking of the abdominal organs. Another view is that the cause is pressure of the growing uterus. Stretching of the os has been beneficial in some cases. Gastric and intestinal ulcers are also said to cause the vomiting of pregnancy. A centre akin to the vomiting centre in the medulla has been made out.

Dr. Giles, of London, said he agreed entirely with Dr. Temple. There had been no sickness in thirty-three per cent. of his cases. He considered vomiting pathological and not physiological. In fifty per cent. there was no sickness in the first three months. The most striking characteristic was the association of dysmenorrhœa, and hence he connected the nervous system with this condition.

Dr. William Gardner, of Montreal, said his experience had been that after the uterus had been emptied the patients made rapid recovery. Dilatation of the cervix may stop the vomiting at once, but it frequently fails. The bougie method may also fail and then rapid dilatation of the cervix must be performed.

Dr. I. M. Lawrie, of Weymouth, Eng., said he had not been able to find sufficient pathological conditions, displacements, etc., to account for the vomiting. A good rule which he had followed was always to have a consultant with him before inducing an abortion. He regarded rapidly increasing pulse and the dark brown and black vomit as dangerous symptoms and indicating the time for operation. He usually tamponed the lower segment of the uterus for twenty-four hours and allowed labor to go on the next day.

Dr. Skene, of Brooklyn, said he recognized the fact that long-continued functional disturbance might lead to some pathological condition. He believed in using nervous and gastric sedatives first and in the event of failure emptying the uterus. Lavage of the stomach he had tried with success in some cases.

Dr. Harris, of New York, considered the treatment of this condition should always be carried out with regard to its etiology. Erosion of the cervix requires application of nitrate of silver and in many instances the case may be tided over without emptying the uterus. Slow dilatation by gauze packing remaining in utero over night is better than the rapid method.

Dr. Charles Jewett, of Brooklyn, regarded bromides and chloral as the best sedatives administered per rectum. It was imperative to operate before the stomach became much diseased.

Dr. J. C. Cameron, of Montreal, said no rule of treatment can be formulated in this condition. We treat our patient, not the disease. Interference is imperative before the patient's vitality had become so impaired as to render the operation useless. He agreed with Dr. Giles regarding the causation of this condition.

Second Day—Thursday, September 2d.

The Injuries of Parturition, the Old and the New.—Dr. W. Japp Sinclair, of Manchester, Eng., chairman of the section, said that he had selected the subject of his address because of the frequency with which, as a gynecologist, he had been called upon to deal with injuries produced by parturition, and the growing conviction that in many, if not in the majority of those injuries, their existence has not appeared to be altogether satisfactorily explained as inevitable, and not a few have been proved by irrefragable evidence to be produced by operative proceedings altogether unwarranted by the circumstances.

Some time last year he was asked to see a young primipara who was very ill toward the end of the first week of the puerperium. He was informed by the practitioner in charge that the case had been quite straightforward, from first to last, and the latter could not in any way account for the patient's condition. On making a physical examination without moving the patient from the dorsal position, the speaker discovered a deep and wide laceration of the vaginal vault; the examining finger passing easily into the tissues of the parametrium. No mention of forceps was made in the conversation before seeing the patient, and it was only after the examination and in reply to a question, that the attending physician explained why and when they had been applied.

A few years ago he made several repairing operations on the injured pudenda of a young married woman. She had been by all accounts perfectly sound and active a year before, but meanwhile she had got married and she had become a mother. The uterus was found to be completely prolapsed, and it was so lacerated that the anterior and posterior halves of the cervix projecting from between the nates looked like two separate organs, and the perineum was torn completely through into the anus. This patient then suffered from dislocation of the uterus, transverse

laceration of the cervix, and complete rupture of the perineum. She was treated by Emmet's operation, restoration of the perineum, and shortening of the round ligaments, and then she was fairly comfortable with a pessary. It was learned afterward that this case had been one of normal labor in a primipara, and that the delivery had been effected instrumentally within six hours from the commencement of the pains. Comparing this sort of practice, still possible at the present day, with what occcurred in a former age, attention was directed to the teachings of Mauriceau. From these a glimpse was given of the helplessness of the seventeenth century in the practice of obstetrics. With the resourcefulness at the end of this nineteenth century it may still be alleged, not without reason, that there is to be seen in the contrast only one more illustration of how "knowledge comes, but wisdom lingers." The results of our modern practice do not make it so perfectly obvious that in obstetrics we are much wiser than our sires. While we have much to congratulate ourselves upon, yet we may fairly ask if there is not much room for improvement in the use which we make of our resources. He thought that a warning note should be sounded against the too free application of surgical methods in gynecological practice. Surgical interference in midwifery practice was the great provider of surgical work for the gynecologist. In addition to the avoidable childbed mortality, there is the very serious question of childbed morbidity, which is largely owing to the abuse of the forceps in the practice of midwifery.

After reviewing the practice as outlined by Smellie in the seventeenth century, reference was made to the influence on obstetrics by Simpson's introduction of anæsthetics. Next came the combination of anæsthetics and antiseptics and the triumphs of abdominal and pelvic surgery applied to the diseases of women. After strongly protesting against the meddlesome and mischievous midwifery for which some reform, he thought, was urgently required, figures were given showing the details of two years of practice at Manchester Maternity Hospital. From these it was seen that the forceps deliveries were about 1.4 per cent. in charity cases, but within the same area of population, and among the class of people who could afford to pay for private medical attendance, the proportion of forceps deliveries was from twenty to thirty per cent. Such a striking contrast surely supplied food for reflection and called for explanation. Experience now points to the fact that we have replaced the one great injury of parturition in former generations—vesico-vaginal fistula—by a host of others, vesico-vaginal fistula by laceration instead of by sloughing included, and it is only reasonable to conclude that there must be something seriously wrong with our theories or our practice, or with both.

Treatment of Fibroids of the Uterus by Vaginal Ligature of the Broad Ligament.—Dr. Franklin H. Martin, of Chicago, read a paper on this subject. He advocated the operation in cases of interstitial and intramural fibroids and considered it much preferable to hysterectomy. He passed a double silk ligature round the broad ligament about one inch from the uterus, and including the uterine artery. This operation was usually successful in bringing about such atrophy of the fibroid that parturition might go on as usual.

Dr. Hiram Vineberg, of New York, submitted statistics showing a total failure of the operation in his series of cases.

Dr. Skene, of Brooklyn, advocated curettage of the uterus as a proceeding absolutely necessary along with Dr. Martin's operation. He laid great stress on the treatment of the attendant endometritis.

The Vaginal Versus the Abdominal Route in Dealing with Inflammatory Conditions and Tumors in the Pelvis.—Dr. E. W. Cushing, of Boston, read this paper. The selection of either method depended much on the personal equation of the operator; some surgeons being proficient in one of the methods, some in the other. Some points in favor of the vaginal route were the absence of a cicatrix, the slight degree of shock, and the lessened liability of wounding the intestines and other abdominal organs. He advocated the removal of fibroid tumors through the abdomen. For the cervix the vaginal route was preferable and always when the thickness of the abdominal wall rendered the suprapubic operation difficult. For pyosalpinx with removal of all the appendages either route was available.

Dr. Skene, of Brooklyn, said he advocated twenty years ago the employment of the vaginal route and consequently was pleased to see modern operators returning to his ideas.

Dr. Hanks, of New York, entered a protest against the practice of attacking a ruptured tubal pregnancy through the vagina. He cited two instances in which uncontrollable hemorrhage resulted, apparently from the tube of the opposite side.

Dr. Ross, of Toronto, entered a strong protest against the adoption of the French method of operating per vaginam and said he still was a warm advocate of the older and safer abdominal route.

Third Day.—Friday, September 3d.

Diagnosis and Treatment of Intrapelvic Tuberculous Disease.—Dr. Ross, of Toronto, presented a paper with this title, in which he gave it as his opinion that in the great majority of these cases tuberculosis of the intestines coexisted. Only one case had come under his notice which showed no intestinal disease. He discussed the diagnosis of this affection very thoroughly and laid great stress upon the value of the clinical thermometer in distinguishing these cases from hysterical manifestations. With reference to treatment he was disposed to doubt the theory that air was the curative factor, because, if this were so, why were the lungs and pleuræ so frequently affected with tuberculosis? He advocated abdominal section in the great majority of cases. If late operation is advisable, so much the more so is operation in the early stages of the disease. He considered the cessation of menstruation and relief of congestion, consequent upon removal of tubes and ovaries, as a most important factor in the cure.

Conservative Treatment of the Ovary.—Dr. Howard Kelly, of Baltimore, sent a paper which was read, in his absence, by the secretary, Dr. Giles. He entered a strong plea against the modern practice of removing every vestige of ovarian tissue unnecessarily. Coupled with the discussion on this paper was one by Dr. T. More Madden, of Dublin, on the conservative treatment of Fallopian-tube disease.

Dr. A. P. Dudley, of New York, said he made it a rule to leave behind as much of the ovary and appendages as is consistent with the cure of the disease. He had removed half an ovary, scraped out cysts, and removed one ovary and one tube in cases in which modern practice would lead one to deprive the woman of all her genital organs.

Dr. Gordon, of Portland, Me., protested against the ultra-conservatism of leaving the uterus after removal of the appendages. All cases did better when complete removal was persisted in.

Dr. Giles, of London, Eng., deplored the absence of statistics showing the ultimate result of these operations, as this, he considered, was the only true manner of determining their efficacy or otherwise.

Diagnosis and Treatment of Retroversion of the Uterus with Fixation.—Dr. A. Lapthorne Smith, of Montreal, read this paper. He thought the subject of displacements was often treated too lightly by most men, but he wished to call attention to the importance of this subject. Palliative measures were advisable to begin with, but radical treatment was in many cases necessary. This comprised the two operations, ventral fixation and Alexander's operation, the technique of which he described.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

LUNACY IN SCOTLAND—PRESSURE ON ASYLUMS—PECULIAR PEOPLE—BABY FARMING—FATALITIES IN THE PROFESSION—BLACK SHEEP—AMERICAN JUBILEE FUND—MORTALITY RETURNS.

London, September 10, 1897.

The Scotch lunacy commissioners have just issued their blue book, in which the statistics show that in Great Britain the increase of certified lunatics is as noteworthy in the northern kingdom as in the southern. No doubt much of the increase is due to causes similar to those in England. The remark of Dr. C. Macpherson in his last report, that "a wider view is now commonly taken of what constitutes insanity, or at least certifiable insanity, than was the case twenty years ago," sums up the situation. Nevertheless the progressive figures are calculated to give uneasiness and to foster the alarm felt by some. On January 1st of this year the number of certified lunatics in Scotland was 14,086, approaching to double the number in 1874, viz., 7,885. A continuance at the same rate will certainly show that in a quarter of a century the number will have doubled. The increase has been more rapid of late. Thus it took four years to add the eighth thousand to the number of 1874 just quoted. In eight years the tenth thousand was passed, so that in 1886 there were 10,895. But by 1895 there were 12,950, and in 1896 no less than 13,703, while, as stated above, on the 1st of January last there were 14,086.

The great bulk of the increase was naturally in pauper lunatics, as their wants are met by the law. In fact, the poorer class of private patients is less provided for, as between the rich and the pauper classes the accommodation of the asylums is fully taken up. Contracts have been entered into for the reception by the asylums of the paupers of certain districts, while the excellent provision attracts wealthy patients from a distance—even from England and Ireland. This accounts for the difficulties of the less affluent private patients in finding accommodation, and it is suggested that legislation might meet the case by authorizing district boards to provide for such private patients.

A coroner's jury has returned a verdict of manslaughter against one of the "Peculiar People"—a sect which is founded on the literal interpretation of a passage in St. James' Epistle, directing the elders to anoint the sick, etc. These people therefore refuse all medical aid to themselves and their children. The coroner told the father he was bound by law to call in a doctor, and, if his neglect to do so accelerated death, he was liable to punishment; his religion had nothing to do with the matter. Evidence was offered that medical aid would have prolonged the child's life. As the father is committed for trial, we may expect an authoritative statement of the law on the subject.

The county council seems to be exercising its control over baby farming with commendable vigor. The annual report of the committee charged with this work shows that under the act sixty houses were registered during the year for keeping infants. A watch was kept on newspaper advertisements offering to take infants, many were answered, and the cases followed up. The inspectors, it seems, keep in touch with the police, the registrars of births and deaths, and with other officials whose duties bring them into contact with infants separated from their parents. In all, twenty-four hundred and thirty-seven reports were made as to the investigations made by the inspectors during the year, and fifteen persons were found to have broken the law. Proceedings were taken against four of these, but it does not appear why the others should not have been prosecuted. It is the fear of prosecution which is the chief deterrent, and, as it is generally admitted that the law is good, I fail to see why the council should not take proceedings in every case of breach of the law.

Some sad fatalities have lately occurred. Dr. Starkey Smith, of Warrington, expired suddenly while attending to a patient. He was well known and was a magistrate for Warrington. Dr. E. Barber, of Sheffield, also died suddenly as he was leaving the dining-room after dinner. He was only twenty-nine years old. Dr. Wyllie, of Elie on the coast of Fife, met with his death by drowning while bathing last week. He was an expert swimmer, but was apparently seized with syncope or cramp, and carried away by a current before assistance could reach him. The wife of Dr. Bryan, of Northampton, has also met a tragic end under strange circumstances while returning home by rail. She was last seen alone in a first-class carriage, but on its arrival the carriage was found empty. Search along the line was made, and the body found horribly mutilated. Dr. Lammiman, of Tunbridge Wells, was in a railway accident when four carriages rolled over an embankment. He escaped with minor injuries in an unaccountable manner, and after recovering from a dazed state was able to render his services to those who were more injured.

Sadder, in one sense, are cases in which doctors have been charged with fraud or crime. There is one now under investigation, in which a charge of wholesale swindling by a surgeon in conjunction with a "titled lady" is made. Another surgeon is accused of bigamy. The details are unsavory. Such aggravated cases are sometimes cited as a disgrace to the profession, but they are very few in proportion to the numbers on the register when compared with other classes of the community. Still every one is to be lamented, and one can only say with the old proverb, "There are black sheep in every flock." When they are mentioned to me, I point to the great roll of those of the profession whose names are everywhere honored as among the benefactors of the race and "the excellent of the earth."

The committee of the American Victoria jubilee fund has sent £1,000 to Guy's Hospital, to endow in perpetuity a "Queen Victoria bed." Another sum of like amount has been sent to the London Hospital on the same condition, and a third thousand to Charing Cross Hospital.

The London mortality last week was twenty per thousand, including in the total deaths twenty-eight from diphtheria. There was no death registered from small-pox in London or any of our large towns.

Tinea Favosa.—After washing with green soap and shaving the scalp apply:

℞ Ac. carbol., Bals. peruvian., Petrolei, Glycerini, ... āā ℥ iiss.
. . . . . āā ℥ iij.

A SCHOOL FOR FAVUS CHILDREN.

To the Editor of the Medical Record.

Sir: In the hope that it may be possible to secure educational facilities for the large number of children excluded from the schools by the recently organized system of inspection, I ask for a brief space in the Medical Record and bespeak its influential co-operation. Several years ago I began to realize the dangerous increase in the number of contagious scalp diseases in the public schools, and sought to interest the school authorities in the matter of establishing some system of inspection and exclusion. When the present system to shut out contagious diseases was put into operation, I was much gratified to learn that the scalp was to come in for its due share of scrutiny.

The result has been that already dispensaries in certain quarters of the town are overrun with ringworm, pediculosis, and favus cases, detected and sent home by the wide-awake school inspectors. Naturally few of the favus-affected children can or should be allowed to return to school for a year at least, even if they can be forced to carry out treatment; while many with scalp ringworm cannot get a clean bill of health for perhaps a like period, or at least for many months.

It is for this class that I would urge the establishment of one or more schools, where not only can their education be continued, but where treatment can be inforced until a permanent cure is established. As conditions now exist, there is danger of driving these children out of the schools into occupations in which their affections will still endanger others.

So far as my personal experience goes, it is extremely difficult to keep victims of favus sufficiently long under treatment outside of or even in an institution if parents can remove them at will.

Charles W. Allen, M.D.

[illegible] East Sixtieth Street.

THE SOCIAL SIDE OF THE MOSCOW CONGRESS.

(From our Special Correspondent.)

St. Petersburg, August 21, 1897.

The series of social events arranged to make the stay of the members of the International Medical Congress an agreeable one came to a close to-night with a reception given by the physicians of St. Petersburg in the Nobles' Club. The three days since the close of the congress have been crowded with social events gotten up for the visitors. There was an excursion to the islands by steamboat on the Neva and the Grand Nevka on Saturday afternoon, with the promenade in the botanical gardens, at which many of the highest Russian aristocracy were present and the wants of the inner man not forgotten. On Sunday afternooon there was an excursion to the palace at Peterhof, with the view of the grounds, the palace, and the magnificent fountains, and a royal spread for which the two hours' ride over the Gulf of Finland had properly whetted the appetites of the invited guests. Then on Monday, beside the soirée, there was lunch at the Institute of Experimental Medicine and a chance to see the magnificent laboratories for experimental research in everything connected with medicine that are here so perfectly equipped. All this in a city almost a thousand miles away from where the congress was held, the railroad tickets to and fro costing nothing and many of the visiting doctors being lodged absolutely free of expense in various public institutions of the capital. It is a fitting climax to the succession of agreeable surprises that Russian hospitality has prepared for her medical visitors since they reached the frontier. Most people were a little anxious about how this putting one's self into the grasp of the Russian bear was going to turn out; but from the moment when at the frontier the medical committee smoothed out all difficulties as to passports, luggage, and customs, there has been coming the gradual realization that bruin's hug is a hearty, cordial one, and eminently friendly and hospitable. This has been true not in Moscow and St. Petersburg only, but everywhere that members of the congress stopped for even a day. Visitors from the south cannot speak highly enough of their cordial reception by the committee at Odessa or of their pleasant hours in Kiev, the Jerusalem of Russia, under the friendly care of brotherly and (may we add?) sisterly solicitude. It was the same thing at Warsaw and at points off the main lines where members stopped for a day or two.

The arrangements at Moscow itself were excellent, and too much cannot be said in praise of the general committee for the excellent way in which it accomplished the immense task of handling the ten thousand visitors to the congress. The Manége—a huge building meant for manœuvres and about five hundred by one hundred and twenty feet—made an excellent place of reunion for the midday lunch, where one could meet one's friends and learn the news. The magnificent Imperial Theatre, with a seating-capacity of over four thousand, made an ideal assembly hall for the general sessions and such as could be supplied by but few cities of the world.

The general impression produced on the members of the congress is an excellent one, and every one is perfectly free in confessing how agreeably he has been surprised by the extent to which Russian hospitality has gone in providing entertainment for us. We have been the nation's guests and have been made to feel it. Every Russian seems to have felt it a personal duty to do his little mite to help produce a favorable impression on the Western visitors, who for the first time found themselves in considerable numbers in his supposedly Oriental country. The cordiality of the people was noteworthy, and manifested itself in the extremest readiness to be of help when the difficulties of the Russian tongue paralyzed our efforts at being understood by cabman, shopkeeper, or passerby. Without exception, it is with feelings of deepest appreciation for all this, and of lasting gratitude for kindness from our "stranger hosts," that the members of the congress take their leave.

But we have learned more than the lesson of gratitude. We have seen the magnificent medical institutions of Moscow and St. Petersburg, and we have learned to appreciate how much the Russians are doing for scientific medicine. Moscow, after all, most of us thought of as a thoroughly mediæval place, whose hospitals and clinics doubtless smacked of antiquity. The visit to the university clinics was a revelation—one after another piles of magnificent buildings, none of them more than ten years old, all of them thoroughly up to date; the gynæcological and ophthalmological clinics and the Pathological Institute, beautiful structures architecturally and arranged to facilitate the very best scientific work in these branches, all of the university clinics spread out over acres and acres of ground, magnificently lighted, airy, and comfortable, up to date in every respect.

Here in St. Petersburg was the same story almost to tell. Money has been no object in providing clinical, scientific, and teaching facilities of the highest order—the culmination of it all to be seen in the magnificent Institute of Experimental Medicine, which has nothing to compare with it in the world. Here, on ample grounds on a large arm of the river, is a series of buildings, all with one exception erected for the purpose, in which all branches of science connected

with medicine may be studied practically. Everything —materials, cultures, even animals—is supplied and cared for by the institute; the student works under the direction of a distinguished professor, and the charges for the year are only 25 rubles ($13)! The internal arrangements, the mechanical appliances, even to railways and elevators for the transportation of animals, the bathing and sterilizing apparatus, the operating-rooms, the kennels—everything is most perfect and nothing seems to have been forgotten.

Can anything good come out of Russia? the medical scientific world might have asked some years ago; but now the answer to the question is obvious: some of the best scientific work is being done here. The Western visitor to the congress was sometimes, I think, conscious in the applause given at the sections, and in their relations to one another outside, of a closer bond of union between the Russians, the Poles, and the Bohemians, than between the other members. They are the representatives of the Slav races of Europe to-day. There is an impression among them that the future is theirs. The Celts and the Teutons have had their day, and are degenerating; the descendants of the Romance nations need scarcely be counted with at all; and so must come from the East once more a people whose acme of culture, civilization, and science shall represent the latest step in the world's evolution. Such is their dream.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 18, 1897:

	Cases.	Deaths.
Tuberculosis	268	[illegible]
Typhoid fever	33	[illegible]
Scarlet fever	65	[illegible]
Cerebro-spinal meningitis	1	3
Measles	28	[illegible]
Diphtheria	119	21
Laryngeal diphtheria (croup)	2	1
Chicken-pox	1	

Medical Practice in Washington.—There have been much discussion and correspondence in regard to the custom of some town doctors visiting health resorts in New England and there practising. The resident medical men have complained loudly of the injustice of this procedure. A Washington correspondent of the *Atlantic Medical Weekly* presents in a long letter the reverse of this picture, that is to say, the view of the question as taken by a town physician. From the subjoined account it would seem that the lot of the average medical man is not a happy one. "Boston practitioners complain of oversupply because of one physician for every five hundred inhabitants. Here we have one for every two hundred, not to mention numerous "sundowners," faith curists, Christian scientists, and other advertising charlatans. Bright men, with the qualifications of both home and European education, are languishing at the prospect before them of conspicuous failure and are not making enough to supply the bare necessities of life. I know of one poor struggling fellow, a qualified man of good habits, who passed Christmas week with no gas or coal in his house, while he and his family subsisted during that season on corn meal and hot water exclusively. Next to the free-dispensary abuse which we have with us in full-blown proportions one of the most serious things a Washington physician has to contend with is the matter of collections. It is said that the laws of the district seem to have been framed with a view to prevent the collection of honest debts. Add to this the fact that the pay of government employees cannot be attached or garnisheed, and the virtual protection afforded them by heads of departments almost places a premium on dishonesty and increases the difficulty among many victims. I know of one practitioner who has more than three thousand dollars in small bills which he cannot get from delinquent government clerks."

The First Medical Degree in New England.—Dr. Francis R. Packard writes in the *Journal of the American Medical Association* that the first medical degree granted in these parts was an honorary one, bestowed on Daniel Turner, of Connecticut, by Yale College in 1720. As this was intended as a token of gratitude for Dr. Turner's liberal gifts to the college and not as a recognition of any particular fitness on his part to practise medicine, a wit of the time interpreted M.D. to signify *multum donavit.*

Smoke.—At a debate on smoking, among the members of the British Association, many speakers denounced and others advocated the practice. Professor Huxley said: "For forty years of my life tobacco has been a deadly poison to me. [Loud cheers from the antitobacconists.] In my youth, as a medical student I tried to smoke. In vain; at every fresh attempt my insidious foe stretched me prostrate on the floor. [Repeated cheers.] I entered the navy; again I tried to smoke and again met with a defeat. I hated tobacco. I could almost have lent my support to any institution that had for its object the putting of tobacco smokers to death. [Vociferous applause.] A few years ago I was in Brittany with some friends. We went to an inn. They began to smoke. They looked very happy and outside it was very wet and dismal. I thought I would try a cigar. [Murmurs.] I did so. [Great expectations.] I smoked that cigar; it was delicious! [Groans.] From that moment I was a changed man; and now I feel that smoking in moderation is a comfortable and laudable practice, and is productive of good. [Dismay and confusion of the antitobacconists. Roars of laughter from the smokers.] There is no more harm in a pipe than there is in a cup of tea. You may poison yourself by drinking too much green tea and kill yourself by eating too many beefsteaks." [Total rout of the antitobacconists and complete triumph of the smokers.]

Dipping Cattle as a Remedy for Texas Fever.—A somewhat novel series of experiments is being tried in the case of cattle suffering from Texas fever, and one which is stated to have been followed by most satisfactory results. For some considerable time there has been in Kansas a rigid quarantine against cattle from the Texas-fever district. It has lately been discovered that ticks were the means of spreading the contagion, but that by dipping the cattle these have been got rid of. The experiments of dipping cattle for the destruction of ticks were undertaken at the agricultural experiment station of the University of the State of Missouri, at Columbia, Mo. Mr. R. I. Kleberg, the manager of the Santa Gertrude ranch, constructed a dipping-vat large enough to allow the complete immersion of a full-grown animal. Many preparations of different kinds are used in which to dip the cattle, the most successful being a mixture of certain oils containing a small proportion of carbolic acid. At Fort Worth the cattle are being dipped in chloro-naphthol. The experiment there is being conducted by the department of animal industry.

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Original Articles.

KATATONIA (KATATONIE OF KAHLBAUM—KATATONISCHE VERRÜCKTHEIT OF SCHÜLE).[1]

BY FREDERICK PETERSON, M.D.,

NEW YORK,

FORMERLY FIRST ASSISTANT PHYSICIAN AT THE HUDSON RIVER STATE HOSPITAL FOR THE INSANE; CLINICAL PROFESSOR OF INSANITY IN THE WOMEN'S MEDICAL COLLEGE OF THE NEW YORK INFIRMARY; CONSULTING PHYSICIAN TO THE MANHATTAN STATE HOSPITAL FOR THE INSANE;

AND

CHARLES H. LANGDON, M.D.,

POUGHKEEPSIE, N. Y.,

SECOND ASSISTANT PHYSICIAN AT THE HUDSON RIVER STATE HOSPITAL FOR THE INSANE.

History.—Katatonia, derived from the Greek word *κατατείνω*, meaning "I stretch tightly," is a term applied to a certain group of psychical and motor symptoms presently to be described, which has often been considered as constituting a new and distinct form of insanity. There is, however, a great diversity of opinion in regard to this. This opinion was first held by Kahlbaum, of Görlitz, who wrote and discussed the subject fully in a monograph which he published in Berlin in 1874. Dr. Kiernan, in an article on katatonia, published in 1882, mentions that Meynert, two years before Kahlbaum, described the syndrome as a "peculiar form of melancholia attonita," as "characterized by a series of fluxionary excitations, toned down by coexistent cerebral pressure, microscopic exudations, ventricular dropsy, and perhaps premature ossification of the sutures. From these will result forced and theatrical activities on the part of the patient. The convulsive state indicates the control of the irritative factors; the cataleptoid conditions, the triumph of the depressing factors. The ideas of grandeur following upon stupor are the results of ideas previously caused by fluxionary conditions."

Katatonia has been defined by Spitzka (1883) as "a form of insanity characterized by a pathetical emotional state and verbigeration, combined with a condition of motor tension." To this Dr. Nolan would add, "running a quasi-cyclic course of expansion, hysteria, and stupor," stating that this "would help to define the disease in unmistakable terms."

Katatonia commences with headache, usually occipital, insomnia, a general feeling of mental distress and uneasiness, followed sooner or later by an attack of convulsions, epileptiform in character, or a condition of excitement or melancholia agitata. This is soon followed by a condition of rigidity and immobility—the "attonita" stage. Recovery may now take place or the patient may drift into a condition of terminal dementia. As already stated, authors and alienists are not in accord as to whether katatonia should or should not be placed as a distinct form among mental diseases. The following are some of the most important opinions that have been expressed on this subject:

Dr. Arndt, in a paper read before the meeting of the Psychological Society of Berlin, 1874, said that he agreed to an extent with Kahlbaum's theories, but that he did not accept katatonia as a new form of psychic disease. He said that katatonia may have the most varying causes and relations, and cannot therefore be considered a special form of disease.

Dr. Ewald Hecker says that Kahlbaum's statements and clinical diagnostic methods are excellent and reliable, and he discusses the subject in full, its etiology, symptoms, etc., and he reports two cases in a paper which he published in the *Allgem. Zeitschr. f. Psych.*, vol. 33, 1877. In the same volume of the *Allgem. Zeitschr. f. Psych.*, Dr. Brosius discusses this subject. He says that the "symptomatic entity" of the mental disturbances joined together under the name of katatonia is specific, and that the separation of katatonia as a distinct form of disease is thereby justified.

Dr. James G. Kiernan, in the same year, 1877, published an article on katatonia as a clinical form of insanity, in the *American Journal of Insanity*. He considers that katatonia is entitled to a distinct place as a form of insanity, so far as frequency of occurrence gives any right to the same. He gave in this paper an account of some thirty cases. In 1882 he published an important article on this subject in the *Alienist and Neurologist*, and in 1884 a third article in the *Detroit Lancet*.

In 1878 Professor Westphal discussed this subject in a paper in the *Allgem. Zeitschr. f. Psych.*, and said that clinicians, in the effort to study and separate mental diseases, are apt to be narrow in one way or another, and that this was true of Kahlbaum in respect to his study of katatonia. He thought that Kahlbaum's katatonics were insane patients exhibiting variations in the manner of development of their insanity and variations in the subsequent course of its psychical manifestations. He did not consider the manifestations which Kahlbaum declared to be specific to be such, nor that they were entitled to a place in the clinical group. He further said that Kahlbaum "mistakenly ascribes a spasmodic character to these manifestations."

In 1878 Dr. N. B. Donkersloot wrote an article, in which he said that katatonia should be used as a name for a certain set of cases, the principal symptom being incapacity of action from disturbance in cerebro-motor centres, and stated that it often complicated nervous diseases, such as catalepsy, hysteria, epilepsy, melancholia with stupor, etc., so that to give it a special etiology and treatment was not well possible.

Dr. Tigges, in the *Allgem. Zeitschr. f. Psych.*, 1878, discussed one hundred and four cases of melancholia with stupor, and said that he could not agree with Kahlbaum's scheme of katatonia, but that it stood on an equal footing with the other forms of melancholia, and at times ran into them; that it showed the symptoms of such transition forms, and was connected, as were the other forms of melancholia, in multiple ways with other psychical groups.

Dr. von Reinecker, in a discussion published in the *Allgem. Zeitschr. f. Psych.*, in 1880, said he did not believe that katatonia should be considered a distinct clinical form of insanity.

Dr. Sander, of Dalldorf, and Dr. Mendel, of Berlin,

[1] Read before the American Medico-Psychological Association, May 13, 1897.

in the same article, expressed their opposition to placing katatonia in the list of separate mental diseases.

In 1881 Dr. Hack Tuke, in a paper on "Mental Stupor," published in "Transactions of the International Medical Congress," London, vol. 3, said he thought that Kahlbaum, in making the disorders of motility the essential part of the malady, carried his views too far. The morbid mental state conditioned the motor trouble, and it was right to take the former, not the latter, as a basis of classification. It was important, however, to bring the motor and psychical troubles into relation. In conclusion, he summed up by saying that he thought "the cataleptic variety of mental stupor (and probably other varieties also) was a condition to be regarded as caused by the exclusive direction of the mind upon a melancholy delusion; or, if this be absent, by brain exhaustion due to various causes calculated to paralyze volition and allow of involuntary action."

In 1881 Dr. M. E. Fink, in the *Allgem. Zeitschr. f. Psych.*, wrote an article recognizing katatonia and giving the differential diagnosis of it and hebephrenia. In 1882 Dr. Karl Laufenauer gave two cases of katatonia in the *Pest. med.-chir. Presse*, and this author evidently accepted Kahlbaum's definition of katatonia. In the same journal, 1882, Dr. Eugene Konrad accepted Kahlbaum's theories in part, but thought Kahlbaum went too far in considering all psychoses exhibiting katatonic symptoms as phases of katatonia.

In 1883 Dr. v. Krafft-Ebing, in the second edition of his "Lehrbuch der Psychiatrie," mentioned katatonia as a form of disease defined by Kahlbaum, made up of symptoms given by the author under a division of "Circulares Irresein." In the same year Dr. William A. Hammond read a paper before the New York Neurological Society, in which he accepted Kahlbaum's definition of katatonia; and Dr. S. V. Clevenger, in an article in the *American Journal of Neurology and Psychiatry*, on "Insanity of Children," mentioned katatonia apparently without questioning the validity of the name, and referred to Kiernan's observation of it in a boy of eleven. In this year Dr. Richard Neuendorff, in the *Centralbl. für Nervenheilk.*, reported two cases and evidently accepted Kahlbaum's definition of katatonia. In 1886 Dr. Knecht wrote on katatonia in the *Allgem. Zeitschr. f. Psych.*, and reported cases giving the differential diagnosis and also the report of two autopsies. In the same year Dr. W. P. Verity wrote on katatonia for the *Journal of Nervous and Mental Disease*. He quoted Kiernan, with whom he evidently agreed, and mentioned that Clevenger expressed the opinion that katatonia "seems allied etiologically to some rheumatoid disease, though its origin may be in nerves or blood." He cited one case of his own. In 1886 Schüle, in the *Klinische Psychiatrie*, Leipzig, gave an exhaustive and perfect picture of clinical katatonia, and divided it into three varieties—the religious expansive form, the depressed form, and hysterical katatonia. Clemens Neisser, of Stuttgart, wrote on katatonia in 1887, and also furnished a valuable article on katatonia for Tuke's dictionary.

In 1889 Dr. W. Julius Mickle furnished a long and comprehensive article on katatonia in vol. 12 of *Brain*. He believed that Kahlbaum has demanded for katatonia an application far wider than can be admitted, but conceded to it a "separate existence as at least a variety or sub-form, if not as a separate and distinct form of mental disease, for which last view there is much to be said." "At least as a symptom assemblage, or syndrome, the name katatonia will have its uses in mental medicine." He said that nosologically it should be placed as an appendix to the class of psycho-neuroses. There were elements in katatonia leading one to consider it equally well placed in the second great group of mental maladies (as classified by the author), namely, that in which hereditary influences have formed from ordinary neuroses, of "psychoses of hereditary or other morbid constitutional neurosal or mental degeneration, of defective organs, mental constitution, or of incomplete or arrested brain development." Here it might stand between the class of periodical and circular psychoses on the one hand, and on the other the adjoining class containing hebephrenia, paranoia, simple hereditary insanity, etc. He further stated that the views expressed by Drs. Séglas and Chaslin are partly similar to his own. These authors, whose writings on this subject are to be found in the *Arch. de Neurol.* for 1888, and *Brain*, vol. 12, do not accept katatonia as a distinct disease, but consider it a variety of melancholia, simple or sympathetic, with stupor more or less marked, perhaps more distinctly related to hysteria. Dr. Nicholaus Ostermayer, in the *Allgem. Zeitschr. f. Psych.*, vol. 48, expressed the opinion that clinically we must accept Kahlbaum's theories; and that, while katatonia is probably not a frequently occurring form of psychical disease, it is not one of the rarest forms.

In 1892 Dr. Edwin Goodall, in the *Journal of Mental Science*, London, published a paper entitled "Observations upon Katatonia." He was undecided as to whether katatonia should or should not be considered a separate malady. Dr. R. Percy Smith, in the *Journal of Mental Science* for 1892, cited a case of "so-called katatonia." He considered the term "katatonia" as dubious.

In 1894 Dr. E. D. Bondurant published an article on katatonia with six illustrative cases, in the *Medical News*, vol. 64. He considered katatonia a convenient name for a "rare and interesting group of symptoms."

Clouston, in his work on "Mental Diseases," 1897, states that "katatonia is simply a variety of alternating insanity, in which the functions of the motor-trophic centres are especially involved."

Bevan Lewis, in his text-book on "Mental Diseases," 1890, says: "The more closely we study these cases of katatonia described by Kahlbaum, the more convinced we are that we are not dealing with any distinct pathological entity, but with some of the multiple forms of hysteria. . . . Melancholia attonita closely approximates to the state to which we now allude."

Conolly Norman, in a monograph on "Acute Confusional Insanity," states incidentally that katatonia is probably to be regarded as a type of the above-named disorder.

We thus see that katatonia has been described variously as a clinical entity, as a variety of melancholia, as a form of circular insanity, as a type of acute confusional insanity, as a species of hysterical insanity, and by one author (Schüle) as attonic mania.

A careful study of the subject as detailed by the authorities cited, together with observations of our own, gives us the following facts in the etiology, pathology, and symptomatology of katatonia:

Etiology.—One of the most important predisposing causes of katatonia is hereditary influence. Katatonics are often members of families showing hereditary psychic degeneration. Scrofulous and tuberculous diatheses are frequently predisposing causes. The other most important predisposing causes are age and sex, the majority of cases being youthful and belonging to the male sex. Students and teachers are said to be especially prone to have this trouble. The influence of stimulants may act as a predisposing or exciting cause. The principal exciting causes are masturbation, sexual exhaustion and excess, religious and emotional excitement, mental strain, worry, anxiety, syphilis; indeed, all of the usual factors in the causation of ordinary melancholia.

Pathology.—Kiernan found that the disease is most

frequently preceded during infancy by a basilar meningeal process of a tuberculous character. Kahlbaum's post-mortems show evidences of a healed-up hydrocephalus and a basilar meningitis. Meynert's deduction from Kahlbaum's cases is that the disease has been preceded by a patho-meningeal process located at the base of the brain and over the fissure of Sylvius. Kiernan further says: "In a patho-psychological aspect the localization of the process would be over the base of the brain, in the fourth ventricle, and over the fissure of Sylvius." Dr. Julius Mickle says that the post-mortems show brain atrophy, anæmia, marked basal meningeal changes, or passive hyperæmia and œdema of meninges—all of which indicate a profound alteration of brain nutrition. The pia is at times found to be adherent in patches to the brain, and superficial layers of gray matter are separated when the membranes are stripped off. These patches are situated at the anterior part of the inferior mesial surfaces of the cerebral hemispheres. The arachnoid is slightly thickened and opaque over the base of the brain, and there are thickening and opacity over the superolateral gyri

We are inclined to believe that the more this class of cases is investigated, the greater will be the accord shown with the pathological findings in melancholia.

Kahlbaum's theory of the cause of verbigeration was that it was a kind of co-ordinated spasm originating in the centre of speech.

Symptomatology.—The symptoms of katatonia are essentially somewhat variable in nature. There is a tendency to change from phase to phase, often returning to a previous one as if by a sort of relapse. The earliest symptoms noticed are abnormal sensations in the head, pain in the occipital region, vertigo, insomnia, irritability, change of temper, general restlessness, a certain amount of gradually increasing melancholia.

The second stage may be ushered in with convulsions, epileptic or epileptiform in character, or the patient may become suddenly maniacal or greatly agitated. The patient now presents the marked condition of melancholia. Muscular tension or spasmodic movements are present. It has been said that in about fifty per cent. of cases there are spasmodic conditions of the most varied nature, often existing for years before the beginning of the actual mental disease (hysteria [?]). Rhythmical movements about the face and limbs are often seen in this and subsequent periods. These rhythmical motions or movements are always under the control of the will, thereby differing from those seen in chorea. The reflexes are increased. The delusions are usually of fear or self-accusation, and may concern the commission of imaginary sins, masturbation, etc. Auditory and visual hallucinations of the most terrifying character are often present. Sometimes there is a condition of religious ecstasy or excitement, suddenly or gradually developed. The patient may have confused but expansive ideas of a religious or social order, and he may be given to elocutionary displays with much gesticulation. There is sometimes a tendency to talk and act theatrically. The patient is given to making pompous harangues, consisting of but fragments of sentences. There is a verbigeration or a repetition of unintelligible words or syllable successions not belonging to any language, with an especial tendency to rhyming. These are often spoken with much effort, emphasis, and forcibleness. There is a tendency to contradict, oppose, and resist everything, to refuse food, resist being washed, dressed, etc. There are a peculiar erectness of carriage, slowness of movements, and immobility of features, a pathos of expression in speaking and writing, and a tendency sometimes to mystical language, together with the effort to discover mysterious allusions in the sayings of others. The characteristic katatonic condition of tension in psychical and muscular spheres may be observed in any stage, but it may be said here that the division into stages as attempted by some authors is not altogether practical or practicable.

In the so-called attonita stage there are rigidity and immobility, which is more or less complete. Catalepsy is often extreme. There is an absence of spontaneous movements, but when we attempt to produce passive movement there is a powerful resistance. The muscles are generally in a state of tension. Opisthotonos or tonic spasms are sometimes present. The tendon reflexes are often greatly exaggerated. There is a tendency for the limbs to remain for some time in the position given them, thus forcing the patient into uncomfortable positions, as in the condition of "flexibilitas cerea." The head may be just raised above the pillow, the thighs flexed on the abdomen, and the legs on the thighs. This immobility is often interrupted by rhythmic monotonous movements incessantly repeated in an automatic manner. These stereotyped movements are called "Bewegungsstereotypie." Another very important symptom is "mutism" or "mutacismus," or a pathological tendency to be silent. This mutism or dumbness alternates often with verbigeration and other varieties of repetition. Constipation is frequently present, and occasionally retention of urine. The faradic irritability is, as a rule, normal; the galvanic is at times often diminished. "Stadia, with obstinate taciturnity, confusion of thought and speech, may occur in some cases." Dementia supervenes only slowly, and rarely becomes extreme. Dr. Julius Mickle has this to say of the grouping of symptoms: The order in which stages occur is irregular. The circular nature of the disease is extremely irregular or abortive. One or any of the stages is apt to be absent in a given case. There may be alternately:

A.—Stuporous-cataleptic phases and excited phases.

Or,

B.—Depressed and excited.

Or,

C.—Successively { Melancholic depressed. / Stuporous. / Excited. / Confused. / Depressed.

Or,

D.—Convulsive phase followed by apparent temporary recovery, then successively,

Depressed and excited phases } in series.
Depressed and hallucinatory phases }

The most frequent complication, whether preceding or following upon the appearance of the mental disease, is tuberculosis. The tendency, if recovery does not take place, is for the patient to drift into a condition of dementia or for phthisis pulmonalis to develop and carry the patient off.

There are many abortive forms of katatonia, which might be termed *formes frustes*, and it is in atypical cases, which are so often similar to other varieties of psychosis, that diagnosis is difficult. For our part we do not believe that all of the cases which have been recorded in literature are cases of katatonia in the strictest sense.

Katatonia has been divided into two forms—katatonia mitis and katatonia protracta (Neisser). With katatonia mitis there is probably simple cerebral anæmia or œdema, and with the disappearance of the œdema and a general constitutional improvement the katatonic symptoms gradually disappear. The katatonia protracta is a meningitic form, being connected with the remains of a meningitis.

Katatonia is not a common disorder. Bondurant gives its frequency as one-half of one per cent.; Cleven-

ger, one and one-half per cent.; and Kiernan, two per cent. We ourselves are inclined to consider katatonia as an extremely rare syndrome, taking it in its strict sense. It is a symptom complex, any one of the manifestations of which is frequently to be observed in various forms of insanity, and this has doubtless led to the diagnosis of Kahlbaum's entity in cases which would often prove by more exact limitations to be quite different from the true Kahlbaum type. We report in this paper four cases, the only ones we have met with in a considerable experience in large asylums for a period of fifteen years.

Differential Diagnosis.—The katatonic state can be distinguished from hebephrenia or the insanity of pubescence, in which occasionally cataleptic conditions occur, by attention being paid to the following symptoms: The delusions of the former are intellectual, commonly depressed, and vary indefinitely; the delusions of the latter are vague and stupid. There is seldom a spasmodic element in the insanity of pubescence, and the serial phases are not present. The chief diagnostic difficulty lies, of course, in the differentiation of this syndrome from such cases of melancholia as manifest attonital or cataleptic states, but the presence at some time in the course of the katatonic type of cheerful or exalted and excited conditions, together with rhythmic gesticulations, attitudinizing, and verbigeration, would be distinctive. The flexibilitas cerea of katatonia sometimes differs from that occurring in melancholia attonita, by not coming on in sudden and brief attacks of cataleptic or ecstatic character, but by lasting for a long time (for weeks). The katatonic syndrome is differentiated from hystero-epilepsy by the different general history of the disease rather than by isolated symptoms. Chorea complicating insanity is diagnosed by the peculiar involuntary and irregular movements of the former, as distinguished from the voluntary and often rhythmical movements and gesticulations of katatonia. Furthermore, insanity with chorea is not apt to exhibit such variety of phases. Narcolepsy shows none of the mental or motor symptoms of katatonia, but consists of periodical attacks of quiet slumber.

Prognosis.—The prognosis should be guarded, as in any severe form of melancholia. Complete recovery is said to occur in only about three per cent. Recovery may follow immediately upon the stage of attonita, gradually or suddenly. Prognosis is rather more unfavorable if a state of excitement follows upon the attonita. This excitement may be interrupted by a new stage of depression. It may remit and the patient appear nearly well, but generally ends in dementia. If there is to be an unfavorable termination, periods of excitement and stupidity recur with increased frequency. Three-fourths of the fatal cases are said to die from tuberculous disease. It may be here said that Kahlbaum himself was inclined to look upon the prognosis as favorable, which is rather inconsistent with his idea of an organic basis for katatonia.

Treatment.—Treatment consists in the main of following the indications common to melancholia, in paying attention to symptoms, administering tonics, sedatives, and stimulants when needed. Faradization of the chest muscles has been recommended as a prophylactic against tuberculosis, though we confess to little faith in its value. Constipation should be combated by the administration of laxatives. It is often necessary to resort to artificial alimentation when the patient refuses food. Occasionally, though, the patient will eat small portions of food when he is alone. Retention of urine is occasionally present and may require attention. Amyl nitrite is useful in cataleptic and stuporous phases. Hydrotherapy is valuable as a general tonic and stimulant. Naturally the moral treatment followed in institutions for the insane is of the greatest service. Intestinal antisepsis and the opium treatment will be found valuable in this, as in other forms of melancholia.

As an appendix to this article we publish four cases that have come under our observation, together with our comments and conclusions:

Illustrative Cases. Case I. E. K —, female, aged thirty-one; married, with four children; Hebrew; common education; born in the United States; admitted to the Hudson River State Hospital in February, 1884; no heredity. The first evidence of mental disturbance was in August, 1883, after the birth of her last child, which she nursed for two months, when she became sleepless, restless, and inclined to refuse food. Soon she developed the idea that she would never recover, began to bemoan her condition, and said it was hard to die so young. There was complete anorexia. She took no interest in anything, became careless of her person and dress, and negligent of everything in which she had formerly been interested. Three weeks before admission she became suicidal, spoke of it, and attempted to choke herself and to cut herself with glass. She would bite her caretakers, and took every means possible to make away with herself. Her menstruation was regular. There was considerable constipation. The case was regarded as one of puerperal melancholia.

February 11th, two days after admission, she tried to beat her head against the bedstead; said some one was killing her children and putting them in a box; said arsenic was put in her coffee and that her mother was in the asylum; was sleepless and had to be fed forcibly. She became rapidly worse during the next few days, went into a condition of noisy excitement, calling for her mother, whom she believed to be in the building, mentioned her delusions of poisoning, beat and bruised herself against the bedstead, and refused all food. She was very suicidal. Her mouth and tongue became dry, she showed symptoms of exhaustion, and was fed with the tube for a considerable period.

She continued to refuse food, to resist all care strenuously, and to be desperately suicidal until March 15th, when she became cataleptic with marked flexibilitas cerea, absolutely silent, noticing nothing, not even her husband, who visited her; would swallow food put in her mouth; made no voluntary motions; pulse good, bowels moved by enemata; she began to wet and soil the bed, and as she grew stronger was looked upon as rapidly becoming demented. This state of catalepsy continued, with variations from time to time, for a month or more, when she began to be destructive of her clothing, would strip herself naked, and was filthy in her habits.

She remained in that condition, seldom uttering a word for months, until about the last of November, 1884, when she began to cry out loudly, "Bring me home to my children in New York," "Bring me home to my children in New York," reiterating this over and over from morning till night, and accompanying the phrase with rhythmic movements of the hands and arms, as if she were waving them in the direction she wished to go. There was a rhythm in the days, too, for every alternate day she was quiet in her chair and would whisper. This continued without variation for some two months, during all of which time she was eating and sleeping well and gaining in flesh.

About the middle of January, 1885, her verbigeration took another character, the gesticulations remaining the same. She began to recite all day long, every other day, with great rapidity and with infinite variation in rhymes of unintelligible words as follows: "Moccasins," "voccasins," "doccasins," "crockasins," "lockasins," "tockasins," "jockasins," "hockasins," "babies," "tabies," "gabies," "habies," "sa-

bies," "labies," "mabies," "kabies," "nobis," "gobis," "jobis," "chobis," "sobis," "pobis," "tikater," "fikater," "sikater," "likater," "mikater," and so on, *ad infinitum*. She changed to another word only when the possibilities of rhyme were exhausted. She was mentally confused. When asked why she made these rhymes, she said some one told her to, but this was probably an answer given because she could not explain why, for she had now no hallucinations or delusions. She was so confused that she did not feel sure it was her husband who came to see her.

A few months later she gave up the rhyming assonances and returned to the old phrase, with occasional variations: "I want to go home to my children in New York," "Won't I be glad when I get home to my children in New York," "What good times I'll have when I get home to my children in New York, . . . to my cozy home in New York, . . . when I get into the car which takes me to my husband and children in New York." This was the refrain for many months on alternate days, accompanied as before by rhythmic gestures of both arms in the supposed direction of New York.

In the spring of 1886, on the quiet alternate days, she began to sew. She steadily improved in flesh and was looked upon as in a state of dementia. There was no appreciable change in her condition during the summer. The verbigeration and gesticulation alternated with quiet and industrious days until the autumn of 1886, when improvement began to manifest itself in every way, and in November she was discharged as improved and went home with her husband on trial. There she recovered perfectly, so that not a vestige of the insanity remains, and she is to this day in full charge of her household and family, as reported to us not long since by her husband.

In this case we have, first, an ordinary suicidal melancholia, with delusions of poisoning, the killing of her children, etc., and hallucinations of taste and hearing and possibly of sight, rapidly becoming an aggravated case of melancholia agitata (of almost maniacal character), with a sudden lapse into a cataleptic condition lasting about a month; after which she was for some months silent, stupid, having to be dressed, undressed, and cared for in every way, when she began to show symptoms of verbigeration and rhythmic gestures described above. During most of the long period presenting these symptoms she was mentally confused, but her mood was rather cheerful. She used often to smile when any one would ask her why she talked in that way, and she seemed to take pleasure in what she was constantly reiterating.

Case II.—M. S. E——, male; admitted to Hudson River State Hospital, July 21, 1891; single, aged fifty, merchant, native of New York; common-school education; habits temperate; heredity, insane relations on father's side. On admission physical condition feeble; alleged cause of insanity, ill health.

History: Patient said to have been naturally of a cheerful disposition, easily influenced, but up to fifteen years ago to have been successful in business. At this time a change took place in his disposition; he became worrisome and fretful, hypochondriacal, neglected his business, and was generally depressed. Ten months ago he gave up all work, said that he "could not walk, could not talk, or care for" himself. He became silent, melancholy, and preoccupied. Three weeks ago he became greatly agitated and confused, and since then has paid no attention to anything said to him, and has not spoken except to repeat constantly meaningless syllable combinations, like "Oh, warmee," "Oh, warmee," "Oh, warmee," "Oh, huminum," "Oh, huminum," "Oh, huminum," "Oh, wow wow woro," "Oh, wow wow woro," "Oh, wody wody wody," "Oh, wody wody wody," "Oh, wody wody wody," "Oh, kody body," "Oh, kody body," "Oh, kody body," "Oh, kody body," "Oh, widdy widdy," "Oh, widdy widdy," "Oh, hum yank-um," "Oh, hum yank-um," "Oh, hum yank-um." He would constantly repeat these words with greater or less rapidity in varying keys and with strange gesticulations and great earnestness of manner, for fifteen or twenty minutes, when he would be silent for some hours and then start off with another combination. When spoken to he would become irritable, and commence repeating some syllable combination. His appetite has been capricious. His face, head, and neck at times are much congested, and at other times he is very pale.

On admission he was much agitated, moaned, and wrung his hands, but refused to say anything intelligible; when spoken to he would only repeat the above meaningless jargon, with gestures. Bowels are constipated, tongue is coated, pupils are dilated, heart's action is weak.

July 22, 1891, restless last night, moans constantly; pays no attention to what is said to him, but repeats his combinations, as "Oh, body body," "Oh, yum yank-um," etc., and with increased rapidity when an attempt is made to interrupt him.

July 23, 1891, is in bed all the time in semicataleptic condition, lies in awkward positions, resists all care: bowels constipated, but would not submit to enema.

August 14, 1891, no special change in past month. In bed; keeps legs and thighs flexed; resists all care; never pays attention to any one; is always silent except when repeating his meaningless syllables, like "Oh, te it," etc. Bowels are obstinately constipated; frequently troubled with emesis; is cared for with difficulty on account of his persistent resistance; often moans and groans, often has rhythmical movements of upper extremities.

During August, September, October, and November there was but little change in his condition.

In December he became stronger physically; was less resistive to care, would dress and undress himself; appeared to understand what was said to him, but never made any intelligible replies, but would frequently make harangues in meaningless syllables, repeating one combination from twenty minutes to one-half hour, and then changing to another.

January 27, 1892, spoke to-day intelligibly for the first time since admission; said to the attendant who was about to take him out to walk, "Don't let them take me out to-day."

January 28, 1892, is again disturbed and excited. Verbigeration marked.

During February and up to the 25th of March he was much disturbed, often noisy for hours at a time. An almost persistent insomnia was present. The latter part of February chronic diarrhœa developed, and persisted in spite of treatment.

March 25, 1892, he again spoke coherently and his verbigeration now stopped. Is very depressed and resists care. Has become thin in flesh and is quite feeble physically; is in condition of attonita; muscles in condition of tension; resists every change of position.

April 7, 1892, has been quiet since last date, but has resisted taking food and all care most strenuously; has had chronic diarrhœa and has been steadily failing for some weeks. Died this morning.

Post-mortem refused by friends.

Case III.—W. J——, admitted to Hudson River State Hospital, November 17, 1894; aged forty-four, male, married, railroad employee, native of Ireland; common-school education, habits intemperate, heredity denied. Physical condition on admission, fair; alleged causes, intemperance and worry and anxiety on account of loss of position.

History: Six months prior to admission patient lost his position on the railroad, and was unable to obtain work, and he and his family suffered much privation in consequence; he worried much at not being able to obtain employment, and gradually became depressed and despondent, and about four months ago attempted suicide by cutting his throat. The wound healed, but he became more and more despondent and suffered much anxiety at not getting work; is now troubled with insomnia and headache. A few days ago he suddenly went into a condition of extreme excitement, broke his watch, upset the table, and was generally destructive and violent. He was taken to the lockup for care. This condition lasted about three days, when he became quiet and appreciated his condition.

On admission he was profoundly depressed and indifferent to his surroundings; answered questions coherently but very unwillingly. After being here two days he went into a condition of melancholia agitata, which lasted two days; he suddenly became stupid, confused, and was in a condition of semicatalepsy, refused to talk or to speak. After being this way for two days he again became greatly disturbed, and continued so for five days. During this time he resisted all care, seemed utterly indifferent to his surroundings, at times was noisy, strenuously resisted all care and taking food, and it became necessary to nourish him through the œsophageal tube. He now became quiet, but continued to refuse food and was fed through the tube nearly two months. He had delusions of poisoning and would rarely answer questions, but would frequently groan and moan.

On February 13, 1895, he had two very severe epileptiform convulsions. During February and March he refused food, often moaned and sighed, but had no conversation with any person and resisted strenuously all efforts at care. During April and May mutism was marked, patient lay quietly in bed and did not speak a word, resisted care, kept lower limbs flexed and eyes shut half of the time: muscles were in a state of tension.

On June 10th verbigeration appeared. He kept repeating for hours, "O Lord, what will I do?" "O Lord, what will I do?" "O Lord, what will I do?" but otherwise was mute and paid no attention to any one or to his surroundings, but always resisted most strenuously being changed, cared for, or interfered with in any way. This condition continued with but little variation for six months. During this time he was visited repeatedly by his wife and family, but at no time did he pay any attention to them or hold any communication with them. He was continually in a state of attonita, but would often groan and moan, and at times would repeat for half an hour or an hour at a time, "O my God, what will I do?" "O my God, what will I do?" "O my God, what will I do?" with automatic gestures.

The latter part of 1895 he developed phthisis pulmonalis. He was in bed almost continuously during 1896, and his condition was that of attonita generally. His muscles were usually rigid and in a state of tension, his lower extremities flexed on the abdomen, and the face on his chest, his lips pouting out, his eyes usually half-closed, paying no attention to any one, but always making the most strenuous and persistent resistance to all efforts of care. He would daily have periods, of varying duration, of repeating in varying tones of voice sentences such as, "What will I do?" "What will I do?" "What will I do?" "O my God!" "O my God!" "O my God!" "Lord, have mercy on me!" "Lord, have mercy on me!" "Lord, have mercy on me!" etc. These repetition sentences varied from time to time.

He is now, in April, 1897, in the last stages of phthisis pulmonalis. He occasionally has verbigeration, but only once in three or four days. He is almost constantly in a stuporous condition. With the exception of his periods of repetition of words and sentences, he has been mute for more than two years and has held no communication with anybody. He is much emaciated and is steadily and slowly failing.

Died May 5, 1897.

Case IV.—D. M——, admitted to Hudson River State Hospital, May 26, 1896; male, married, aged fifty-four, railroad employee, native of Ireland; common-school education; habits intemperate; heredity denied. On admission physical condition feeble. Alleged causes of insanity, intemperance and ill health.

Patient enjoyed fair physical health up to about twenty months ago, when on returning from his work he complained of being sick and went to bed for a few days, and ever since then he has been more or less depressed and troubled with insomnia. He would often moan and groan all night, frequently wringing his hands. He, however, worked in an automatic manner up to two months ago, but he took no interest in anything, and on returning home in the evening he would moan and pace the floor until two o'clock in the morning, when he would lie down on a lounge for three or four hours. He was very hypochondriacal and restless; thought that everything he did and every move he made were wrong. His condition gradually became worse. At present he cannot sleep or rest day or night, paces the floor until his feet are blistered, rubs his forehead and wrings his hands until they bleed; refuses to go out of doors; says that he is miserable and wants to die, that there is no hope for him. After several hours of excited hand-wringing and pacing up and down, he becomes more composed and says to his wife, "What a bad spell I have had." He has had severe occipital headaches for the past two years, often sees black specks floating in front of him, and is troubled much with hearing imaginary voices and noises. Has numerous delusions of a depressing nature, is very self-accusatory, says that he has committed a mortal sin by practising masturbation, and that he must die.

During the first three days in the hospital he was quiet, depressed, reticent; eyes had a furtive, shifting appearance; said he was in great mental trouble; had periods of walking the floor and rubbing and wringing his hands in a strange manner.

May 29, 1896, had a convulsive attack this afternoon; afterward was very confused and was put to bed. He now became much disturbed, moaned and groaned a great deal, was very emotional, often cried and wept, had periods of picking the bedclothes, lay in one position, and resisted being changed and cared for.

This condition continued until August, when he began having periods, lasting for some hours, of being in a cataleptic condition. At all times he was depressed, but would often talk and declaim, with gestures, about the money he had made and how successful he had been at times. No special change occurred in his condition during September and October. The fore part of November he became very confused, and the symptoms of verbigeration occurred now. He would sit or stand and repeat, with monotonous and continued gesticulations, "I want to go home," "I want to go home," "I want to go home." . . . "I want to go home," "I want to go home," "I want to go home," etc.

During November and December verbigeration was very marked. He would frequently repeat, "I beg your pardon," "I beg your pardon," "I want to go home," "I want to go home," etc.

During January he was confused and quiet. Verbigeration was less frequent. In the fore part of Febru-

ary verbigeration again appeared, and often for hours he would repeat, "I am wrong," "I am wrong," "I want to go home," "I want to go home," "I do," "I do," etc., with monotonous gestures. This condition continued during February and March. These periods of noisy excitement would alternate with conditions of comparative quietude, when he would be in a semi-cataleptic condition.

In April his excitement increased, and he frequently, while making his harangues, would pull or tear his ears in addition to his other gestures. Often he repeated, "I know it," "I know it," "Kill me," "Kill me," "I should not be this way," "I should not be this way," "Why should I be so filthy?" "Why should I be so filthy?" He often seemed to be in great fear.

The patient is still under observation and is becoming very thin in flesh; often resists care; is very emotional, and has periods of noisy verbigeration alternating with comparative quiet.

Observations.—If there is one feature which impresses itself strongly upon the mind in reading the histories of the four cases just described, it is that of the melancholia present in each and characteristic in every respect of common types of this form of insanity. The cataleptic and allied motor phenomena observed in katatonia are not infrequently observed in severe forms of melancholia, in which the terrible nature of the ideas seems to exercise a paralyzing influence over the whole motor mechanism, but the physiology of these symptoms is not yet understood. As cataleptic conditions are often noted in insanity associated with hysteria, in pubescent insanity, in epileptic insanity, sometimes in general paresis, and in hypnotic states, they cannot be regarded as constituting a distinctive feature of katatonia. The most important characteristic of the katatonic syndrome serving to distinguish it from melancholia with catalepsy would seem to lie in the verbigeration and rhythmic gesticulations. But even these symptoms are met with in other forms of insanity, and the automatic repetitions of set phrases with automatic, even rhythmical movements, though not so marked as in these extreme forms to which the name katatonia has been applied, are familiar enough phenomena in long-continued cases of ordinary melancholia.

Conclusions.—Our study of the subject and of our own cases leads us to the following conclusions:

1. Katatonia is not a distinct form of insanity, not a clinical entity.

2. There is no true cyclical character in its manifestations; hence it cannot properly be classed as a form of circular insanity.

3. It is simply a type of melancholia.

4. It is not desirable, therefore, to retain the name katatonia.

5. The term "katatonic melancholia" or "katatonic syndrome" may be usefully retained as descriptive of melancholia with cataleptic symptoms, verbigeration, and rhythmical movements, but should be strictly limited to this symptom complex.

6. The prognosis in melancholia with katatonic symptoms is more grave than in any other form.

7. The treatment of the katatonic syndrome is the same as for other types of melancholia.

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A CASE OF ACQUIRED ATRESIA OF THE VAGINA, COMPLICATED BY PREGNANCY.[1]

BY AUGUSTA VELDEN, M.D.,

M. C——, Italian, aged thirty-five years, came to the dispensary September 10, 1896, on account of suppression of the menses for six months. She had been married fifteen years, had given birth to one child fourteen years ago, and since had menstruated regularly until six months ago. On my suggesting an examination for pregnancy, she said that this was impossible, and explained that the vagina had been "closed up" for fourteen years. Examination showed this to be really the case. The vagina ended blindly at the junction of the lower and middle third or about one inch from the introitus, being constricted in a funnel-shaped manner by a very dense cicatricial ring, the apex consisting of a small diaphragm of very firm unyielding tissue, which seemed completely imperforate, but on close inspection through a speculum showed a minute opening, which admitted on pressure a fine probe, and through this the menstrual flux had escaped *guttatim* during all these years. The parts were sensitive to pressure. The vulva gaped somewhat, on account of the perineum having been lacerated, and presented a rectocele and cystocele below the cicatricial occlusion, making the stenosis appear nearer the vulvar orifice than it really was. Above the symphysis was a globular, elastic tumor, which could not very well be anything but the pregnant uterus of about four months.

The history of the case was as follows: The patient became pregnant for the first time fifteen years ago, with the result of a stillbirth at term, after a protracted labor superintended by a midwife. She states that the head descended into the soft parts of the pelvis, and, remaining there, made no further progress. The parts became œdematous and very painful and "turned black," but the midwife did not consider it necessary to call a physician. Finally a dead child was born without any operative interference, the labor having lasted twenty-four hours. She states that after this she was very ill and had fever, but cannot give any further intelligent account of the puerperium; twenty-two days after delivery she discovered that the vagina was completely occluded, and sought the advice of a physician in Palermo, who recommended operation. This she refused, and the condition that existed then had now existed for fourteen years, with this variation only, that a pregnancy had now supervened. There is no doubt that the atresia in this case was due to the prolonged pressure of the head on the vaginal walls, thereby causing necrosis and extensive loss of tissue, resulting in the formation of cicatricial tissue. The patient had in no way been aware of any narrowing of the vagina previous to her accouchement.

Being informed of her condition, and told that an operation was necessary, she consented, although incredulous as to her pregnancy. Five days later she was etherized; the pin-hole opening was incised until the finger could be admitted, which revealed the fact that the very dense annular stricture was about one-half inch in thickness, thinning out toward the lumen. Above, the vagina was ample, and a softened cervix was felt and bimanually the pregnant uterus of about four months. With the galvano-cautery knife the thick cicatricial tissue was cut through in several places—care being taken to avoid the urethra and rectum—until a large Cusco speculum could be introduced and opened widely. A thick plug of iodoform gauze was placed in the vagina and renewed daily after antiseptic douches, until the vagina was healed and promised well to remain in a good condition. But it was soon evident that contraction was beginning again, in spite of the tamponing. The patient ceased coming regularly to the clinic which she had attended after the vagina was sufficiently healed, and when she returned after a time of absence it was found so contracted that it with difficulty admitted the index finger, and attempts at dilatation were of no avail. The pregnancy was advancing, and the patient herself was now becoming convinced of her condition. It was then decided to wait for a time to see if any spontaneous softening would take place, but such not having been the case in the course of three months, it was decided to open the vagina again and introduce a large Sims glass plug. It seemed reasonable to think that whatever ground could be gained before the advent of labor would be an advantage, obviating the dependence on incisions and forceps *sub partu*, with incalculable rents and surely a field for infection.

On December 20th the patient was etherized again, being at this time nearly seven and a half months pregnant. The stricture now just admitted the extreme tip of the little finger. The galvano-cautery knife was again used, as it seemed on the whole preferable to avoid hemorrhage in a pregnant woman already anæmic, and also it seemed that a large glass plug ought to overcome effectually the greater tendency to cicatrization and further solidification consequent on using the cautery. Several incisions were made around the entire circumference of the cicatricial mass, avoiding urethra and rectum, laterally cutting more deeply than the previous time, to secure as much space as possible. Judging from the not inconsiderable bleeding as it was, it must have been excessive had a bistoury been used. A Sims glass plug, four and three-fourths inches in circumference, the largest that could be secured then, was introduced and held in place by a stem inserted into the hollow of the tube (in this case the large vaginal nozzle of a fountain syringe) with four bands attached, the latter being fastened to a waistband. Cotton was packed around the stem in the hollow of the tube, and, planted firmly in this way in the cotton, it proved an effectual means of keeping the tube in place. There were no untoward effects from the operation. Two days later a slightly larger glass tube was secured and introduced before any contraction had taken place. After a few days digital examination showed the vagina healed and spacious without any vestige of the constricting ridge, the mucous membrane being uniformly smooth and relaxed. The glass plug was now exchanged for a Sims plug of hard rubber, to avoid the danger of breaking; this latter measured five and one-fourth inches in circumference, and was thought to be as large as the patient could wear without too great inconvenience. To prevent irritation, cotton was padded about the vulva under the flanges of the tube and under the bands. It was removed daily for cleansing and irrigation of the vagina, being worn otherwise constantly and without much discomfort. But on the fourteenth day after the operation the patient allowed the tube to come out, and, having left it out for sixteen hours, was unable to replace it. I found the vaginal lumen contracted and could not replace either the tube worn daily or the next smaller size, and, having no other with me, the patient had to spend the night without a tube.

The following morning, January 3d, I found to my chagrin that the only tube that could be introduced was the fourth in order of size from the one worn daily, being one inch smaller; the constrictor vaginæ resisted as firmly as if already transformed into a cicatricial band. January 4th, I found the vagina

[1] Read before the Alumni Association of the Woman's Medical College of the New York Infirmary, March 12, 1897.

more relaxed, the constrictor vaginæ having been partially paralyzed by the tube, so that the next larger could be inserted with ease. January 5th, I replaced the tube by one next larger, without difficulty. In this way having gradually returned to the largest hard-rubber tube this was worn up to the commencement of labor, except for daily irrigation of the vagina, the patient continuing in a good condition throughout.

Thus the calibre gained, five and one-fourth inches, was maintained up to the very beginning of labor, but as for any further spontaneous softening or increased dilatability as the pregnancy advanced, none could be detected. The vagina continued to feel spacious, no constriction or ridge being discoverable by the examining finger, but through a large glass tube one could see a pale zone of tissue, the path of the former stricture, half an inch wide and surrounding the entire vagina, and attempts to stretch this with two fingers showed it to be unyielding. The introitus vaginæ and adjacent parts also showed a noticeable lack of softening, and the varicose condition and consequent violaceous or purple hue common in advanced pregnancy was almost absent.

Labor pains commenced on February 12th at midnight (at term, having been predicted for February 10th), becoming frequent and violent at 7 A.M. While the cervix was dilating, which it did but slowly—the amniotic fluid having escaped gradually during the last three days—the condition below did not seem unpromising, except for a slight bridge of tissue in the right upper quadrant of the vagina, the only part of the zone formerly a stricture that in any way suggested a stricture, and had it not been for previous knowledge of the condition of the vagina one would not have thought of any abnormality or noticed any barrier to delivery, except for the slight ridge just mentioned, which was elected as a site for incision should such be needed. The recto-vaginal septum was smooth, relaxed, and thin, and there surely no incisions could be made. But no sooner had the head passed the cervix than it became too evident that the zone of new tissue was a most formidable barrier to the further progress of the head. The channel of five and one-fourth inches that had been attained through the operation was of no more yielding nature than the pin-hole opening first discovered, and formed a hard circle on which the violent pains had no effect whatever. Instead of dilating, the aperture seemed to become actually smaller, with the head pressing hopelessly against it. This opinion was concurred in by Dr. Frances Young and four students who witnessed the case with me, who an hour before had been unable to discover any signs of a stricture and now like myself became convinced of the unyielding nature of this new tissue. After a period of terrific pains and no yielding, two incisions were made with a probe-pointed bistoury introduced between the head and the vaginal ring, in the right upper quadrant, one rather superficial, one deeper, causing considerable hemorrhage but no apparent progress. The incisions were made during the pains, and the patient felt then comparatively little on account of the severity of these. Half an hour later, nothing having been gained, two more and rather deeper incisions were made, one in the left upper quadrant of the circle, the other laterally on the left side, with profuse hemorrhage, which, however, was soon checked by the on-pressing head. The violent expulsive pains were now effectual, and in a few moments the child was delivered, slightly cyanosed but soon revived. The placenta followed immediately and the uterus contracted well. The child was followed by a gush of meconium and had meconium in the mouth. The labor had lasted in all ten hours, with severe pains the last three hours. The patient was in a good condition and had felt the incisions only slightly, except the last one. On examining the vagina it was found that the incisions had enlarged into considerable rents, which, however, had not extended into dangerous ground. The last deep cut proved to be rather closer to the vicinity of the rectum than was intended, but there was no tear into the rectum. The deep incision on the right side made a pocket-like rent upward in the vagina. The thinned, now bell-shaped cervix was well constricted at the internal os and the vaginal roof all around the cervix was intact, no tear having reached up to that vicinity. The cervix was prolapsed so that it partly protruded at the vulva. There was very moderate hemorrhage after delivery. The vagina was syringed out with warm carbolized water. It was thought best to leave the wounds unsutured, as it seemed that the lochia flowing over them would delay their healing and thus prevent contraction to some extent.

The infant was of the male sex, weighed seven pounds, and was to all appearance healthy. It presented the anomaly of a supernumerary toe on the right foot.

The puerperium was uneventful and recovery uninterrupted. The vagina was irrigated daily with sterilized water. There was at no time any rise of temperature. On the eighth day, the vaginal wounds being healed and no longer tender, a vaginal speculum was introduced with instructions to wear it two or three hours daily if possible, which was done for some days.

In searching through the literature for information while observing this case, it was found that of 313 cases of atresia vaginæ complicated by pregnancy—299 of which are collected by Neugebauer[1]—257 were delivered *per vias naturales*, while 56 required Cæsarean section. Of the 257, spontaneous delivery occurred in 82 cases, the majority of these being of the membranous or congenital variety, or simply narrowings of the vagina, 11, however, resulting fatally from rupture of the uterus or vagina or from peritonitis. In 122 cases delivery was accomplished by incisions or by forceps, or by both, with 18 deaths from rupture of uterus or vagina, peritonitis, and eclampsia. In 21 cases version, perforation, or embryotomy was required, 6 ending fatally for the mother, the death rate for the child being in all the cases, by whatever mode of delivery, naturally much larger. The remaining cases, 32 in number, are incompletely described. Of the 56 cases that required Cæsarean section, several had contracted pelvis in addition to the atresia.

Of operative measures during pregnancy on account of atresia vaginæ, eight cases have been gleaned—one of artificial abortion in the fifth month,[2] two of artificial abortion in the seventh month, one with perforation of the head (159 and 233);[3] one of operation for a membranous stricture (293); one case operated by Behn (62), in which incisions had to be made during labor nevertheless; one (98) in which stricture returned, *subpartu* incisions and forceps, eclampsia and death; one (254) in which the lumen of the vagina was enlarged sufficiently to admit two fingers, by means of two longitudinal incisions laterally, one of which was sutured transversely, the other covered by a bit of tissue from a colporrhaphy case just operated upon—later, contraction so that one finger only was admitted, *subpartu* incisions and forceps; one[4] of operation in the third month for congenital absence of vagina with enlarged meatus urinarius, aborting on third day.

As regards the post-partum return of the stricture, mention is made in only ten of the cases, in nine of

[1] Neugebauer: "Zur Lehre von den angeborenen und erworbenen Verwachsungen und Verengerungen der Scheide," Berlin, 1875.

[2] Bazzani: Sperimentale, Firenze, 1875, xiii., 257.

[3] Numerical order of case in Neugebauer's collection.

[4] Sale: Tr. Mississippi Association, Jackson, 1880, xiii., 162.

which there was almost complete return, in one no return in five weeks. In the present case the vagina is as yet ample, four weeks after delivery.

THE EARLY DIAGNOSIS OF SPORADIC CRETINISM, WITH A REPORT OF TWO CASES OF CONGENITAL SPORADIC CRETINISM.

BY HENRY KOPLIK, M.D.

INFANTS or children who are the subjects of sporadic cretinism, in whom the disease has existed for a year or more before the diagnosis is made and treatment with thyroids begun, are not always restored to a mental and physical state exactly equivalent to the normal one. The writer has observed in two cases which have come under his observation that although the symptoms of idiocy and myxœdema disappeared, the children after fully two years of treatment remained somewhat deficient in physical and mental development. In one case, a boy, fifteen months old when treatment was begun, after two years of constant administration of thyroids, is still unable to talk sentences. The vocabulary seems limited to a few words of one or two syllables. The physical development is that of a child a year or so younger. In another case, in which the treatment was begun after the disease had existed fully a year or more, the child, though bright, talks to a very limited extent.

If these things are to be confirmed by other observers, as I am certain they will be, it would seem highly desirable to recognize this disease very early in its development, before the nervous system has been seriously compromised by a more or less prolonged period of retarded growth or action of infectious agents or influences which are active in this affection. In the published American literature of sporadic cretinism, we have no cases of congenital cretinism (sporadic) published as such. Townsend,[1] in 1894, reported a case of congenital rickets which terminated fatally in nine days. If we accept the classification of Horsley, we should now include this case as one of congenital sporadic cretinism. Of the cases published by foreign authors, we find that only a mention of the congenital cases is made by Fletcher Beach,[2] who in a study of fifty-two cases of sporadic cretinism found only nine cases which showed symptoms at periods from birth up to the ninth month. There is reason to believe that a vast number of the cases published, especially those cases which have come under treatment at the age of one and one-half years to two years, forming the mass of the literature in America, must have been sufferers from the disease long before the symptoms were discovered by the physician. In many of the younger cases of sporadic cretinism the history will state that the mother first noted the illness of the infant at the fifth or sixth or twelfth month. These statements are fully unreliable. It will be seen that in the two rare cases here reported by the writer, the mothers did not notice anything wrong with the general condition of the patients and came for relief in other directions (intestinal colic or jaundice). In one case a physician failed to notice the symptoms which were characteristic of beginning cretinism. The children or infants who are as a rule brought for treatment to the clinics, and who are suffering from sporadic cretinism, are brought at a period when all the symptoms have developed in their most pronounced types, so pronounced and marked that not only the mothers but strangers are cognizant that the patient is well started on a form of severe disease. It is for these reasons and to aid the early discovery of the cases of this disease, that the following rare examples of early cretinism are published as a distinct set of cases.

FIG. 1.—Congenital Sporadic Cretinism, before Treatment. Child four weeks old. (Case I.)

FIG. 2.—Congenital Sporadic Cretinism. Child shown in Fig. 1, after four months of treatment.

CASE I.—Female infant, aged one month, seen first December 24, 1896. This infant is a sister to a fully developed cretin, and is the first infant born to the mother after the cretin referred to had been under treatment fully two years. Mother and father are first cousins; no goitre in either. The birth was a normal one. When the child was four days old icterus neonatorum appeared and persisted six weeks. At the age of one month, the mother brought the infant to me for jaundice. I saw a fairly nourished infant still jaundiced; the expression of the face was strikingly prognathous. The infant did not cry unless severely teased; it seemed very torpid. The head was broad at the base of the skull, smaller at the summit, not markedly pointed. The abdomen was distinctly rotund. The extremities were short, but not deformed. The child was short and thick set. There was no myxœdema of the skin, but the whole surface was cool to the touch; the lips were slightly puffed; the tongue was very large and thick (macroglossia); the neck was short and thick.

Head: circumference, 38 cm.; antero-posteriorly, 23 cm.; bitemporal, 20 cm.; rather of the oxycephalic type.

Fontanelle, anterior, 3½ by 2 cm.; sagittal suture open to the occipital depression

Thyroid gland not palpable.

Hæmoglobin, 85.

Temperature, rectum, 96° F.

As said above, the child was stupid, and clapping of the hands failed to attract its attention. Under thyroid treatment the temperature gradually rose in the rectum to 98° F. The infant became bright and seemed to notice surroundings, and smiled. The tongue became markedly thinner and the face normal in expression. It played and laughed and cried as other infants; the forehead was broader and had lost its wrinkled appearance.

February 15th, hæmoglobin, 60. Temperature, rectal, 98.4° F. At no time could the thyroid be felt and no supraclavicular masses of fat were present.

In this case we find a newborn babe, whose mother had previously given birth to a cretin, showing symptoms of slight cretinism. The stupidity of the infant, the reduced internal temperature, the peculiar con-

[1] Archives of Pediatrics.
[2] British Medical Journal, 1896.

formity of the extremities as related to the trunk, the wrinkled skin on the forehead and hands, the narrow animal forehead, the thick lips, the thick immense tongue (macroglossia), the coarse cry, the immediate improvement of the stupidity under thyroid, and the reduction of the thickened and hypertrophied tongue —all point to the inevitable conclusion that here we had to deal with a congenital cretin, who if allowed to progress would develop the symptoms of the disease in their more pronounced forms. It is an interesting fact that in this case, early in the disease, the hæmoglobin was greater than later on, though the infant was immediately placed upon thyroids. This was also the case with the second patient, in whose history blood data are given and which will be discussed later on.

May 25th, at the present day, with six months of treatment, we have a very bright and interesting infant, in every way resembling the normal infant. It attempts to stand and utters sounds. The infant is still under thyroid therapy, one-half grain t.i.d. On the whole, the infant is a much more satisfactory case after six months of treatment, as far as restoration to normal conditions is concerned, than its brother was after the same period of treatment. The brother came under my care at the age of fifteen months, at that time a fully developed cretin. He is also still under observation. Though two years under treatment, as stated above, the brother is not the complete equal of other children of his age. He cannot talk sentences: is an interesting child, but impresses one as equal to a child of two years of age rather than one nearly four years old.

Case II.—W. F——, female infant, nine weeks old. Mother and father healthy; mother or father have no goitre nor any other abnormalities; no consanguinity. This is the first baby; breast fed. Mother from birth of the baby, which was normal, head presentation, noticed that the baby was stupid. The baby did not resemble either parent, having a small low forehead, flat nose, puffy eyelids, thick lips, and large tongue. The abdomen has been quite large, and the baby cried incessantly, so much so that the mother took the baby to a physician, who diagnosed an obstruction of the gut. She then brought the infant to the writer.

Status præsens: Looking at the infant, it has the gross characteristics in expression of a typical cretin, but in less pronounced form. The forehead is low and narrow, the eyelids are puffy and œdematous in appearance, the bridge of the nose is flat, the lips are thickened: the tongue is large, broad, thick, and protruding at times. The abdomen is large, and the thighs and legs are quite dwarfish as compared with the size of the trunk. The skin has a greenish hue; no thyroid can be felt; the external temperature of the skin is much below normal, hands and feet are cool; skin of hands has a finely wrinkled look. Cry is coarse and deep. Internal rectal temperature, 97.8° F. The bowels are constipated.

Measurements, head: fontanelle, anteriorly and posteriorly, open; glabella to occiput, 18 inches; vertex, 8¼ inches; bitemporal diameter, 9 inches. Chest, 14 inches. Length of arm, 13¼ inches; length of forearm, 8½ inches. Length of body, 18 inches.

Blood, May 15th (Fleischl): Hæmoglobin, 105; red cells, 3,026,000; white cells, 13,500. April 29th, hæmoglobin, 55. May 22d, hæmoglobin, 65.

Course of case: The infant improved in its general appearance from the first week of treatment. The writer noticed that it became quieter or brighter. The puffiness of the eyelids has gradually subsided. The lips have become thinner, and the tongue has improved, so that to-day it is quite slender and much like the normal tongue. The temperature has gradually risen to the normal, and the color of the skin has lost its greenish tint and taken on a healthy hue. The cry is no longer deep and hoarse. The abdomen is not large and distended, and the dwarfish appearance of the legs has disappeared. The baby seems as bright as a normal baby of its age (three and one-half months). The expansion and growth of the forehead and bridge of the nose, both of which have lost their cretinal conformity, are most interesting, and now the face has a tolerably pleasant appearance. The baby is beginning to remember its mother. Takes thyroid, one-half grain t.i.d.

In the above case we have a typical cretin of the congenital type. There were all the symptoms of cretinism developed in an early stage. The beginning myxœdema of the skin, the prognathous expression of the face, the low forehead, the flattened bridge of the nose, the thickened eyelids, the thickened lips, the enlarged and thickened and broad tongue, the dwarfish conformity of the body extremities as compared to the length of the trunk, the protuberant abdomen, the skin of a greenish hue, the marked torpor, reduced internal

Fig. 3.—Congenital Sporadic Cretinism, before Treatment. Child ten weeks old. (Case II.)

Fig. 4.—Congenital Sporadic Cretinism. Child shown in Fig. 3, after one month of treatment.

temperature—all point inevitably to the diagnosis of congenital sporadic cretinism.

It may be remarked that the hair in this case was not as yet dry and sparse, but glossy and abundant.

The blood examinations in both these cases were of interest, showing that in the very early stages of the disease the blood is not affected by an anæmia such as we find in advanced cases which have not been the subject of treatment. Thus in an advanced case, aged fifteen months, the hæmoglobin before treatment was 18 (Fleischl); in another, aged twenty months, 25 (Fleischl). In the first case reported in this paper, the hæmoglobin fell to 60, and now is 65. In this case the hæmoglobin was taken after treatment had been begun. In the second case, hæmoglobin at the outset, 105; red cells, 3,026,000; white cells, 13,500. April 29th, hæmoglobin, 55; May 1st, hæmoglobin, 53; May 22d, hæmoglobin, 65.

Thus we have at the outset nothing otherwise than is found in the normal infant, as far as the hæmoglobin is concerned; the blood has the characteristics practically of the so-called fœtal blood of Hayem.

[illegible]

Chronic Otorrhœa.—

℞ Iodide of potassium ..... gr. xx
Tincture of iodine ..... ℥ ij
Alcohol,
Glycerin ..... āā ʒ iv.
Iodoform ..... gr. xx.
A small quantity to be injected into the auditory canal.

—*Medical Press and Circular*, April 7th.

ROUGH NOTES ON SOME ANOMALIES IN ANATOMY.[1]

By R. HARCOURT ANDERSON, M.D.,

THE anomalous anatomical conditions, or, to use the term of the biologist, specimens coming under the title of variation, found in the dissecting-room as a rule are viewed by the average student in the light of those conditions which we are wont to designate mere scientific curiosities, or, if attention be devoted to the etiological factors in the production or evolution of the same, the subject is usually viewed in a superficial sense. The modern student of human anatomy, ever on the alert for the practical, and looking at these deviations from the normal with the eyes of the author of his text-book, little knows the fund of information to be gained by an investigation which would lead into the domain of the comparative anatomist or thinks the requisite knowledge of human anatomy to be so difficult of attainment that the time spent in the consideration of anomalies would be wasted.

There is so much drudgery of thought connected with acquirement of the almost endless details of practical anatomy that it will be admitted fair treatment to make use of any honest means to fix the composite parts of the complex subject in our minds, and so the study of anomalous conditions will be seen to be one of the pleasant byroads to our goal, although perhaps more applicable to the advanced thinker than the college student. To review this subject it is necessary that the ploughshare of thought be forced into ground which has already been deeply furrowed, but it is not the object of this short paper (which is arranged in the form of notes, more or less closely connected) to enter deeply into the very interesting but mostly theoretical disputations concerning the causation of anomalies, which necessarily include those very complex subjects, viz., evolution and heredity

It will answer our purpose to touch lightly on some of the more prominent facts and theories, recalling at this time the words of that great thinker, Darwin, that "we are extremely ignorant on this subject."

Now we may state in passing that even the least important deviations from the normal which may be found form certain or uncertain indices to the processes intimately connected with knowledge of changes that are to be considered in the study of evolution.

According to the verdict of advanced thinkers and investigators, man now takes his place in the zoölogical system, and therefore comparative anatomy is recognized as an infallible key to human anatomy. Such low forms of structure as the cranial bones of the osseous fishes, though exhibiting numerous varieties, admit of being compared with even those of the human subject; again, in the muscular system we see that the musculus psoas parvus, which is often absent in the Caucasian race (although Cruveilhier has found it even double on both sides), exists frequently although sometimes unilaterally in the negro and is invariably present on both sides in the ape. Many illustrations are possible, but so much for adult structure.

Regarding the influences of stages of embryonal development, those in the higher structural organizations bear a certain definite relation to permanent arrangements in the lower animals, viz., the intermaxillary bone, which in man is found only in the earliest fœtal period, occurs in all the mammalia and supports the incisor teeth, except when there are none. A vast number of examples can be quoted, all pointing to analogy in the growth of higher and lower organisms.

Read before the New York Medical Association.

Before the views of Charles Darwin were given to the world, most naturalists believed that species were distinctly created and immutable productions, although there were not wanting at that time observers whose words indicate the belief that species do undergo modification and that existing forms of life are descended by true generation from pre-existing forms. Even prior to this, referring to classical writers, Aristotle, in "Physical Auscultationes,"[1] foreshadows the theory of natural selection.

Lamarck in 1801 upheld the doctrine that all species, including man, are descended from other species, and that all change, in organic as well as in inorganic structures, is the result of certain laws, chance never entering into evolutionary factors. These conclusions were based on gradual change of species by difficulty in distinguishing species and varieties, by gradation of certain forms, and by production of analogical characters. He attributes something to the direct action of the physical conditions of life, something to the crossing of already existing forms, taking into consideration use and disuse, *i.e.*, habit. He held to a law of progressive development, that all forms of life thus tend to progress, and he accounts for the present existence of simple productions by the view that they are now generated spontaneously.

Geoffrey St. Hilaire, as early as 1795, suspected that what are now known as "species" are various degenerations of the same type, though he did not believe that existing species are now undergoing modification.

Dr. W. C. Wells, in his famous "Two Essays upon Dew and Single Vision," recognizes distinctly the principles of natural selection, applying it only to races of man and to certain characters alone.

Mr. Herbert Spencer concluded that species have become modified, attributing the modification to change of circumstances.

In view of the investigations made by many illustrious observers during this century in the domain of comparative anatomy, we may define an anomaly proper as the deviation at birth from what is recognized to be the ordinary structural composition and form, comprehending in the analysis various influences, such as habit, nationality, climate, heredity, the transmission of mutilations; and space is given by some observers to the retrograde change called degeneration, the influence of which on some races and individuals is abundantly shown. And here it may be admitted that some organs in man are distinctly degenerative and anomalous; for instance, his teeth are mechanically inferior to those of the domestic cat; some of his senses, suchas smell, are also lacking in acuteness; but by virtue of his massive brain and complicated hand he is the most adaptable and intelligent vertebrate on the surface of the globe.

Regarding the rôle which anomalies play in the evolution of man, at least as far as the muscular system is concerned, I will quote Osborn: "The evolution of a new type must consist in the accumulation of anomalies in a certain definite direction by heredity, and therefore an anomalous condition in one generation may become typical in another."

Galton has very aptly said that the human organization is a new building built up of fragments of old ones, the old ones corresponding to various types of life extending into the back ages; at least the evidence on this point is just as conclusive and even more so than that upon which geologists recognize the age of this terrestrial globe.

It is more reliable, inasmuch as dependence is not based altogether upon fossil characters. Such rudimentary structures as the appendix vermiformis and the musculus panniculus carnosus were undoubtedly

[1] Lib. II. cap. viii.

formerly of some specific use, functionally or otherwise, to the requirements of the economy at that time. The presence of these and other structures included as anomalies partially illustrates the conservative power of heredity.

Probably no organ is stationary in development, although apparently it would seem so under certain conditions of environment; this, however, is occasional, and physiological and biological evidence goes far toward proving that almost all organs are in a state of change, some more rapidly than others, and here it may be mentioned that man, as a whole, is in a state of evolution almost as rapid as that which has produced the modern horse from its small five-toed ancestors.

Looking into the subject practically, the difference in determining whether an organ is developing or degenerating at the same time is great; its variability or tendency to present individual anomalies indicates that some change is taking place. This is shown in the very variable peronæus tertius (Wood) and numerous other muscles, among which is the palmaris longus.

Now, as change of organ is associated with degree of utility, in the analysis we must include the amount of service rendered by the part, and, as this is often determined by the amount called upon for the maintenance of function necessary to health under various conditions of life, a few words upon the influence of habit will not be amiss.

In the production of anomalies in individuals we have as factors the destructive power of degeneration, which is essentially adaptive as against the protective power of heredity, and the result may be viewed minus or plus the influence of habit and the various conditions of life. It is collateral to this sentence that the part found to be degenerating by disuse in the individual will almost invariably be found to be degenerating in the race, illustrating again the conservative influence of heredity and also of conditions of life upon racial characteristics.

Some of the most conspicuous features of modern habit are the considerations of the fashions and occupations which demand complicated movements of the thumb and fingers, the outward turning of the foot in walking, and movements of the forearm.

Thompson concludes that the tibia is the most variable in form and length of any long bone in the body. Platycnemia or flattened tibia is most frequent in people following occupations involving climbing, etc., and is usually associated with great development of the musculus tibialis posticus.

The influence of the squatting-habit is seen in some races in the formation of a facet upon the neck of the astragalus by the tibia. This is almost always absent in European races, although it has been found well developed in certain occupations, such as that of the tailor, etc.

Professor Dwight, of Harvard Medical College, believes that when a third trochanter of the femur is found the condition is one of true reversion and not an acquired variation, as it is found among the Sioux Indians in fifty per cent. and in the Laplanders to the extent of sixty-four per cent. Here we see the instance of an anomaly becoming the normal conditions in two nationalities. It is present in Swedes in thirty-seven per cent. of the cases, and like the condylar foramen is an ancient mammalian characteristic.

It might be said that the bones of the foot are developing on the inner and degenerating on the outer side, with slight loss of movement in the small toe. The anomalies in muscles, owing to various difficulties in tabulation and analysis, have never been adequately analyzed, but it may be stated generally that the number of muscles has been steadily increasing in the primates while the number of bones has been diminishing. In man the number of muscles has probably been increasing in the lower arm and diminishing in every other region; it is difficult to consider this, because some muscles revert to a former condition of greater specialization of movement. Under the usual physical conditions of life, degeneration is an extremely slow process, so much so that the change which is produced in the normal tissues can hardly be observed, but, given favorable conditions, degeneration can become very rapid; indeed some organs are so far on the down grade that they are supplied with nutrition for past services, performing none at present.

One symptom of decline is variability where the organ seems to show its own uselessness by being absent. Humphrey says: "The muscles which are most frequently absent by anomalies are in fact those which can disappear with least inconvenience, either because they can be replaced by others or they play an altogether secondary rôle in the organism."

The rudiment first becomes variable as an adult structure, then as a fœtal structure; then the absences slowly increase until they reappear as reversions; finally, they cease to revert and are lost. The varieties in the muscles of the thumb and carpus are very numerous, which would seem to indicate that those in this region are being gradually and progressively developed for specialized movements. Baker says: "On comparing the human hand with that of the anthropoids, it may be seen that efficiency is produced in two ways. First, increase in the mobility and variety of action of thumb and fingers. Second, reducing the muscles used mainly to assist prolonged grasp, they being no longer necessary to an organ for delicate work requiring constant readjustment.

The reduplication of the inferior tendon of the abductor pollicis (or extensor ossis metacarpi pollicis) (Wood), which is sometimes provided with a distinct muscle, points to the birth of a second abductor. Duval believes that the flexor longus pollicis in evolution between man and animals a little lower in organization reverts, as in the ape. Its place is supplied by a division of the flexor profundus, and the latter arrangement I have observed many times in the dissecting-room. Our grasping muscle, the palmaris longus, which varies greatly and like the plantaris of the leg has been replaced by other muscles, in negroes reverts to its former function by flexing the fingers, due to its insertion into the metacarpals; this variation may partially explain the grasping-power of infants, which is so great that the reflex contraction of the fingers will sustain their weight upon a slender crossbar.

The conclusions of Wood and Testut are that variability is independent of age or sex, of general muscularity, and of abnormal mental development. Wood found 981 anomalies in 102 subjects, and of these 623 were developed on both sides of the body, while 358 were unilateral. Statistics collected by Wood, between 1867–1868 in the dissecting-room of Kings College, London, upon 36 subjects (18 of each sex), show that there are more anomalies in the limbs than in the trunk, that anomalies are rare in the pelvis, that there were 292 anomalies in the arms to 119 in the legs, and that in both limbs the anomalies increase toward the distal segments, culminating in the muscles of the thumb, where they rise to ninety per cent.

The study of myology in the lower vertebrates shows that muscles arising from or inserted into bones in the vicinity of joints sometimes become metamorphosed into tendons near their attachments, and with this change there is tendency for alteration in the point of attachment. Thus a muscle originally inserted below a joint may eventually have its insertion above

the joint, and *vice versa;* this change is usually known as migration of muscles. The human ligaments have in most cases been evolved as the result of secondary changes in muscles adjacent to joints. Sometimes ligaments represent remnants of cartilaginous and even bony structures, the capsular ligament being usually derived from the periosteum.

In the knee-joint the adductor magnus, having shifted its insertion from the tibia to the femur, leaves part of its tendon as the internal lateral ligament; the external lateral ligament represents the tendon of the peroneus longus migrated from the femur to the head of the fibula. The ligamentum teres in the hip-joint was probably the tendon of the pectineus detached from the muscle during evolutionary changes. Again, the greater sacro-sciatic ligament was originally the tendon of origin of the biceps femoris. The lesser sacro-sciatic is derived from the fibrous regression of portions of the coccygeus. The sacro-sciatic ligaments represent the muscles which lift, depress, and wag the tail in those mammals furnished with such an appendage; and indeed these structures I have observed to be occasionally replaced by muscular tissue. The coraco-humeral ligament is derived from the original tendon of insertion of the pectoralis minor, and not infrequently the muscle is inserted into the lesser tuberosity of the humerus, the ligament being then replaced by the tendon of the muscle. The coraco-clavicular, the rhomboid, and gleno-humeral ligaments are probably derived from modifications of the subclavius muscle.

I append below a list of some anomalous muscles which have been observed once, twice, and even three times in cadavers during the last two years, and the presence of which, while unimportant in themselves, may act as a link in a chain of reasoning by investigators coming after, as they are not mentioned by most of the standard text-books on anatomy.

1. The abductor ossis metatarsi quinti arising from the outer tubercle of the calcaneum, inserted into the tuberosity at the base of the fifth metatarsal bone. According to Sutton this muscle is present in two out of every three subjects, and when not represented by muscular fibres its place is occupied by a band of fibrous tissue.

2. The extensor primi internodii hallucis longus, is usually an offset from the extensor proprius, but in one instance, arising separately from the fibula, it is inserted in the inner part of the base of the first phalanx of the great toe.

3. A fourth gluteal muscle, the gluteus quartus, which had its origin from the anterior part of the inferior gluteal ridge of the ilium and is inserted into the top of the great trochanter of the femur in front of the insertion of the gluteus minimus.

4. The peroneo-calcaneus internus arises from lower part of the posterior surface of the fibula and is inserted into the forepart of the inner surface of the calcaneum.

5. The rectus sternalis, arising from the sheath of the rectus abdominis, is inserted into the fascia covering the origin of the sterno-mastoid. According to Sutton this may be present on both sides.

It has been repeatedly denied that mutilations can have any influence in not only the production of anomalies, but also in that of congenital malformations, and in this connection I will quote the experimental evidence of the hereditary transmission of mutilations adduced by Dr. Charles E. Lockwood (and already quoted by Osborn). "Mice being used in this experiment, I selected a pair of white mice on account of their rapid breeding. I bred them in and in for ninety-six generations, as they breed every thirty days, and when they are thirty days old they are able to reproduce themselves. I destroyed all sickly and defective ones by breeding only the fittest. I bred all disease out of them, and had a pure-blooded animal, larger and finer every way than the original pair. In breeding their tails off, I selected a pair and put them in a cage by themselves, and when they had young I took the young and clipped their tails off. When old enough to breed I selected a pair from the young and bred them together, and when they had young I clipped their tails. I continued this breeding in and in, clipping each generation, and selecting a pair of the last young each time in seven generations. Some of the young came without tails, until I got a perfect breed of tailless mice. I then took one with a tail and one without a tail and bred them together, and by changing the sexes each time—a male without a tail, a female with a tail, and next a female without a tail and a male with a tail—I was finally rewarded with all-tail mice."

As the same laws (more or less modified) are supposed to govern the reproduction of the higher and the lower vertebrata, the significance of the above experiment will at least cause us to ponder upon analogical characters in the transmission of abnormalities, and in this connection comes the thought as to what are the relations existing between diseased structures and the suitable soil for the production or hereditary transmission of the same. It can hardly be contradicted that in certain diseases there is a reproduction of a suitable constitution in which by accident, direct infection, or otherwise the disease is reproduced in the offspring. The most common of these diseases is tuberculosis, and will not our knowledge of the processes involved in the production of this peculiar transmission of an anomalous type of health give us a more powerful weapon in fighting this disease than all the constituents of the various lists of advocates of serum therapy, etc.? As has been said by many observers, the best treatment of this, perhaps our most important disease, is that which begins at birth. In families in which tuberculosis is known to exist, we have almost invariably an anomalous conformation of the thorax, perhaps not as regards individual bones, but as a whole; and as has been previously stated this can be remedied, if treated at birth and afterward by massage, diet containing in addition to others proper bone constituents, proper hygienic surroundings, non-residence in crowded cities, etc., and as far as possible excluding family contagion by explaining to parents the contagious or infectious nature of this disease—in a word, all the prophylactic measures set down by other observers. In this connection may be noted Brown-Séquard's experiments on guinea-pigs, in which was shown not only the transmission of epilepsy but in certain individual cases a peculiarity or anomaly of constitution in which the disease, although not present at birth, could be produced by very slight causes. It would seem important to pay more attention to the anomalous physical conditions in which various micro-organisms produce ravishes of a diseased nature than to the life history of these microbes themselves, for it has been shown that without the proper soil these low forms cannot propagate or even exist. To the earnest observer the connection between mere physical conformation of not only the bony skeleton but of the muscular system, and the soil suitable for the production of various diseases, is seen to be much greater than would at first be supposed. The various abnormalities in heart structure would require much time to consider in full, but it will be remembered that in its development the organ passes through various stages, some similar to its normal development in inferior animals, so that malformations for the most part depend upon arrested development in some stage, and while most malformations are incompatible with prolongation of life, yet I believe that in some cases,

more numerous than commonly supposed, we see subjects who live normal if not prolonged periods. In going over a large number of cases there will be found individuals presenting well-developed murmurs, oftimes diagnosed as organic lesions, which would present at autopsy slight abnormalities rightly included under the heading of anomalies. Almost every clinical observer has, I think, seen some subjects well nourished and well developed physically presenting murmurs which are not anæmic, not due to habit such as tobacco, not affected by medication, yet persistent through life. Such a case suggests the possibility of a slight abnormality, either in the conformation of the heart as a whole or else insufficient valvular development. As our statistics are based generally upon so many hundred cases examined in this hospital, or so many thousand in that dissecting-room, we are apt to forget that by far the greatest number of persons dying from this or any other lesion are not examined at all.

The importance of anomalous structures to the operating surgeon is great in some regions. In the variety of enlargements of the thyroid gland in which we have an abnormal varicose condition, the varying bifurcations of the common carotid artery, the numerous variations in branches of the external carotid, to say nothing of enormously developed (as to size and number) trunks of the thyroid artery, have all to be considered in ligation of some or all of the latter. Dr. Mott mentions a case in which he operated and in which these latter branches were increased in number and as large as the end of the little finger. In hyperplastic and hypertrophic enlargements it would seem a wise procedure to curtail the amount of blood supplied to the organ. Thyroid enlargements occur very frequently in some of the lower animals and experimentation on the same is suggested.

128 West Fortieth Street.

THE ABSORPTION BY WATER OF FREE AND ALBUMINOID AMMONIA UNDER VARIOUS CONDITIONS

By N. KNIGHT, Ph.D.,

AND

W. M. BLANCHARD, A.M.,

Randolph-Macon College, Ashland, Va.

The water used in these investigations was obtained from a spring in the vicinity of Ashland, Va., known as "Rock Spring." Various analyses showed a constancy of the mineral constituents of the water. The small quantity of free and albuminoid ammonia it contains was determined from time to time and deducted from the amounts obtained in the following experiments. The ammonias were determined by a slight modification of the Wankyln-Nessler process. Two hundred cubic centimetres was usually distilled for a determination, and 50 c.c. nesslerized. This made it possible to repeat a test easily when it seemed desirable to do so. It should be understood that the ammonium nitrate and nitrite which are present in small quantities in the atmosphere are included in the albuminoid ammonia. The figures given express in every case the number of parts in a million.

Experimental Part.—Five hundred cubic centimetres of the water was placed in a porcelain evaporating-dish of two litres' capacity. The dish was thoroughly cleaned each time before using. The water was allowed to stand in a room occupied by two students as a study-room in the daytime and sleeping-room at night. The room was well ventilated by a wood fire and by open windows. After thirty-nine hours 500 c.c. more of the water was added to the dish to supply loss by evaporation. The whole was then allowed to stand twenty-one hours longer. Making the necessary corrections for the ammonia in the water, it contained: Free ammonia, 0.264; albuminoid ammonia, 0.400.

A litre of the water was placed in a room occupied by two students as a sleeping-apartment. The water remained six hours, from 11 P.M. to 5 A.M. The night was cool and the room was tightly closed. It contained: Free ammonia, 0.032; albuminoid ammonia, 0.048.

A litre of the water was placed in a fairly well-ventilated room, occupied by a student sick with the measles. After standing twenty hours the water contained: Free ammonia, 0.120; albuminoid ammonia, 0.048.

A litre of the water remained during the night in a ventilated sleeping-room of a private residence in the town. The room was occupied by two grown persons and a child. In the morning the water contained: Free ammonia, 0.120; albuminoid ammonia, 0.102.

Five hundred cubic centimetres of the water was kept for ten hours in an unventilated clothespress. It contained: Free ammonia, 0.447; albuminoid ammonia, 0.062.

Five hundred cubic centimetres of the water was placed in the chemical laboratory and allowed to remain three hours. No ammonia was used by the students during this time. It contained: Free ammonia, 0.624; albuminoid ammonia, 0.086.

Five hundred cubic centimetres of the water was left five and one-half hours in the chemical lecture-room. A class of forty occupied the room during one hour of the time. It contained: Free ammonia, 0.088; albuminoid ammonia, 0.038.

A litre of the water was allowed to remain seventeen hours in the biological laboratory of the college. It contained: Free ammonia, 0.200; albuminoid ammonia, 0.102.

Five hundred cubic centimetres of the water remained in the Latin lecture-room of the college six and one-half hours, during which there were recitations in progress about half the time. It contained: Free ammonia, 0.024; albuminoid ammonia, 0.030.

A litre of the water was placed early Sunday morning in the Ashland Methodist Church and left for twenty-four hours. Two services were held in the church, at each of which one hundred and twenty-five persons were present. The day was warm and the church was well ventilated by open windows. The water contained: Free ammonia, 0.148; albuminoid ammonia, 0.124.

On the following Sunday the foregoing experiment was repeated. The conditions were similar, except the day was cool and the windows were closed. The water contained: Free ammonia, 0.056; albuminoid ammonia, 0.142.

A litre of the water was allowed to remain twenty-four hours, beginning Sunday morning, in the Shiloh Baptist Church (colored) of Ashland. The building was poorly ventilated. Two services were held during the time, at each of which about fifty persons were present. The water contained: Free ammonia, 0.056; albuminoid ammonia, 0.166.

A litre of the water was placed in a urinal at 8:30 P.M. After nine hours it contained: Free ammonia, 0.744; albuminoid ammonia, 0.048.

Two litres of the water was placed in the large watercloset of the college at 10 A.M. After half an hour 500 c.c. was tested. It contained: Free ammonia, 0.056; albuminoid ammonia, 0.072.

After standing one hour another 500 c.c. of the water mentioned in the foregoing was withdrawn and tested. It contained: Free ammonia, 0.088; albuminoid ammonia, 0.032.

After two hours another 500 c.c. contained: Free ammonia, 0.264; albuminoid ammonia, 0.034.

After three hours another portion contained: Free ammonia, 0.356; albuminoid ammonia, 0.064.

On another occasion 500 c.c. was allowed to stand fifteen minutes in the same place. It contained: Free ammonia, 0.136; albuminoid ammonia, 0.048.

Five hundred cubic centimetres after five minutes contained: Free ammonia, 0.064; albuminoid ammonia, 0.062.

Five hundred cubic centimetres after one minute contained: Free ammonia, 0.048; albuminoid ammonia, 0.000.

To compare the amount absorbed by water standing in a shallow vessel, like an evaporating-dish, with the absorption in a narrow-necked chemical flask, the following experiments were made:

1. Five hundred cubic centimetres of the water was placed in a chemical flask, whose neck was one and one-half inches in diameter, and left for one hour in the watercloset of the college. It contained: Free ammonia, 0.064; albuminoid ammonia, 0.062.

2. After four hours under similar conditions it contained: Free ammonia, 0.080; albuminoid ammonia, 0.078.

3. Five hundred cubic centimetres of the water was placed in a well-ventilated sleeping-room, occupied by two students. After eight hours it contained: Free ammonia, 0.000; albuminoid ammonia, 0.006.

Five hundred cubic centimetres of the water in the evaporating-dish was allowed to remain ten hours in a cow stable. It contained: Free ammonia, 1.784; albuminoid ammonia, 0.235.

Five hundred cubic centimetres of the water remained six hours in a horseshed. It contained: Free ammonia, 0.593; albuminoid ammonia, 0.407.

The Absorption of Ammonia from the Air at Different Elevations.—A litre of water in the evaporating-dish was placed on the ground on the college campus. A similar portion was placed above this on a tower sixty feet high. Both remained ten hours. The former contained: Free ammonia, 0.080; albuminoid ammonia, 0.182. The latter contained: Free ammonia, 0.068; albuminoid ammonia, 0.102. This experiment was made on April 28th.

May 17th, placed 500 c.c. of the water on the college campus at 9 P.M., and the same quantity on the tower. After ten hours the former contained: Free ammonia, 0.312; albuminoid ammonia, 0.838. And the latter: Free ammonia, 0.040; albuminoid ammonia, 0.222.

The foregoing was repeated on May 18th, the temperature of the air having increased. The water on the ground contained: Free ammonia, 0.072; albuminoid ammonia, 0.142. The water on the tower contained: Free ammonia, 0.072; albuminoid ammonia, 0.086.

May 19th, the foregoing experiments were repeated. The water on the ground contained: Free ammonia, 0.176; albuminoid ammonia, 0.292. The water on the tower contained: Free ammonia, 0.048; albuminoid ammonia, 0.092.

May 20th, water placed as in the foregoing, on the ground, contained: Free ammonia, 0.064; albuminoid ammonia, 0.070. On a cloudy day 500 c.c. of the water remained five hours (from 12 M. to 5 P.M.) on the tower. It contained: Free ammonia, 0.160; albuminoid ammonia, 0.118.

May 27th, a sunny day, 500 c.c. of the water remained on the campus under the shade of the trees from 7 A.M. until 5 P.M. It contained: Free ammonia, 0.232; albuminoid ammonia, 0.686. The same quantity on the tower in the sunlight contained: Free ammonia, 0.008; albuminoid ammonia, 0.038.

Ammonia in Rain Water.—Previously to May 12th there had been almost no rainfall for several weeks. On the night of the 12th there were frequent showers. At five o'clock, on the morning of the 13th, the evaporating-dishes were placed in the open air. There was a gentle rainfall during the day. Five hundred cubic centimetres of water had collected at 1 P.M. It contained: Free ammonia, 0.128; albuminoid ammonia, 0.230.

At 3:15 P.M. another 500 c.c. had collected. It contained: Free ammonia, 0.088; albuminoid ammonia, 0.252.

Later, after clear weather for several days, there were heavy rains. Five hundred cubic centimetres of the water caught at the beginning of the shower contained: Free ammonia, 0.160; albuminoid ammonia, 0.168.

After it had rained for some time, 500 c.c. showed: Free ammonia, 0.144; albuminoid ammonia, 0.078.

Conclusions.—These conclusions, arrived at also by other experimenters, seem justified from the foregoing work. The ammonias may be regarded as a type of the impurities in the air.

1. The purity of the air increases with the elevation.

2. The sunlight is a purifier of the air.

3. The amount of absorption depends upon the surface exposed.

4. The great absorbing-power of water and its purifying effect upon the air of a room.

5. The beneficial effects of lakes, rivers, and other large bodies of water in purifying the air of the surrounding country.

It is purposed to investigate the absorbing-power of milk and other liquids, for comparison with water.

Progress of Medical Science.

Malarial Disease Prevented by Small Doses of Quinine.—Laveran reviews the reports of many medical officers in charge of the health of bodies of European and American men exposed to severe malarial influences (*The New York Medical Journal*). His conclusion is that quinine usually proves very potent in preventing or at least mitigating malarial disease, even in very unhealthful localities. Against its use the objection has been made that daily administration of this drug induces attacks of indigestion, and that quinine becomes less potent in a given case if administered constantly, the system becoming habituated to it. Yet these objections are not sound. A dose of from one-fifth to three-tenths of a gram a day can be employed for months with impunity. Quinine destroys the causative microbes by its power as a parasiticide. The microbes of paludism that chance to get into the blood of a person who has been treated preliminarily by the small preventive doses find it a medium wholly or quite unfavorable to their development. At the most, they develop only with difficulty. The daily dose should not exceed three-fifths of a gram nor be less than a seventh of a gram. Some prefer a dose of one gram thrice weekly. To procure a rapid absorption, the hydrochloride is preferable to the sulphate, and is better supported. The best time to take quinine is at mealtimes. The best way is to dissolve it in wine, although cachets or pills suffice. If added to coffee, that precipitates a portion of the quinine.

Cancer.—If we suspect cancer in a woman I fear we often go too far in concealment of the danger from the patient.—WALKER.

MEDICAL RECORD:

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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OVERCROWDING OF THE MEDICAL PROFESSION.

SOME few months ago the *Daily Telegraph* in London took up the matter of dispensary abuse, and the subject was thoroughly ventilated in the pages of that journal. Now the *Standard* is following in the footsteps of its rival, and has opened its columns to a discussion on the overcrowding of the medical profession. Many harrowing tales are being told of the straits to which struggling practitioners are reduced in their efforts to gain a living. One medical man writes to say that the average income of a doctor in Great Britain at the present day does not reach the sum of $1,200 yearly; another one dwells upon the much-vexed point of the way in which hospitals are made use of by persons for whom they were never meant, and many instances are quoted to bear out this contention. This correspondence comes, as was doubtless intended it should, at a most appropriate season. The medical schools are on the point of reopening. It is certainly for the ultimate benefit of those about to enter the profession of medicine that they should be made to understand the difficulties that they will have to encounter and the hard road they must expect to travel, before any sort of a goal is reached. It would appear, too, that the position of the medical man here is more or less identical with that of his English brother, for while in America the fees are higher, on the other hand the profession is perhaps even more crowded here than in England. *The Lancet*, referring to the outlook so far as medical students are concerned, says that the facts of the case should be present in the mind of every young man who contemplates entering the medical profession. To men who realize the dignity of medical service and of the medical calling, our contemporary says, there is still room in our profession; but those who look for their reward in large incomes will do well to pause. That the present unsatisfactory position of the medical profession, both as regards the overcrowding and the abuses in connection with it, should be openly discussed and kept before the public in every possible way, is to the best interests of its members. The more fully a grievance is aired, the more quickly is it likely to be remedied.

ASEPTIC BARBERING.

THE sanitary authorities of Paris have instituted a very important regulation respecting aseptic barbering, which deserves to be imitated in every town and city in which the knights of the scissors and the wielders of the razor are to be found. The only strange thing is that the regulations regarding cleanliness in hands and instruments have not been enforced long ago. There is hardly a person who has not been reminded of the necessity of the measure. Even the ordinary patron appreciates the glaring fact that at every *séance* he is liable to some form of skin disease of the scalp or face, communicated more or less directly by a previous customer through the proverbial carelessness of the fussy and oftentimes positively dirty manipulator. In Paris barbers are now required to use aseptic tools, sterilized towels, metallic combs, and, above all, their hands are to be kept scrupulously clean by being washed for every sitter. Nothing could be simpler, nothing more popular, and certainly nothing safer. Why could not our own health board, always so alert in serving the community, demonstrate its usefulness in this direction? It would be certain to have the entire public, excepting possibly that part composed of dirty and lazy barbers, on the side of such a very necessary reform.

THE PUNISHMENT OF UNLICENSED PRACTITIONERS.

THERE seems to be some doubt in the minds of certain members of the Medical Society of the County of New York regarding the rights of a so-called bone-setter to practise his alleged profession in New York. This delectable individual, who modestly confesses the possession of a peculiar sensitiveness of touch and a remarkable manipulative power, has been giving such public exhibitions in smoothing bones in place and in working out the stiffness of creaky joints that he has now a flourishing clinic of his own and may seriously affect the business of many of the free dispensaries. Although at best his method of work is a rude and unscientific form of massage, his claim for reducing dislocations thereby would, it seems to us, clearly place him within the present law against practising without a license. Reducing dislocations is certainly a recognized surgical procedure, and even an attempt in that direction would make the pretender clearly indictable. Comparatively speaking, however, it would appear to be hardly to the purpose to make a martyr of this blatant quack, so long as the society in question quietly winks at the many abortionists and others of that ilk who openly bid for business in all the daily papers. At least it does not seem to have the power to touch the worst of all quacks.

The Contagious Period of Whooping-Cough.—According to the *British Medical Journal*, Dr. Weill, a French physician, has made a series of experiments which indicate that whooping-cough is contagious only before the patient begins to whoop.

THE CONTAGIOUS-DISEASES ACT IN INDIA.

It has been decided to bring again into force in India the "contagious-diseases act for women." This decision has been arrived at in consequence of the frightful increase of venereal diseases among the English army in that country. That the situation is one of extreme gravity statistics easily prove. In 1895 the admissions into hospitals for venereal diseases were 36,681, and of these, 22,702 were cases of syphilis. The ratio for primary syphilis had increased one hundred and thirty-seven per cent. since 1887, and secondary syphilis was in 1895 four times more prevalent than in 1873. The government does not propose compulsory examination, but it feels that some decided steps must be taken to prevent the army from being decimated by syphilis, and also that innocent women and children must be protected against the risk of infection by this disease. This resolution on the part of the authorities has raised a storm of indignation and protest among a small but noisy section of the British public. Nevertheless, in the ranks of those averse to the measure occur some notable names, and women especially are up in arms against it. The medical men of Great Britain as a body concur in the advisability of prompt and effective action being taken to endeavor to check the ravages of this insidious affection, though even with them there are exceptions.

Dr. Charles Taylor, in an address on the subject, published in the *Medical Times and Hospital Gazette*, tries his hardest to prove that alteration in the present law is quite unnecessary, and he goes to absurd lengths in his attempts to show that all venereal diseases are comparatively innocuous. After dismissing gonorrhœa as a complaint so trifling as not to be worthy of discussion, he proceeds to whitewash syphilis. The great majority of patients who contract true or constitutional syphilis, he says, are readily and permanently cured, and then do not transmit disease to their offspring. He then goes on to say: "Let me lay a little evidence before you in proof of this last assertion, *i.e.*, that true syphilis is not such a formidable disease as we have been led to suppose, and that in the great majority of cases it is so easily controlled that we need not fear any of its manifestations. Of course, we all know that syphilis has been on the wane all over the world for centuries; that it has declined both in strength and virulence in every country under the sun; that the sibbens of Scotland, the radesyge of Norway, and the yaws of Africa are, practically speaking, things of the past; that the diseased bones, the sloughing phagedena, and serpiginous ulceration are no more to be seen; and that a man may practise —in ordinary general practice—for a lifetime without meeting with a single case of malignant or tertiary syphilis." Dr. Taylor then quotes several authorities in support of these contentions, among them Jonathan Hutchinson.

Notwithstanding this eloquent defence of syphilis, it will be difficult to convince a very large number of those qualified to pass an opinion that it is so harmless a disease as Dr. Taylor tries to demonstrate it to be. It is probably true that at one time the gravity of syphilis was exaggerated, and no doubt with modern rational treatment it is not the dread scourge it was in bygone days; but the contention that it is a more or less harmless complaint, if advanced by any man of ability or authority, would be pernicious in its consequences. The line of opposition that Dr. Taylor takes against the bill is not only that it is unnecessary, but that it tends to curtail the liberty of the subject, as well as to the creation of what he terms a far worse and more fatal disease, "syphiliphobia." Doubtless many objections can be urged against this "contagious act," but a very strong point in its favor is that it was effective when in force formerly, and until better methods have been devised the government of India will be found to have taken the wisest course in again adopting the system that worked well in the past. Of course, this is a very different thing from the licensing and compulsory examination of prostitutes in cities, which many sociologists and physicians regard as useless.

News of the Week.

The Alvarenga Prize of the College of Physicians of Philadelphia for 1897 has been awarded to Dr. Joseph Collins, of this city, for an essay entitled "Aphasia: A Contribution and Critical Study."

American Electro-Therapeutic Association.—The seventh annual meeting of the American Electro-therapeutic Association was held at Harrisburg, Pa., on September 21st, 22d, and 23d. Dr. William T. Bishop, of that city, presided. An address of welcome was delivered by Mayor Patterson, to which reply was made by Dr. Robert Newman, of New York City. Among the papers read on the first day were the following: "Sources of Atmospheric Electricity," Dr. R. J. Nunn, of Savannah, Ga.; "Some Thoughts and Suggestions on *x*-Ray Work," Dr. Eugene R. Corson, of Savannah, Ga.; "A New Electrode for Use with the Static Machine," Dr. Lucy Hall-Brown, of Brooklyn, N. Y.; "Some Considerations Relative to the Therapeutic Application of the Current," by invitation, Dr. George E. Bill, of Harrisburg. On the second day Dr. Eli H. Coover, of Harrisburg, read a paper on heart failure in cardiac diseases due to defective circulation; and Dr. Margaret A. Cleaves, of New York City, one on expenditures of electrical energy. On the third day the following papers were read: "What Has Electricity Accomplished in the Treatment of Mental Diseases?" Dr. Robert S. Newton, of New York City; "Mental Electricity," Dr. W. S. Watson, of Fishkill-on-Hudson, N. Y.; "Electricity in Orthopædic Practice," Dr. L. A. Weigel, of Rochester, N. Y.; "A New Electrode, Preventing the Diffusion of the Current;" "Palliative Electric Treatment of the Tic Douloureux of the Face;" "The Action of the Roentgen Rays on the Vitality and Virulence of Koch's Bacilli in Cultures," Dr. J. Bergonie, of Bordeaux, France. The following officers were elected for the ensuing year: *President*, Dr. Charles

R. Dickson, of Toronto, Ont.; *Vice-Presidents*, Dr. F. S. Shavoir, of Stamford, Conn.; Dr. Caleb Brown, of Sac City, Iowa; *Secretary*, Dr. Henry Gerin, of Auburn, N. Y.; *Treasurer*, Dr. Robert J. Nunn, of Savannah Ga.; *Executive Council*, Dr. Robert Newman, of New York; Dr. G. Betton Massey, of Philadelphia; Dr. W. T. Bishop, of Harrisburg; Dr. W. J. Morton, of New York City; Dr. W. J. Herdman, of Ann Arbor, Mich. The next meeting is to be held at Buffalo, N. Y.

Hog Cholera in Delaware.—Hog cholera is epidemic in the northern part of Kent County, Del., scarcely a single animal escaping infection.

Generous Bequests.—By the will of the late Mrs. Eliza W. S. P. Field, who died recently in England, $10,000 is bequeathed to the Philadelphia Home for Incurables, for the endowment of two free beds; $500 to the Germantown Hospital and Dispensary; $1,000 to the Children's Hospital of Philadelphia; and to the University of Pennsylvania $10,000 in trust for the establishment of two scholarships, the income to be used to defray the expenses of such ambitious and diligent students from the Central High School as the trustees of the university may deem worthy; $5,000 for the endowment of a free bed in its hospital; $5,000 for the endowment of a free bed in its Maternity Hospital; $20,000 in trust for the general uses and purposes of its hospital; $20,000 in trust, the income to be devoted to the Maternity Hospital, and the further sum of $20,000 for the general uses of the university. The testatrix bequeathed her residuary estate also to the university.

Proper Dispensary Fees.—At last New York has had filled a "long felt need," as the nostrum advertisement usually puts it. We have contended that the dispensary should provide every attraction for the patient and make an effort to draw in clients from every walk in life. During the past week notices have been sent out of a new dispensary which should prove an attraction to a large class of dispensary goers. The fee for treatment is placed at $25. This will naturally keep away undesirable individuals and secure to patrons a certain exclusiveness, often too much neglected in the institutions already established. Since there must always be a "very best" for the ultra-exclusive set, we may look for some rival institution in which the entrance fee has been advanced to $50. The one which has taken the initiative in establishing a proper fee is for the exclusive treatment of inebriates.

An Unfavorable View of the Montreal Meeting.—The sixty-fourth convocation of this, the greatest of all Anglo-Saxon medical gatherings, has passed into history. The city of Montreal as a corporation, and the medical profession of the city, "did themselves proud" in matters of hospitality. The attendance was large, over eight hundred registering; and a large number of medical men gathered besides, ostensibly to attend the meeting but never registered, their aims being of a social rather than a scientific character. The greatest drawback was the lack of proper hotel accommodations; indeed, for a city of the pretensions of Montreal such were woefully deficient. The general addresses, that of the president excepted, were decidedly mediocre, being "chestnutty" in flavor, and in one instance so self-laudatory and egoistic as to provoke most unenviable comment. The papers presented to the sections, with few exceptions, were of like character; remarkably, not a single new idea was evolved or even suggested. Their tone was such they might pass for papers read at any of half a dozen meetings of like character, convened during the past five years. Even the discussions were flat, stale, and unprofitable, hence the attendance daily became more meagre—so meagre in fact that it was a common cause of comment. Nevertheless the British Medical Association was a success—a great success—as a social body. Scientifically it was mediocre, repetitious, heavy, and wearisome; dull as ditch water, relieved only by the manifest attempts of the little chaps to be thought big and the larger ones to grow greater in the estimation of their fellow-men.—*The Medical Age.*

A Physician Crazed by Sympathy.—Dr. T. M. Angstadt, a graduate of Jefferson Medical College practising in Nova Scotia, found himself baffled by a perplexing case for which he was able to do nothing. The patient suffered greatly, and no medicines or even surgical treatment availed anything. The thought of the patient's sufferings and of his own powerlessness so weighed upon the physician's mind, that he killed himself, after making a will in which he devised all his property, amounting to about $2,000, to the patient.

An Old People's Convention.—The old folks of Manchester, Vt., hold occasional meetings for the purpose of comparing notes and exchanging reminiscences. The latest was held there on September 24th. Of one hundred and fifty invitations extended to persons over seventy years of age, over one hundred responded, half of them being between seventy and eighty. Two were over ninety, the oldest person present being ninety-three years old, and the second oldest ninety-one years of age. Of the one hundred and ten persons who attended the first reunion in 1890, more than half are dead. At the reunion two years ago more than one hundred registered, twenty-two of whom are dead. The next reunion will be held in two years.

Dr. Eugenio Sanchez Agramonte, a surgeon in the army of the Cuban republic, is at present in New York, and was recently entertained at dinner by the Oscar Primelles Club, a society established to aid the sick and wounded in the patriot army.

A Typhoid Epidemic at Maidstone.—It is reported that an alarming outbreak of typhoid fever has occurred at Maidstone, in England, over six hundred people being ill with the disease at the present time. The epidemic is attributed to pollution of the water supply by drainage from an encampment of hop pickers, among whom several had been sick with typhoid.

The Plague is steadily increasing again in the Bombay presidency, the strange neglect of the sani-

tary authorities having permitted the disease to creep unobserved from hamlet to hamlet until a wide area has become affected. The newspapers assert that the withdrawal of the medical officers for service with the troops on the frontier will entail consequences in the way of a recrudescence of the plague infinitely more disastrous than anything happening on the frontier.

A Charge of Inhumanity against New York Hospitals.—In the management of ambulance cases the ambulance first arriving at the spot where an individual requires immediate medical or surgical aid is supposed to take the patient to the nearest hospital; but a recent case, in which a man had his skull fractured in the vicinity of Roosevelt Hospital and was taken by an ambulance of that hospital a long distance to Bellevue, where he died in a few hours, has called renewed attention to the practice of the large private hospitals maintaining an ambulance service, all of which receive more or less assistance from the public funds, of sending dying patients, sometimes taken directly from their own wards, to the public hospitals. Naturally, such transfers are not, as a rule, beneficial to the patient; but it is highly desirable that the death rate in such hospitals, which depend to a greater or less extent on private contributions for their support, should be kept as low as possible, in order that in their annual reports a favorable showing may be made to their patrons.—*Boston Medical and Surgical Journal.*

Dr. Charles E. Nammack has been appointed visiting physician to the non-collegiate division of Bellevue Hospital.

Salt in the British Navy.—The British naval authorities have just added salt to the rations of the sailors, that necessary condiment having hitherto been denied them except as they paid for it themselves.

American Academy of Railway Surgeons.—The fourth annual meeting of this society will be held in Chicago, October 6, 7, and 8, 1897. The president of the academy is Dr. L. E. Lemen, of Denver; the secretary, Dr. D. C. Bryant, of Omaha.

The Turkish Troops in Thessaly are suffering greatly from sickness. Ten thousand soldiers have been sent home or are awaiting the means of transport to Constantinople on account of invalidism. Typhoid fever is the disease causing the greatest morbidity and mortality.

The Fourth French Congress of Internal Medicine will be held at Montpellier on April 12, 1898, and following days. The questions proposed for discussion are: (1) "Clinical Forms of Pulmonary Tuberculosis," to be discussed by MM. Bard, of Lyons, Vergely, of Bordeaux, and Revilliod, of Geneva; (2) "Microbic Association and Mixed Infections," to be discussed by MM. Spillmann, of Nancy, Widal, of Paris, and Malvoy of Liége; (3) "The Therapeutic Utilization of Organs with an Internal Secretion," to be discussed by MM. Lemoine, of Lille, Mosse, of Toulouse, and Cerenville, of Lausanne.

Bellevue Hospital Medical College.—The Bellevue Hospital Medical College was thrown open, September 28th, for the first time since the fire which almost destroyed it. The building has been almost entirely reconstructed, being provided with a new dissecting-room, an almost new lecture-room, a museum, and a new office for the clerk. The most important changes in the faculty are: Dr. Edward G. Janeway succeeding the late Professor Lusk as president, Dr. Henry C. Coe succeeding Professor Lusk as clinical professor of gynæcology, Dr. Henry H. Rusby succeeding Prof. Herman M. Biggs as professor of materia medica and pharmacology, and Prof. John A. Mandel succeeding Prof. Ogden B. Doremus as professor of chemistry.

Death of Dr. W. H. Booth.—Dr. W. H. Booth, a prominent physician of Utica, N. Y., died at the Murray Hill Hotel, September 25th, after a brief illness. Dr. Booth had been a sufferer from a chronic disease for years. He was on a pleasure trip with Mrs. Booth when fatally stricken. He was forty-five years old.

Tri-State Medical Society.—The ninth annual meeting of the Tri-State Medical Society of Alabama, Georgia, and Tennessee will be held in Nashville, Tenn., Tuesday, Wednesday, and Thursday, October 12, 13, and 14, 1897.

Mississippi Valley Medical Association.—The twenty-third annual meeting of the Mississippi Valley Medical Association will be held in Louisville, Ky., October 5, 6, 7, and 8, 1897.

The Miami Valley Medical Society (Ohio) will hold its fortieth semi-annual meeting in Loveland, Ohio, Tuesday, October 12, 1897.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending September 25, 1897. September 18th.—Assistant Surgeon C. E. Riggs detached from the New York navy yard October 4th, and ordered to the *Newport* October 4th. Passed Assistant Surgeon J. F. Leys detached from the *Helena* September 20th, and ordered to the *Vesuvius*. Surgeon N. H. Drake, ordered to the *Minneapolis*, *Columbia*, and other vessels in reserve at League Island, Pa. Passed Assistant Surgeon M. F. Gates detached from the *Minneapolis*, on relief, and ordered to the Boston Hospital. Surgeon G. P. Lumsden detached from Port Royal, on relief, and ordered to special duty attending officers at Norfolk, Va. Passed Assistant Surgeon G. A. Lung detached from the Boston Hospital, on relief, and ordered to naval station, Port Royal, S. C. Passed Assistant Surgeon M. S. Guest detached from the *Vesuvius*, and ordered to the *Helena* September 20th. September 23d.—Surgeon F. Rodgers, when detached from Boston navy yard, ordered home and to be ready for sea. Surgeon H. E. Ames, ordered to the navy yard, Norfolk, Va., October 2d. September 24th.—Assistant Surgeon M. S. Elliott detached from the *Indiana* and ordered to the *Porter*.

Reviews and Notices.

BRAITHWAITE'S RETROSPECT OF MEDICINE. Vol. CXV. January to June, 1897. London: Simpkin, Marshall, Hamilton, Kent & Co.

THIS publication keeps up its usual high standard, and as a handy reference book cannot be too highly recommended.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK. For the year 1897.

THE ninety-first annual meeting of this society was held at Albany in January last, under the presidency of Dr. James D. Spencer, of Watertown, and is reported in the volume under notice. A feature of this volume is the report of discussions in which different speakers handle special subjects.

PROBLEMS OF NATURE. Researches and Discoveries of GUSTAV JAEGER, M.D., Selected from his Published Writings. New York: Brentano. 1897.

DR. JAEGER has made for himself a world-wide reputation as the introducer of a special form of underclothing, but as a man of science he is little known—at any rate to English-speaking people. It appears, however, that he is an investigator in the field of organic science as well as a deep student of philology. His work is well worth a perusal.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Twelfth Session, held at Washington, D. C. Vol. XII. 1897.

THIS the twelfth volume of these transactions is fully as interesting as the preceding volumes. The account of a case of acromegaly with numerous excellent illustrations is especially worthy of note.

LIPPINCOTT'S MEDICAL DICTIONARY. A Complete Vocabulary of the Terms Used in Medicine and the Allied Sciences, with their Pronunciation, Etymology, and Signification, including much Collateral Information of a Descriptive and Encyclopædic Character. Prepared on the Basis of Thomas' Complete Medical Dictionary. By RYLAND W. GREENE, B.A., with the Editorial Collaboration of JOHN ASHHURST, JR., M.D., Barton Professor of Surgery and Professor of Clinical Surgery in the University of Pennsylvania; GEORGE A. PIERSOL, M.D., Professor of Anatomy in the University of Pennsylvania; JOSEPH P. REMINGTON, Ph.M., F.C.S., Professor of Theory and Practice of Pharmacy in the Philadelphia College of Pharmacy. Complete in one imperial octavo volume of about 1,100 pages. Philadelphia: J. B. Lippincott Company. 1897.

THIS dictionary, although stated by the editor to be based on Thomas' dictionary, is practically a new work, as a brief comparison of the two shows. A careful comparison of the book with several of the most popular medical dictionaries and also a practical test of it in daily use during a period of several weeks, have convinced us of its completeness, the discriminating nicety of its definitions, and its general excellence as an authoritative guide. The system of diacritical marks for indicating pronunciation is altogether too complicated for a work of this kind, and would be very apt to puzzle or even mislead one whose previous education has been such as to make him dependent upon a dictionary for his pronunciation. This is, however, a matter of minor importance, and detracts in no way from the value of the work as an authority for the definition of medical terms.

TWENTIETH CENTURY PRACTICE. An International Encyclopedia of Modern Medical Science by Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Vol. IX., Diseases of the Digestive Organs. New York: William Wood and Company. 1897.

THE list of contributors gives a fair idea of the worth of this volume. It includes the names of Ewald, Franks, Gibney, Gioffredi, Kümmel, Mikulicz, Murphy, Semmola, Stengel, and Walker.

The list of subjects embraces "Local Diseases of the Mouth," "Diseases of the Intestines," "Hernia," "Diseases of the Spleen," "Diseases of the Liver," "Diseases of the Gall Bladder," and "Movable Kidney."

Mikulicz and Kümmel are already known as authorities upon mouth diseases, and they have conjointly produced a very readable monograph whose interest is increased by the illustrations. Carl Ewald's chapter on intestinal diseases does not include those associated with the various infectious processes, nor those due to parasites, these as well as hernia having received consideration in another portion of the work. Ewald's words carry weight in this special branch, and the chapter is written in the author's characteristically impressive style.

Mariano Semmola and Carlo Gioffredi have combined their efforts in the production of the chapter on diseases of the liver, which covers three hundred and thirty pages, and includes all the biliary and hepatic affections not elsewhere discussed. Dr. John B. Murphy, of Chicago, follows with an excellent chapter on the gall bladder, which is in a manner supplementary.

Echinococcus of the liver was included, if we mistake not, in a chapter on hydatid disease in a preceding volume, but as the present one is short no great harm will be done, we being able to compare the views of two different authors whose observations have been made in different geographical quarters. The concluding chapter of this very interesting volume is on "Movable Kidney," by the pen of Kendal Franks, of Johannesburg, S. A. Republic, formerly of Dublin, and well known for his excellent work in this obscure subject. The manner in which the author has condensed the present stock of available information concerning movable kidney amply justifies his selection by the editor.

SWEDISH MOVEMENTS OR MEDICAL GYMNASTICS. Translated from the text of T. J. HARTELIN, by A. B. OLSEN, M.D.

This is simply a monotonous enumeration of the several movements to be performed to obtain certain beneficial results. The book will be a great aid to the professional masseur or the mechano-therapeutist, but the general practitioner will find little in it to engage his attention. It is an almost literal translation, in consequence of which the translator's English suffers severely. Part second, on "Diseases and their Treatment by Medical Gymnastics," contains much that is good, inasmuch as it demonstrates that a great number of affections will be more benefited by judiciously applied exercise than by the administration of drugs.

TWENTIETH CENTURY PRACTICE. An International Encyclopedia of Modern Medical Science by Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Vol. XI., Diseases of the Nervous System. New York: William Wood and Company. 1897.

IN putting out vol. xi., the editor of this century-anticipating work must have much the feeling of the mountain climber when he has passed the half-way house. Not so with the writers, for the names are new to the work and to judge by their productions they have entered with fresh vigor upon the task.

Bruns, of Hanover, and Windscheid, of Leipsic, have given an extensive and satisfactory account of diseases of the spinal cord. Möbius, of Leipsic, treats of tabes dorsalis in about eighty well-written pages. Strümpell, of Erlangen, has a chapter entitled "The Combined System Diseases of the Spinal Cord." By "system diseases" the author means affections in which only nerve cells and nerve fibres, that is, neurons which have a definite physiological function, are attacked. This chapter is very short but includes "Friedreich's Disease" and "Hereditary Spastic Spinal Paralysis."

"Pain" is elucidated by Dr. Witmer, of Philadelphia, and Dr. Lloyd, of the same city, has accomplished the difficult task of describing in an acceptable manner the diseases of the cerebro-spinal and sympathetic nerves. This chapter takes up about one-half of the volume's space. Two hundred and forty bibliographical references are given.

Trophoneuroses, excluding scleroderma, acromegaly, and adiposis dolorosa, are described by Dr. Mills, of Philadelphia, while Dr. Dercum, of the same city, takes up these latter subjects.

This is the second volume upon the nerves, but being freely illustrated is rather more attractive on this account

than the first. It may be safely predicted that if the succeeding volumes of the second half of this series come up to the standard set by Vol. XI. the work as a whole will prove a successful undertaking to the publisher, and will surely be a credit to the editor.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Vol. IX. Published by the Association.

THIS is the report of the ninth session of the association, held at Nashville, Tenn., November 10, 11, and 12, 1896, under the presidency of Dr. George Ben Johnston. This is one of the most interesting volumes published by this association, containing over four hundred and seventy pages, well printed and well edited.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY. Vol. VIII. Reprinted from the *Archives of Pediatrics*. 1896.

THIS is a report of the eighth session of the association, held in Montreal, Canada, May 25, 26, and 27, 1896, under the presidency of Dr. Samuel S. Adams. This volume contains thirty-five papers on subjects that are of interest to the general practitioner.

SIXTEENTH REPORT OF THE STATE BOARD OF HEALTH OF WISCONSIN. 1895–96. Madison Democrat Printing Company, State Printer. 1897.

THIS little volume is made up largely of extracts from health officers' correspondence.

A COURSE OF PRACTICAL HISTOLOGY. By EDWARD ALBERT SCHÄFER, LL.D., F.R.S., Jodrell Professor of Physiology in University College, London. Philadelphia: Lea Bros. & Co. 1897.

IN the preface Dr. Schäfer explains the plan of this work. He says that "it is designed to afford those engaged in practical histology plain and intelligible directions for the suitable preparation of the animal tissues, so that they may be able to carry on their histological studies without the constant presence of a teacher." This design is carried out in the most satisfactory manner; the descriptions throughout the book are plain, clear, and concise, and a student by reading and digesting the contents should gain a good insight of practical histology.

URINALYSIS: A GUIDE FOR THE BUSY PRACTITIONER. By HEINRICH STEIN, Ph.D., M.D. New York: E. R. Pelton. 1897.

THIS little book, as its full title denotes, is intended for the use of the general practitioner, and, judging from a perusal of its pages, should excellently fulfil the object for which it is intended. The reading-matter is thoroughly to the point, and equal to the requirements of an ordinary practice. Each printed page of this book alternates with a blank one, very useful for notes, a device that in the case of text-books might be more generally adopted.

A PRACTICAL MANUAL OF DISEASES OF WOMEN AND UTERINE THERAPEUTICS FOR STUDENTS AND PRACTITIONERS. By H. MACNAUGHTON JONES, M.D., M.Ch., M.A. (Hon. Caus.), F.R.C.S. Ireland and Edinburgh. 7th Edition. New York: William Wood and Company. 1897.

THAT this work has since 1884 gone through several editions is a sufficient guarantee of its worth and popularity. There is probably at the present time no subject on which it is more difficult to write a really up-to-date text-book than that of diseases of women. Opinions of gynæcological authorities differ so widely and every year sees so great advances in abdominal surgery, that views which might be taken as almost conclusive but a short time ago are to-day regarded as obsolete. Dr. Jones has surmounted in the most able manner all the difficulties with which he has had to grapple, and in the present edition of his work produced a book which is a complete survey of the position of gynæcology of the day, including in its pages all the recent progress made in this branch of medicine and surgery. Possibly the most interesting reading is that on the pathology of the cysts of the ovary. In connection with this subject the author quotes Mr. Bland Sutton, to whom he acknowledges his indebtedness. One feature which deserves mention is the number of really excellent illustrations and plates; in fact, the book is in every respect a credit to the publishers.

Society Reports.

TWELFTH INTERNATIONAL MEDICAL CONGRESS.

Held in Moscow, August 19, 20, 21, 22, 23, 24, 25 and 26, 1897.

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SECTION IN MEDICINE.

[illegible]

Fourth Day—Tuesday, August 24th.

The Causes of Essential Chlorosis. — DR. GILBERT, of Paris, read the paper. Seven years ago, the speaker said, he proposed the theory of arterial hypoplasia; to-day he returned to its defence. The genital theory was proposed by Hippocrates, who attributed the disease to the retention of blood in the uterus. The idea that chlorosis may be an expression of an intoxication caused by suppression of the menstruation has also been formulated. Montard-Martin has adopted this theory; more recently it was defended by Charrin, and still later by Spillmann and Etienne. These last observers do not attribute chlorosis solely to amenorrhœa, but say the cause is a pathological condition of the ovaries which prevents ovulation and prevents too the secretion of the glands; in this latter we see an analogy to the important rôle of the testicle in general nutrition. But this does not explain the cases of chlorosis in boys nor the absence of chlorosis in women who have undergone castration. Sydenham and Morton were the first promulgators of the nervous theory, but Trousseau was its chief defender. The latter contended that the nervous impression produced was never lost even though the blood condition entirely disappeared, in fact even when later there was plethora.

The defenders of the digestive theory differ greatly among themselves. Stockman says the condition is due to the lack of iron in the food, Luton ascribes it to ulcer of the stomach, Meinert to gastroptosis caused most frequently by the corset, Forchheimer to changes in the small intestine causing a reduction in the formation of hæmoglobin, Duclos and Andrew Clark to constipation causing an autotoxæmia, Bean and Mongour to dyspepsia in its general sense. The liver has been accused by Fox, who attributes chlorosis to atrophy of this organ; while Clement says it is hypertrophy of the spleen.

Vascular Theory.—The author divides the cases of chlorosis into three classes: (1) Chlorosis with vascular hypoplasia without change in the sexual apparatus; (2) Chlorosis with vascular hypoplasia and excessive development of the genital apparatus; (3) Chlorosis with vascular hypoplasia and defective development in the genital apparatus. Even though later researches may show that the vascular hypoplasia is not constant, the lesions of the vessels and the heart will occupy nevertheless a prominent place in the pathological anatomy of chlorosis. The whole arterial system is affected, but this pathological condition is particularly appreciable in the aorta which is modified in its calibre, its structure, and in the manner of emergence of its collaterals (aorta chlorotica). The artery is narrow, infantile; its lumen scarcely admits the little finger and the abdominal portion has only the dimensions of a normal crural artery. Its walls are

thin, with an exaggerated elasticity; its internal surface is reticulated and shows fatty degeneration. The intercostals, instead of being parallel, come off irregularly. The condition of the heart is variable. In a certain number of cases it is dilated and hypertrophied, in others it is small, with or without dilatation of the right ventricle, and the endocardium is thin and transparent. The dilatation and hypertrophy of the heart are a consequence of the narrowness of the aorta; the smallness of the latter is the result of a general vascular hypoplasia.

Chlorosis may, however, appear independently of the arrest of development of the vascular system; moreover, these defects may be sometimes demonstrated without a symptom of chlorosis. Especially is this latter true in young tuberculous patients, in whom genital infantilism and even narrowness of the aorta are not rare.

At the author's suggestion M. Jolly had studied chlorotics in relation to tuberculosis. Out of fifty-four cases, in twenty-five the father or mother of the patient had died of this disease; in seven the grandparents, the uncles, aunts, brothers, or sisters were affected; and in eight the patients themselves showed indisputable signs of tuberculosis.

Dr. Sansom, of London, said he agreed with Virchow that in many cases chlorosis depends upon an imperfect development of the aorta whereby this vessel is comparatively small. But he had observed that the smallness of the aorta depended often on the smallness of the pulmonary artery. He had seen a case of profound anæmia without cyanosis in an infant in whom he found extreme smallness of the pulmonary artery. In many other cases all the signs of stenosis of the pulmonary artery were present, but eventually by treatment all these signs disappeared. This shows the importance of treatment in such cases—exercises, baths, etc., directed to the increase of the capacity of the lungs, of course accompanied by medicinal treatment and the use of the salts of iron and arsenic.

Dr. Ewald, of Berlin, said that at present the theory of vascular hypoplasia appealed most to him and he believed that in the near future it would be placed on a solid basis.

Dr. Gilbert ended by saying that he was very much pleased to find his theory defended by Professor Ewald. In relation to what Professor Sansom had said, he wished to repeat that while he believed vascular hypoplasia to be usually the cause of chlorosis, it was not an absolutely constant one.

Morphology of the Blood in Leukæmia.—Dr. Dock, of Ann Arbor, reported a case of chronic leukæmia with an increase of only small mononuclear cells in the blood, in which the period of time during which the blood was examined and the opportunity for examining the tissues post mortem seemed to furnish important data for the study of leukæmia. The patient was a man fifty-two years old. When forty-eight years old he had influenza, from which he never entirely recovered, but remained pale and weak. Two years later he discovered a tumor in the left side. This grew larger slowly, causing after a time marked dyspnœa. The speaker saw the patient one and one-half years after he discovered the tumor. He was pale, dyspnœic, and had slight œdema of the ankles. The spleen and liver were much enlarged, the former reaching from the eighth rib in the axillary line to the middle of the left rectus muscle and the iliac fossa; the liver extended to the level of the navel. The lymphatic glands of the axilla and inguinal region were slightly enlarged. He complained of pain in the sternum, in some of the ribs, and in the tibiæ. The blood was pale and watery. Examination showed red blood cells 1,925,000, leucocytes 312,500, hæmoglobin, by Fleischl's method, forty per cent. Almost all of the leucocytes were of the size and appearance of small lymphocytes, rarely exceeding the diameter of the average red cells. The multinuclear cells were decreased in number. Eosinophiles were present in the proportion of one to one thousand, sometimes only one to three thousand. Leucocytes with round or oval nuclei and coarse neutrophile granulations were present in proportion of one to five per thousand. Nucleated red cells—normoblasts—were present in proportion of about one per thousand. The blood always contained large numbers of degenerated leucocytes recognizable only in stained preparations. It is possible many of these were overlooked in the counts of fresh blood. The patient died four months after the speaker had first seen him, of influenza with broncho-pneumonia. In the last illness the condition of the blood remained unaltered. Charcot's crystals were never found. The coagulability of the blood was diminished. Just before the influenza the blood examination showed red blood cells 1,542,000, white cells 580,000, hæmoglobin, by Fleischl's method, thirty per cent. The histological changes in the various organs were found to consist essentially in a marked increase or new growth of lymphoid tissue. The following were Dr. Dock's conclusions: (1) The peculiarities of leukæmic blood depend on the kind rather than the seat of the alterations; (2) The excess of cells may be derived from any tissue in which they are formed, provided means are present for entering the circulation: (3) In leukæmia the blood may be characterized either by a polymorphism of leucocytes or by a marked preponderance of one particular kind of cell, especially of cells having the general appearance of lymphocytes, but at present these cells should not be described as lymphocytes, without details of their exact peculiarities, especially their tinctorial peculiarities.

The Hæmatokrit.—Dr. Daland, of Philadelphia, demonstrated the hæmatokrit with a number of important and practical modifications. These were new capillary tubes, upon which had been placed a scale and a lens front, by the aid of which the column of red blood corpuscles could be easily and accurately read. He also gave a careful and detailed description of a new technique by which the entire study of the blood may be completed within three or four minutes.

The Blood Test of Diabetes by Means of Aniline Dyes.—Dr. Ludwig Bremer, of St. Louis, read a paper in which he described the following simplification of his method of diagnosing diabetes from the blood: Spread a drop of blood obtained from the finger tip of a diabetic of a glass slide, by means of another slide; the film must be rather thick. Spreading in a wavelike fashion is preferable. Make a number of such preparations, say ten, and an equal number of preparations of non-diabetic blood for the purpose of control. Place them in a metal oven, the tray on which they rest being at least six inches from the bottom of the heating apparatus. The thermometer must be so adjusted that the bulb rests on the tray. Turn on the flame and let the heat run up to about 135° C., which is the best temperature for the test, although a few degrees either way do not make much difference. The time to be consumed in heating, until the desired degree is reached, is from six to ten minutes. The apparatus is allowed to cool, until the preparations can be handled conveniently. Now prepare a one-per-cent. aqueous solution of Congo red, in a Naples tube or any other similar kind of glass jar. Place two specimens, one of diabetic, the other of non-diabetic blood, back to back, in the reagent. After one and a half or two minutes rinse in water, when it will be found that the non-diabetic blood has assumed the pronounced Congo-red stain, whereas the diabetic has proved refractory or is only slightly stained, not red, but orange. Methyl blue (not meth-

ylene blue) gives equally satisfactory results. Biebrich scarlet stains the diabetic, but not the non-diabetic blood film. There are many other dyes which show a differential behavior toward diabetic and non-diabetic blood. The essential of success is the obtaining of the proper temperature. The specimens may remain in the reagent longer than two minutes, say five or ten, but if retained too long the selective principle determining the reaction is drawn out, and both preparations are stained alike.

The constituent of the blood determining the positive or negative stain is the red blood corpuscles. They are in an abnormal state in diabetes, which is calculated to render some of the diabetic phenomena intelligible. Contrary to Lépine and Lyonnet, who have experimented with the older method recommended by the author, the latter holds that the reaction is not one merely of greater or lesser alkalinity. There exists a peculiar state of the hæmoglobin, in consequence of which the oxygen carriers are hampered in their functions. The test lends color to the opinion expressed by Spitzer, that the glycolytic ferment is contained in the red blood corpuscles. Lépine and Lyonnet have also claimed that leukæmia showed the same color reaction. This is true of overheated specimens. If the details of the test recommended by the speaker are strictly adhered to, leukæmic blood behaves like non-diabetic blood. Maric and Le Goff, of Paris, have verified Bremer's experiments and repeated them before the Société des Hôpitaux. Dr. Bremer claimed that even in diabetics whose urine is temporarily free from sugar his blood-test holds good and proves the existence of the disease. Even in the prediabetic stage, a disturbed taste of the metabolic equilibrium is revealed by the test. In addition to the well-known experimental phlorrhidzin diabetes, Dr. Bremer said that there exists also a phloroglucin diabetes. The former is kidney diabetes, the latter blood diabetes.

Diabetes Mellitus.—Dr. William Pavy, of London, read a paper on this subject which was one, he said, that had hitherto puzzled all investigators, but modern research has cleared up the difficulties; diabetes mellitus is no longer the intricate disease of formerly and we can look at it now in a sensible light. Diabetes mellitus consists in a malassimilation by the animal organism of the carbohydrates of the food. Ordinarily the carbohydrates, when properly neutralized, go to benefit the system, but in diabetes instead of benefiting they simply pass through as waste products. The province of the physician is to investigate the nature of the error which causes this, and then bring back to the system its natural powers. The first serious fault is in the villi of the small intestine. Under normal conditions of health, they so change the carbohydrates that little or no sugar as such gets into the portal vein, and so our first step in the treatment of diabetes is to prevent the carbohydrates from passing unchanged into the portal vein. In order that sugar may appear in the urine it must have been in the general circulation, and so if we prevent it from reaching the general circulation we shall stop its elimination by the urine. It is absolutely true that under conditions of health there is no sugar in the general circulation, for if we inject sugar into the vein of any individual, just so much as has been injected will later be found in the urine. It was formerly said that the carbohydrates as such went to the muscles to make heat, but this we can demonstrate to be false and we can say with certainty that the carbohydrates, whether under the form of glucose, maltose, or starch, getting into the general circulation cannot be used by the organism and so are eliminated as waste. Between the intestines and the liver the carbohydrates must all be converted into principles which the general circulation can distribute, and the speaker believed that most of this conversion takes place in the intestine itself. That carbohydrates are changed into fat there is no doubt, since we can find almost as much fat in the lacteals after the ingestion of carbohydrates as after that of fatty food. Consequently when we find sugar in the urine, we appreciate at once that the power in the intestine of proper assimilation has been weakened. In a perfect condition this power is such that even excesses do not disturb it, but we can easily imagine an individual whose power of assimilation is just so balanced that when he eats normally there is no trouble, but a banquet or the ingestion of an excess of carbohydrates for any reason will precipitate some of them into the general circulation and they will consequently appear in the urine. Such a man may go to Dr. A., who, finding sugar, will tell him he has diabetes, and later to Dr. B., who will contradict the first. This has happened more than once and is to be remembered. But in actual diabetes the condition is much worse; the power of assimilation of starches may be almost entirely gone. When this is so the patient rapidly loses flesh and strength, since carbohydrates are necessary for the animal organism.

The indications for treatment are evident, and in the majority of cases the assimilative powers can be brought back, if not to the normal, at least to a condition approaching it. The first indication is to prevent the sugar from getting into the urine. Keep it from the intestine, and this is easy; therefore, stop the carbohydrates for a time, limiting the patient to other foods. At once on limited diet the sugar in the urine lessens, after a time it stops, and still later the gradually increasing ingestion of carbohydrates will have the effect. For the present we can say only that then intestine is at fault, but Dr. Pavy could not help thinking we shall later find it to be a nervous condition acting on the vessels of the intestine.

Dr. Bremen, of St. Louis, said that he had listened with much pleasure to this paper and he desired to call attention again to his discovery. He claimed that his test with the aniline colors showed the red corpuscles to be at fault, and he believed that the red corpuscles normally contain a glycolytic ferment.

Dr. Hughes, of St. Louis, said that through the labors of the eminent men of to-day diabetes was not the terror it was years ago, and he was very glad to be present to hear Dr. Pavy say, he believed for the first time, that diabetes was probably due to a nervous condition.

Cessation of Respiration before that of Circulation.—Sir Dyce Duckworth, of London, reported briefly four cases, three of cerebral or cerebellar abscess consecutive to otitis media suppurativa and one of cerebral hemorrhage from tumor, in which the patient absolutely ceased to breathe for periods varying from three to five hours before the action of the heart was arrested. Artificial respiration was of no avail in restoring the lost function and hypodermic injections of strychnine and ether were equally powerless to re-establish it. Experiments were quoted to show that this occurrence has been noted in cases of injury to the brain from gunshot wounds, and the author discussed the possible explanation of this peculiar condition.

Fifth Day—Wednesday, August 25th.

The Relation of Nervous Dyspepsia to General Nervous Disturbances.—Dr. Rosenheim, of Berlin, read a paper on this subject. He defined nervous dyspepsia as a sensory neurosis differing from hyperæsthesia in that the disturbances are intimately associated with digestive activity of the stomach and that the symptoms are very similar to those of different

forms of gastritis. In nervous dyspepsia both motor and sensory functions may be disturbed. There may be an acidity, subacidity, or hyperacidity. Diminution in the amount of the gastric juice, hypermotility, and atony are often found. If the functional disturbance is marked and continues a long time, nervous dyspepsia may be easily confounded with other affections, especially with one or other of the forms of gastritis. Nervous dyspepsia, thus defined, is not the frequent affection it is commonly supposed to be and not all dyspeptic symptoms in a nervous individual point to nervous dyspepsia. In fifty such cases, post-mortem examination revealed the fact that more than one-half of the patients had suffered from other diseases of the stomach, principally inflammatory processes, and only in eleven cases were the complex symptoms of nervous dyspepsia found.

Nervous dyspepsia usually brings with it other nervous symptoms, sometimes giving us a complete picture of neurasthenia or (more seldom) of hysteria. That nervous dyspepsia is always a symptom of neurasthenia has been maintained, and it often happens that nervous symptoms depend on stomach disturbances and disappear when the latter are cured. Nevertheless, in nervous dyspepsia the treatment of the stomach symptoms is very useful, especially when combined with the treatment of the general condition and the pathogenesis.

Neuropathic Dyspepsia and its Relations to Changes in the Rhythm of the Heart.—Dr. Sansom, of London, read a paper with this title. He said he had made a clinical study of a considerable number of cases in which there were disturbances of the rhythmic action of the heart, in order to determine if there was an association between it and dyspepsia. The conclusions arrived at from this study were the following: 1. In the essential tachycardias without complications the manifestations of dyspepsia are not marked. In forty-six cases there was not one of dyspepsia which persisted. 2. In the cases of tachycardia following influenza dyspepsia was much more frequent, five out of thirty-seven cases. 3. Tachycardia accompanied by exophthalmic goitre was often associated with serious dyspepsia. 4. Arrhythmia of the heart without organic complications was often associated with dyspepsia. 5. Persistent brachycardia was evidently associated with marked dyspepsia, but intermittent brachycardia was also accompanied by epigastric pains, vomiting, and other signs of dyspepsia.

The Dress of Woman and the Position of Her Stomach.—Dr. Bendersky, of Kieff, read a paper in which he described a new sign which he had found to be an aid in defining the position of the stomach. The corset is well known to be injurious, but it is not the corset alone that is the whole cause. The lower part of the corset may even be useful, by protecting the stomach from injury by the petticoats, etc., for if the skirts are fastened tightly without a corset much more harm is done on account of the linear constriction. With the stomach in the normal position, the waistband of the dress lies between the stomach and transverse colon, but if there is gastroptosis the lines of the dress will not follow the greater curvature of the stomach (the author has seen such cases even in men) but lie above it. In looking at the female abdomen we see vertical and curved lines caused by the corset, but besides there is evident a horizontal line caused by the waistband of the dress. The author calls this line the gastric line because it defines the lower border of the stomach. It may also be found in men wearing tight waistbands.

Massage in the Treatment of Internal Diseases.—Dr. Dolega, of Leipzig, read a paper on this subject. He first reviewed briefly the history of treatment by massage. He showed that although many therapeutic discoveries had been made, massage still held its own high place. Moreover, many physicians who formerly were sceptical as to its usefulness, now ordered it, since physiological and experimental research had demonstrated its action and proved its worth. He gave the special indications for massage in the treatment of internal diseases; and said that mechano-therapy, especially massage, was destined to hold in the future even a still higher place in treatment and that the time had come when institutes of massage should be founded.

Gonorrhœal Endocarditis.—Dr. Thayer, of Baltimore, read a paper on this subject. The accumulating observations of recent years have demonstrated the fact that the pathogenesis of the different complications of gonorrhœa may vary materially in different instances. 1. That the complicating process may be of purely gonorrhœal origin has been shown particularly by the numerous cases of arthritis, occurring in connection with gonorrhœa in which the specific micro-organism has been demonstrated microscopically and obtained in pure cultures from the affected joints. 2. That complications may be due to a mixed or secondary infection with other pyogenic organisms has long been known, and the manner of development of such secondary processes has been well pictured by Finger in a recent article. 3. There is good reason to believe that serious focal lesions may occur in gonorrhœa without the actual presence of either the gonococcus or other micro-organisms, the lesions being due solely to the presence of circulating toxic substances. Definite proof of this hypothesis has not yet been advanced, but in view of the complete absence of bacteria on microscopical examination, as well as of the complete sterility of cultures taken from the affected regions in cases, for instance, of neuritis or myelitis secondary to gonorrhœa, as well as from analogy with other similar infectious processes, there is strong probability that such lesions exist. The presence of local foci of infection at remote points from the region originally affected, joints, tendon sheaths, etc., would lead us to infer that a true gonorrhœal septicæmia may occur. Everything points to the blood as the means by which the organisms are transferred to distant points. This was practically proved when Dr. Blumer and the speaker succeeded for the first time in obtaining the gonococcus in pure culture during life from the circulating blood of a case of ulcerative endocarditis. The case was then detailed. The blood was taken from the median basilic vein with a sterilized syringe and mixed with melted agar which was immediately plated. The first culture was negative, but the second and third showed minute white colonies representing apparently a pure culture of small biscuit-shaped diplococci which failed to grow on transmission to agar-agar, gelatin, potato, bouillon, and litmus milk. The autopsy confirmed the diagnosis, revealing an extensive ulcerative endocarditis of the mitral valve. In the thrombi upon the valve were found large numbers of small oval diplococci having all the morphological and tinctorial characteristics of gonococci. In this case the gonorrhœa was not recognized during life, but in a second case the gonorrhœa was recognized and every precaution was taken to make the bacteriological examination of the blood without question. In this case (that of a boy aged nineteen) two cubic centimetres of blood were drawn from the median basilic vein and mixed with four cubic centimetres of nutrient agar and plated. At the end of forty-eight hours numerous colonies half the size of a pinhead, granular in appearance with somewhat irregular borders, were found. They were of biscuit or kidney shape, the flattened sides of the cocci being turned toward each other, forming pairs.

They stained well with the ordinary basic stains and decolorized by Gram's method. Transplanted to human blood-serum agar by a smear upon the surface, there developed a fair number of colonies similar to the above and made up of diplococci having the same morphology and tinctorial reactions. Transplanted to ordinary agar there resulted a growth of a very few fine colonies made up of the same diplococci. On gelatin, ox-blood serum, and bouillon there was no growth. At the end of eighteen days cocci had all died out on the orginal plates. Later two cultures were made that acted in the same way. The autopsy showed the tricuspid valve to be the seat of an extensive thrombus formation. (The speaker showed an admirably executed painting of this thrombus.) Bacteriological examination of this thrombus also showed gonococci in pure culture. The gonorrhœal nature of the endocarditis as well as the actual existence of a gonorrhœal septicæmia seemed to be demonstrated beyond a doubt by the discovery and reproduction of the gonococcus in pure culture from the circulating blood during life and after death from the affected cardiac valves and from the pleural and pericardial exudates.

Trial of the Electrical Synthesis of Franklinization and of Currents of High Frequence.—Dr. Apostoli, of Paris, read a paper on this subject. The speaker's conclusions were: 1. No form of electricity can be constantly and absolutely the best in every case, since each form preserves its therapeutic usefulness under proper circumstances. 2. The symptomatic reactions of one or the other form may be useful in electro-diagnosis, and they show us the therapeutic inclinations better.

So-Called Hypertrophic Pulmonary Osteo-Arthropathy of Pierre Marie, without Pulmonary Disease.—Dr. John Lindsay Steven, of Glasgow, described a case of peculiar enlargement of the hands and feet due to a subperiosteal new formation of bone in the affected parts, which had all the clinical characters of the affection which Marie has designated hypertrophic pulmonary osteo-arthropathy. The paper was illustrated by photographs and skiagrams which showed very well the peculiar deformity, the skiagram in particular demonstrating the nature of the bone affection. The patient was a laborer, aged forty-eight, who had been ill in all about a year before his admission to Dr. Lindsay Steven's wards. He first noticed enlargement of the hands and feet, at first painless, but latterly disabling him on account of pain and stiffness in the ankles and knees. About four months before his admission he had a cough which, however, never laid him aside from work, and which had entirely gone fully a month before his admission to the infirmary. There was absolutely no sign of cardiac or pulmonary disease. The hands were greatly thickened, especially the fingers—the nails also were so curved that the point of the finger was covered by nail and not by skin. The lower end of the forearm bones were greatly thickened and rough, the roughness being traceable half-way up the arm. This was well demonstrated by the Roentgen rays. Sensation was normal everywhere. Vision was slightly defective, and the temporal half-field was slightly diminished. There was no kyphosis, no retrosternal dulness, no prognathism, or mental defect. The quantity of urine was excessive, averaging ninety ounces daily, but not otherwise abnormal. The ankles and feet presented characters on the whole similar to those observed in the upper extremities. The trunk and chest as regards their form were normal. Treatment had been unavailing.

The interest of the case was that we had all the clinical features of Marie's cumbrously named pulmonary hypertrophic osteo-arthropathy without the pulmonary disease, which in this case could not have been caused by reason of the non-absorption of pulmonary toxins. Its relationships to acromegaly and to Paget's osteitis deformans were also considered, but Dr. Lindsay Steven did not think that the clinical features corresponded to those of either of these affections. On the whole, he was inclined to regard the peculiar deformity as essentially rheumatic in nature.

Several papers were then read by title, after which the section was adjourned.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Tenth Annual Meeting, Held at Niagara Falls, New York, August 17, 18, 19, and 20, 1897.

First Day—Tuesday, August 17th.

The association met at the Cataract House, under the presidency of Dr. James F. W. Ross, of Toronto.

An address of welcome was delivered by Dr. W. R. Campbell, of Niagara Falls, which was responded to by The President.

Puerperal Eclampsia with Special Reference to Treatment.—Dr. William Warren Potter, of Buffalo, read the first paper. The principal object of the paper was to advocate principles which the speaker grouped under the following heads: 1. Though the pathogenesis of eclampsia is unsettled, it belongs solely to the pregnant or puerperal state. It is not apoplectic, epileptic, or hysterical in character. 2. It depends upon toxæmia due to overproduction of toxins and underelimination by the emunctories. 3. These toxins probably have their origin in the ingesta, in intestinal putrefaction, in fœtal metabolism, one or all, and there is coexisting sluggishness, impairment, or suspension of elimination. 4. When the prodromes of eclampsia appear, the kidney should be interrogated as to its functions and all symptoms carefully watched. 5. Treatment is preventive and curative. Preventive treatment is medicinal and hygienic; curative treatment is medicinal and obstetric. 6. Milk diet and distilled water should be given in the pre-eclampsic state to dilute the poison, hasten its elimination, and nourish the patient. 7. Bloodletting should be employed only in plethora or cyanosis. It is liable to cause anæmia if persisted in or repeated, whereas red blood corpuscles must be conserved, not wasted. Glonoin diminishes vasomotor spasm, hence may be given freely in appropriate cases. Veratrum viride is a cardiac depressant and a dangerous remedy if pushed to an extent that will control convulsions. 8. Eclampsia is the expression of a further maternal intolerance of the fœtus; hence as a prime measure the uterus should be speedily emptied of its contents. 9. Medicinal treatment alone is delusive, and when relied upon exclusively is fraught with danger to both mother and fœtus; whereas in the prompt induction of labor is found a rational application of science to a desperate condition. 10. Finally, induced labor furnishes, in the present state of our knowledge, the only basis of expectation for a diminished mortality in a toxæmic disease of high death rate.

Puerperal Diphtheria.—Dr. H. W. Longyear, of Detroit, read a paper on this subject, the object of which was to bring before the profession the fact that the Klebs-Loeffler bacillus is a potent factor in the etiology of puerperal infection, six cases being reported in proof of the position of the writer. The diphtheritic character of each case was determined not only by clinical evidence, but by bacteriological examination, made by the bacteriologist of the Detroit board of

health. Five of the patients recovered and one died, the one death occurring in the only case in which antidiphtheritic serum was not used.

The Source of Puerperal Sepsis.—Dr. John M. Duff, of Pittsburg, said that the exact source of puerperal sepsis in any given case was not always easy to determine. In a large proportion of cases, however, a careful inquiry would be rewarded with the revelation of a source. When found, it generally proved to be one which could have been avoided. Aseptic midwifery had done much to prevent puerperal sepsis, and consequently to lower the rate of mortality following childbirth. He had heard the opinion expressed that the accoucheur who was so unfortunate as to have a case of puerperal sepsis was guilty of malpractice. Such expressions he thought were extravagant and were not warranted by our present knowledge and experience. Sepsis does occur sometimes, despite the best efforts of the practitioner to prevent it. While he believed that puerperal sepsis cannot always be prevented, he did believe that with ideal surroundings, with a careful and skilful physician, assisted by an educated and conscientious nurse, the number of cases could be reduced to a minimum. Frequently too much reliance was placed upon antiseptics. For instance, a well-known member of the profession had said in his hearing a short time since that he felt perfectly safe in attending a case of labor after waiting upon a case of erysipelas or diphtheria, if he washed his hands well in a strong bichloride solution. Dr. Duff thought the patients would be safer if he went to them under such circumstances with fear and trembling, which would cause him to perform further ablutions, if possible.

Toxæmia of Pregnancy.—Dr. Adam H. Wright, of Toronto, read a paper in which he said that the chief symptoms of this condition were salivation; disorders of digestion, with sometimes a peculiar taste and constipation; general malaise, anæmia, nervous disturbances or headache, disorders of vision, irritability, deficient excretion of urine or some of its constituents, and albuminuria. To speak briefly, he thought any sign of the slightest departure from ordinary health during pregnancy should make us suspect the advent of general toxæmia, and should receive careful investigation and thorough treatment. If, for instance, there were general malaise with slight headache, but no albumin in the urine, we should not be deceived, since albuminuria was only one of the symptoms of systemic poisoning, and sometimes the last to appear. Its absence proved absolutely nothing. Coming to the treatment, reference was made to milk diet for toxæmia of pregnancy. He believed that a purely milk diet is good for young babes and calves, but he did not think that it is suitable for adult human beings. Yeo, in his admirable book on "Food in Health and Disease," shows clearly that milk is not a suitable food for healthy adults, because it contains an excess of albuminates and fats, and that it should be mixed with other foods, especially the carbohydrates. If it be conceded that milk alone is not the best food for healthy adults, it is difficult to conceive how it can be the most suitable in any case of disease.

The Treatment of Puerperal Endometritis by the Carossa Method.—Dr. Edward J. Ill, of Newark, N. J., read a paper with this title. There appeared, early in the winter of 1896, a pamphlet by K. Carossa, describing a method which consists simply in the use of alcohol as an irrigating material, supplemented by gauze packing of the uterus in such a way that the alcohol may find its way into the most distant recesses of the uterus. A catheter is introduced into the uterus, and this organ is filled with absorbent gauze. At the external end of this catheter a funnel is attached, through which a twenty to twenty-five volume per cent. alcohol solution is poured so as to flow into the gauze with which the uterus is filled. The quantity to be used is from thirty to fifty cubic centimetres every hour, day and night. In from three to six days the gauze is removed. The originator of this method had some fantastic theory of the evaporation of alcohol, with which the author of the paper could not agree. Dr. Ill has used the above method, slightly modified, with good results, and recommends it for further trial, especially so on account of its great simplicity.

Sequelæ Following Supravaginal Hysterectomy.—Dr. Rufus B. Hall, of Cincinnati, read this paper. He said he thought the profession had been too hasty in approving the present methods. It had taken the stand that there was nothing more to be desired—the operation was complete. While the doctor had no new method to offer, he hoped the discussion of his paper would suggest something to improve the technique of the present methods. He referred to objections to the extraperitoneal method, and then spoke more in detail of total extirpation. He was one of the first to advocate and make this operation, and he had attained excellent results with it. However, it did not meet his ideas of a perfect operation. The final results were good, but there was a primary difficulty that was disagreeable. Suppuration about the ligatures necessarily took place on the sixth or seventh day, causing a slight rise in temperature. To overcome the suppuration, he used specially prepared catgut for the ligatures below the peritoneum. He found the catgut unreliable on account of the danger from hemorrhage through slipping of the knots, and so abandoned its use. The doctor closed his paper by saying that in spite of the fault he had to find with total extirpation, he preferred it to supravaginal hysterectomy as practised by Baer and modified by others. He felt more certain of his final results with the former method.

The Sequelæ of Dead Ligatures and Sutures.—Dr. George M. Hughes, of Philadelphia, read a paper with this title. While assisting Dr. Joseph Price in his abdominal work, he had recently been greatly interested in a number of cases in which he reopened the abdomen for the freeing of adhesions and the removal of dead ligatures and sutures. Sutures and ligatures should be of that material which is most easily sterilized and which combines great strength in a small bulk. It was always preferable to use a material capable of being rendered aseptic by heat or boiling. If this could be done, we could at all times have the means at hand to render perfectly sterile our ligatures. For this purpose he finds that for pedicle ligatures and for bowel work the twisted Chinese silk is the best, of finest quality and sufficiently small to secure safe tying; for closure of the abdominal incision, silkworm gut and the through-and-through method. What becomes of the ligatures? If small and sterile, they become encapsulated and are rapidly absorbed. If plaited ligatures and large hawsers are used, whether infected or not, they are never absorbed, but their presence as foreign bodies gives a train of symptoms unbearable in their distress and constant in their duration. The same conditions are found about the pedicles, only here we have adhesions of omentum, large and small bowel, and bladder to both pedicles. To obviate postoperative accidents, we should select that method of applying ligatures which gives safety with the least quantity of material. For pedicles the simple figure-of-eight tie is the best, in that it gives a firm, small, strong tie, and one not liable to slip. The pedicle is then cut cone shape. The pedicle must be made as small as possible; large pedicles are prone to behave badly, and to this are due the postoperative adhesions of omentum, bowel, or bladder.

Second Day—Wednesday, August 18th.

Postclimacteric Conditions that Simulate Advanced Uterine Cancer.—Dr. M. Rosenwasser, of Cleveland, Ohio, read a paper on this subject. The writer commended the teaching that irregular hemorrhages and sero-sanguinous discharges, whether occurring during the parturient age or long after the menopause, are good and sufficient reasons to suspect malignancy. We carefully watch for early symptoms, and by their detection occasionally succeed in removing the disease while it is still local. On the other hand, we sometimes are caught off our guard when confronted by postclimacteric cases presenting all the classical characteristics of advanced malignant disease. The text-books are deficient in not sounding a note of warning against possible errors in the late stages. The so-called classical symptoms may be due to other (not malignant) conditions of the genital tract. Owing to effacement of the vaginal portion of the cervix in old age, the differential diagnosis is in most cases limited to corporeal diseases of the uterus. Before the diagnosis of corporeal cancer can be made, other diseases must be excluded. The conditions which are likely to simulate advanced cancer are the following: 1, Senile vaginitis; 2, foreign bodies in the vagina; 3, gangrenous fibroids; 4, atrophic, senile, or postclimacteric endometritis; 5, postclimacteric pyometra. Of these conditions, the last is especially liable to lead to errors. In conclusion, the author called attention to the singular fact that in the presence of the essential predisposing conditions—age, low vitality, cicatricial tissue, adhesions, chronic inflammation, and irritating discharges—cases of transformation into malignant disease are either unknown or exceedingly rare.

Certain Cysts of the Abdominal Wall.—Dr. Richard Douglas, of Nashville, Tenn., followed with a contribution on this subject. He confined himself to a consideration of abnormalities of the urachus, and reported an interesting case of urachal cyst which occurred in a woman, thirty-six years of age, married eleven years, and sterile.

Conservation of the Ovary.—Dr. B. Sherwood Dunn, of Los Angeles, Cal., read a paper on this subject. He said that Brown-Séquard believed and taught as a principle of physiology that every gland, whether provided or not with excretory ducts, gives to the blood a certain useful principle, the absence of which is felt and made apparent after destruction or modification of the functional activity of the gland by disease. In observations made upon 100 cases operated upon in Broca and St. Louis hospitals in Paris, he found that when women had prematurely lost both ovaries 78 per cent. subsequently suffered a notable loss of memory; 60 per cent. were troubled with flashes of heat and vertigo; 50 per cent. confessed to a change in their character, having become more irritable, less patient, and some so changed as to give way to violent and irrepressible fits of temper; 42 per cent. suffered more or less from mental depression, and 10 per cent. were so depressed as to verge upon melancholia. In 75 per cent. there was a diminution in sexual desire, and some of these claimed they experienced no sexual pleasure; 13 per cent. were not relieved of the pain from which they suffered; 35 per cent. increased in weight, and some became abnormally fat. Some complained of a diminution in the power of vision; 12 per cent. noted a change in the tone of their voice to a heavier, more masculine quality. Some 15 per cent. suffered from irregular attacks of minor skin affection; 25 per cent. had severe headaches, as a rule increased in intensity at the menstrual period. Equally as many complained of nightmare, more or less consant, while about 5 per cent. suffered from insomnia. In a few cases there existed a sexual hyperexcitability not present prior to the castration. He particularly noted a few cases presenting gastric reflexes, in which without any premonitory symptoms or apparent cause the stomach would reject food or refuse to prepare it for intestinal digestion, and the consequent distress following the fermentation compelled the patient to seek relief. It should be noted that usually these troubles were more marked in women under thirty or thirty-three years of age. He had for some time been favorably disposed to the hypothesis advanced by Brown-Séquard, and any scepticism that he might have entertained of the theory of ovarian secretion and its usefulness and necessity to the equipoise of the whole system had been completely dissipated by the results of experiments made with ovarian substance in patients who had lost both ovaries or were suffering from troubles which in a greater or less measure were due to a diseased condition of the ovary.

Some Observations upon Ventral Fixation.—Dr. Herman E. Hayd, of Buffalo, in a paper on this subject, stated that ventral fixation or suspension of the uterus, coupled with the various plastic operations upon the cervix and vagina, was the only means surgical or anatomical which will fix and support for future comfort and well-being an extremely prolapsed uterus. In his last six cases of ventral fixation, he sewed the uterus to the abdominal wall with chromicized catgut, No. 3, and did not even scarify the peritoneal covering of the uterus. He held the organ by thin sutures, which took in simply the peritoneum and the connective tissue over it; but in one case in which the organ was very heavy and the woman short and stout, he hitched on to the rectal fascia and muscles. He has invariably sewed the anterior surface of the uterus, feeling more satisfied with the position assumed under these circumstances than when the sutures catch the superior and posterior surface, as is advocated in ventral suspension. In patients he has operated on and those he has examined after operation of ventral suspension, he has found the organ in a too anteflected position, and it may be the cause of some future annoyance. He has discarded silk and all unabsorbable ligature materials, believing that catgut can be sterilized and rendered absolutely safe and is perfectly manageable.

Surgery and Facts.—Dr. James F. W. Ross, of Toronto, then delivered the president's address. He said the work of members of the association was confined between the diaphragm, the perineum, and the abdominal walls, and that they had met to cultivate and promote a knowledge of whatever relates to abdominal surgery, obstetrics, and gynæcology. Attention was drawn to some unsettled questions, the first being peritonitis. Are we able to do more to save the lives of patients suffering from this disease in its acute form than we were ten years ago? Are we not but little better off, with all our antiseptic and aseptic washes, gauze and tube drains, and purgatives? He was satisfied that surgery could carry us no farther when battling with this disease. The questions of operating upon the appendix and the diagnosis and treatment of ectopic gestation had been fairly well settled. The method of dealing with the pedicle in ovariotomy had been settled, except for the fact that some operators preferred silk, while others were assured of the safety of catgut. Operations upon the gall bladder and gall ducts had been performed many times during the past ten years, and they were now well recognized as proper surgical procedures. The operations of nephrectomy and nephrotomy were looked upon as every-day procedures, justified by the consensus of surgical opinion. Abdominal hysterectomy was an operation that had been much improved and simplified, some operators being still wedded to

the clamp, while others preferred some of the other methods. The advisability of oöphorectomy for some fibroids could not be doubted. There were two operations that Dr. Ross thought were of doubtful value, namely, the fastening of the kidney to the side, and the fastening of a uterus anywhere. He considered that these operations had been recklessly performed and unnecessarily undertaken. Certain operations to which more thought must be given are those for intra-abdominal and intrapelvic cancer. When peritoneal cancer has been diagnosed, surely exploratory operation is uncalled for. Operations for other forms of cancer are of questionable utility. Take, for instance, resection of a cancerous intestine, gastro-enterostomy for pyloric cancer, and removal of the uterus for uterine cancer. Gastro-enterostomy and resection of the intestine are poor makeshifts. For carcinoma uteri, vaginal hysterectomy is the only operation that should be contemplated, but at best it prolongs life for but a short time.

Treatment of Uterine Displacements.—Dr. C. C. Frederick, of Buffalo, N. Y., read a paper entitled "Which is the Preferable Operative Method of Holding the Uterus in Position?" All retroversions do not produce symptoms, but a certain proportion is accompanied by hypertrophy of the uterus, endometritis, leucorrhœa, pain, backache, menorrhagia, metrorrhagia, or general malaise. Constitutional treatment fails to relieve a large proportion of them without restoration of the uterus to a normal position and a cure of the accompanying hypertrophy and endometritis by reposition. The large factors in the continuance of the ill effect of retroversion are torsion of vessels, infection of the endometrium, and defective drainage of the uterine cavity. Retroversion is a first stage of prolapse, and the uterus ought for that reason alone to be replaced and held in position. Sterility is one frequent result of retroversion. Results of treatment are good by operation or by holding the uterus in position by a pessary, if possible together with general tonic treatment, Weir Mitchell rest treatment, etc. Many patients are cured and eventually get strong and well again. Ventrofixation has been discontinued by the writer in women liable to bear children. He uses it only to hold up the uterus in operations for prolapse and in those cases in which he has removed both tubes and desires to hold the uterus in position, time being an element in the operation. The writer has seen no ill results during labor, and knows of none occurring in his own patients, although several have borne children. He had seen no recurrence of retroversion, even in those who have borne children. His preference was for the Alexander operation or some of its modifications, in cases of women who have borne children and when there are no adhesions or disease of the adnexa. Women who have never been pregnant are liable to have poorly developed round ligaments, prone to tear away from the anchoring sutures. In these he opened the abdomen and shortened the round ligaments by one of the methods devised by Mann, Dudley, or Wylie. He gave Mann's method the preference. Several of the patients have borne children both after the internal and external shortening of the round ligaments, with good results. The writer used unabsorbable ligatures or sutures, always employing plain catgut or chromicized catgut when a suture is used for a long period. He never had used any of the vaginal methods of fixation, not being pleased with them.

Third Day—Thursday, August 19th.

The Technique of the Dry Method was the title of a paper by Dr. Edwin Walker, of Evansville, Ind., in which he said that by the dry method is meant a technique in which no water or other fluid is used. This does not apply to the preparation before the operation. After the first stroke of the knife until the wound is closed, not a drop of water is used. The writer has employed it exclusively for several years with good results. The technique is as follows: Nurses are instructed to use every precaution to prevent soiling the hands in septic cases, and thoroughly to disinfect the hands after any suspicion of contamination. Every instrument used is sterilized before it is put away. The hands are scrubbed thoroughly with a brush, with liquid soap (equal parts of green soap, glycerin, and alcohol), and repeatedly rinsed in sterile water. They are then wiped off with alcohol, dipped for two minutes in bichloride solution, 1 to 1,000, and then washed off with salt solution. The field of operation is similarly prepared, except that the scrubbing is repeated daily for two or three days before the operation, and a soap poultice used at night. The instruments are boiled in soda solution for five or ten minutes, wrapped in towels, or placed in metal boxes, which are opened only at the time of operation. Plain gauze is used for every purpose except packing the uterus, and in rare instances when drainage is used iodoform gauze is preferred. The silk ligatures are wrapped on spools and placed in glass boxes, and the silkworm gut and silver wire in long glass tubes, and all sterilized by steam, as are the dressings. The plain catgut is boiled in alcohol, and the chromicized is prepared after Edebohls' method. After the patient is placed on the table, the dressing, which consists usually of plain gauze, is removed from the field of operation, and sterilized towels are adjusted as usual. The instruments are unwrapped and everything is in readiness. The sponges are used dry, and thrown away when soiled. The flat sponges in the abdomen are also used dry, and are provided with a cord which is clamped with a pincette. The latter is left outside, so that the sponge cannot be forgotten and left in the abdomen.

Surgical Shock and Hemorrhage. — Dr. Walter B. Chase, of Brooklyn, N. Y., read a paper, of which the following are the conclusions: 1. The treatment of shock should be preventive and curative, and to a large degree the indications for the former define the lines of treatment in the latter. 2. The proper exhibition of preventive measures includes a careful study of the functional activity and organic status of all important organs, and such treatment by hygienic, dietetic, and therapeutic measures as will elevate the standard of bodily and mental health to a degree in which the maximum power of resistance may be produced and maintained. 3. Special emphasis should be given to lithæmic and uræmic excretion, and to the condition of the circulatory and nervous systems. 4. Knowledge as to inherited power of resistance to and recovery from serious disease and accidents is of the highest value in determining the course of procedure and in estimating the chances for recovery after capital operations. 5. A supply of facilities and drugs for meeting all emergencies should be in constant readiness, with exact knowledge for the indications, dosage, physiological and therapeutic effect of special heart tonics and stimulants, including strychnine, digitalis, nitroglycerin, etc. 6. Limit the time of an operation to the shortest space compatible with thorough work and proper technique. 7. Save the patient to the utmost from the shock of fear, and in selected cases proceed to operation without informing the patient of your purpose. 8. In shock with hemorrhage supply the volume of venous and arterial loss by direct transfusion of decinormal salt solution into the patient's veins. 9. Bear in mind the influence position has on the circulation under both shock and hemorrhage, especially in anæmic conditions of the cerebro-spinal nerve centres and the heart.

Placenta Prævia.—Dr. W. H. Wenning, of Cincinnati, Ohio, read a paper on the treatment of this condition. The following is a summary of the treatment laid down by the author in the order of time of the accident, amount of hemorrhage, and condition of the patient: (*a*) Before labor: 1. Hemorrhage slight —rest, expectant treatment. 2. Hemorrhage moderate —tampon vagina. 3. Hemorrhage profuse—also try tampon and induce labor. (*b*) In the beginning of labor: 1. Hemorrhage moderate — Braxton Hicks' method, provided the obstetrician has skilled assistance at hand; otherwise tampon the cervix with the cervical bag, until (*c*) labor is well in progress, then rupture membranes and deliver by podalic version; or, if hemorrhage is arrested by the descending hand, deliver by forceps or permit spontaneous expulsion if pains are good. At any stage, when hemorrhage is excessive or cannot otherwise be arrested, manual dilatation, followed by *accouchement forcé*. The tampon is indicated: (1) In hemorrhage toward the end of pregnancy; (2) in the beginning of labor when the os is closed; (3) in moderate dilatation of the cervix, then use cervical tampon. It is contraindicated: (1) When dilatation is complete or nearly so; (2) when it fails to arrest hemorrhage even if dilatation is not far advanced. Rupture of the membranes is indicated: (1) When the os is well dilated and either spontaneous labor or artificial delivery may occur; (2) when by this method hemorrhage is better controlled than by other means; (3) when in the absence of labor pains it will be followed by immediate pressure of the presenting part. It is contraindicated: (1) When the os is undilated and pains are good; (2) in faulty presentation of the fœtus, unless it can be followed immediately by version. Version is indicated: (1) When the os will admit two fingers and combined version can readily be made, Braxton Hicks' method; (2) when the os is well dilated or dilatable and hemorrhage is profuse, direct or internal version; (3) in desperate cases, *accouchement forcé*. It is contraindicated: (1) When with a moderately dilated os combined version cannot be skilfully made (the cervical tampon); (2) when with a well-dilated os after rupture of the membranes the head immediately engages in the cervix.

Complete Hysterectomy after Injury during Parturition and Cæsarean Section. — Dr. Joseph H. Branham, of Baltimore, reported two cases and then discussed the causes and prominent symptoms of rupture of the uterus. When symptoms of uterine rupture occur, he said, delivery should be completed as rapidly as possible by the use of whatever means may best bring about the results. The child nearly always dies in a few minutes, so that only the mother should be considered. If the child has escaped into the abdominal cavity, immediate laparotomy is indicated. After the child has been delivered, two methods of procedure are recommended. One is the closing of the tear by packing with iodoform wicking and drainage of the parts with gauze. The other, which in complete ruptures is often more popular, is to do a laparotomy, cleansing the peritoneal cavity. In suitable cases the tear may be closed by the Sänger method. If the tears are very extensive and there is a strong probability of uterine infection, a Porro operation or complete hysterectomy is the best method. The preventive method consists in the early relief of difficult labor by suitable operative interference, instituted before the uterus has become very thin and damaged by long-continued pressure between the presenting part and the bones of the pelvis.

Tonic and Spasmodic Intestinal Contractions.—Dr. X. O. Werder, of Pittsburg, read a paper on this subject, in which he reviewed five cases—one by Dr. Murphy, two by Dr. Long, and two of his own—reported by Dr. Long at the Richmond, Va., meeting of the association, and added some additional cases of a similar condition that he had observed subsequently. He referred to cases reported by L. Heidenhain, and applied the term enterospasm, dividing the cases according to their nature and severity into spasmodic and tonic or tetanic forms. He thought that these cases are perversions of normal peristalsis, due to a reflex chemical or mechanical irritation exerted at the seat of contraction (either on the mucous or serous surfaces of the bowel) or elsewhere in the alimentary canal or abdomen. He said that they assume surgical importance when in the spasmodic varieties they simulate neoplasms—as in three cases of that variety reported—or when they cause obstruction to the fecal current, becoming true cases of dynamic ileus.

Dynamic Ileus Following Operations Involving the Abdominal Cavity, with Remarks on Adynamic Ileus.—This paper was read by Dr. Frederick Blume, of Allegheny, Pa. The author said that the differential diagnosis between post-operative intestinal obstruction and dynamic ileus is practically impossible, but that in either case the only chance for the patient is afforded by early operative interference. The surgeon, however, must distinguish these forms of ileus and a very obstinate form of constipation so often met with and so difficult to overcome, after operations in the abdominal cavity. The occurrence of fæcal vomiting is not always a pathognomonic sign of ileus, as this vomiting sometimes occurs in other conditions, and when there exists no indication for surgical interference.

The Fate of Ovaries in Connection with Retroversion and Retroflexion of the Uterus.—Dr. Albert Goldspohn, of Chicago, read a paper with the following conclusions: (1) In all cases of retroversion and retroflexion of the uterus a knowledge of the ovaries as to their location, mobility, and general physical condition should comprise an essential part in the diagnosis, as determining largely the nature and urgency of the treatment. (2) The welfare of ovaries, in general, demands such a degree of anterior inclination of the longitudinal axis of the uterus as will enable intra-abdominal pressure to bear upon the posterior surface of the organ, and thereby to act in unison with its other supports to retain it and its adnexa in normal position and function. (3) Inasmuch as in the female pelvis as well as elsewhere in the human body the natural and considerable abilities of healthy tissues to defend themselves against microbic invasion (infection) are lowered or annulled in direct proportion to any degree of mechanical embarrassment of the venous circulation in the tissues or organs, it behooves gynæcologists especially to be alert in recognizing and correcting all material anomalies in place or posture of the female generative organs or in securing to them their normal freedom.

The Administration of Phosphate of Strychnine during Gestation.—Dr. Walter B. Drosett, of St. Louis, Mo., read a paper with this title. The following good results have been gained by him in the use of this drug during the gestation of weak and debilitated patients: A good appetite and good assimilation are obtained in the general weakness and debility of the anæmic. Constipation is relieved, the patient is built up and placed in a good condition to pass through the ordeal of labor. The uterus contracts promptly after the third stage of labor, and the use of ergot is entirely dispensed with. If he finds it necessary to use the forceps the patient is given a hypodermic injection of one-thirtieth grain of sulphate or phosphate of strychnine as soon as the anæsthetic is commenced, but no ergot is ever used. After the continuous use of the phosphate of strychnine, the uterus contracts promptly after the second stage of labor, and in many

cases the application of Credé's method of expression of the placenta is not needed to bring it away, and no post-partum hemorrhages have occurred. The frequently observed chilliness or rigors which in the majority of cases follow labor have been noticed in but few cases. For some time in his abdominal surgery he has used strychnine for the purpose of preventing shock and to control the pulse in operations, and in this way was led to its use in obstetrics. As phosphorus and strychnine are remedies used in the treatment of rachitis with good results, would it not be the remedy during the gestation of the rachitic fœtus?

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Fourth Day—Friday, August 20th.

Appendicitis.—Dr. George S. Peck, of Youngstown, Ohio, read a paper in which he reported fifty-two cases illustrating his personal experience with the medical and surgical treatment of appendicitis. He said there were four cardinal symptoms which will almost invariably insure a correct diagnosis, if they occur in the order given. First, sudden severe pain in the abdomen, generally of a colicky nature, located in any part or extending over the entire abdomen. Second, always nausea and frequently vomiting. Third, increased temperature. Fourth, localized tenderness in the right iliac region. Some patients will have diarrhœa, while others may be constipated. He had never failed to make a correct diagnosis when the four cardinal symptoms were present. Surgeons differ in their methods of operating. Some advise in the acute suppurative form simple incision and evacuation of pus. If the appendix cannot be easily found, it should be left, drained, and packed, and then in the interval between attacks the appendix should be removed, always provided one can get the consent of the patient, which the speaker has found to be difficult. A few surgeons advise the liberating of all adhesions and the removal of the appendix in all cases of acute suppurative appendicitis, and have reported good results. He believes it is the duty of every surgeon to make a complete operation in the vast majority of cases, and thinks that the time is not far distant when all surgeons will advise the breaking up of all adhesions, the removal of every diseased appendix, and the closing of the incision as is now done in the operation for pyosalpinx, as advised by Morris, Price, and McMurtry. In his last three cases he had followed this method and the results had been far beyond his expectations. Two of the cases were discharged in three, and one in four weeks.

Dr. Lewis S. McMurtry, of Louisville, Ky., followed with a paper entitled "The Operation Itself in Appendicitis," in which he considered the subject under the following headings: 1, the incision; 2, dealing with adhesions and with abscesses; 3, removal of the appendix; 4, drainage and isolation of the peritoneum by gauze. Concerning the incision three important considerations must be observed. The first is to obtain easy access to the caput coli with sufficient working-space; second, to secure all natural advantages to facilitate drainage; third, to do the least damage possible to the parietal structures incised in order that firm union may be secured and hernia thereby prevented. The early operations for appendicitis are mostly in extreme cases, wherein suppuration has obtained, and consist in cutting down into an abscess and evacuating and draining the same. For this purpose the vertical incision was adopted and is yet practised by many surgeons. This incision does not, however, in his opinion give so easy access to the appendix and to the outer and posterior areas adjacent thereto, which are so frequently involved, as does the oblique incision. A method of dividing the abdominal wall by a combination of incision and blunt dissection has been described by McBurney and commended by many writers on surgery of the appendix. This incision was described at length. In dealing with adhesions and abscesses the same general rules of surgical treatment should be observed in appendicitis as in similar conditions affecting other organs inclosed within the peritoneum. Whenever practicable, adhesions should be separated, abscesses emptied, disintegrated structures composing foci of infection removed, and cleansing and drainage secured by measures of assured efficiency.

In his early operations he ligated the appendix with the meso-appendix, using fine silk sterilized, cut away the appendix, and applied pure carbolic acid to the stump. Later he adopted the modern method of transfixing the meso-appendix at its base, cutting it away, stripping back a cuff of peritoneum from the appendix down to its junction with the cæcum, ligating the appendix with fine silk and cutting it away, sterilizing the stump, invaginating the stump into the cæcum and covering with peritoneum by careful stitching after the Lembert method. Nothing in the progress of healing or in ultimate results indicated any advantage of the latter method over the former simple ligature, excision, and cauterization.

Senile Irritable Uterus.—Dr. Thomas J. Maxwell, of Keokuk, Iowa, contributed a paper on this subject. In three cases he was unable to relieve this condition by tentative treatment, and finally resorted to hysterectomy with complete success in all of them.

The Election of Officers resulted as follows: *President*, Dr. Charles A. L. Reed, of Cincinnati, O.; *Vice-Presidents*, Dr. Richard Douglas, Nashville, Tenn., and Dr. Walter B. Dorsett, St. Louis, Mo.; *Secretary*, Dr. William Warren Potter, Buffalo, N. Y.; *Treasurer*, Dr. X. O. Werder, Pittsburg, Pa.

Place of meeting, Pittsburg, Pa. Time, September 20, 21, and 22, 1898.

Therapeutic Hints.

Diphtheritic Paralyses.—

℞ [illegible] . . . . . 1–4 gtt.
Strych. sulphat. . . . . gr. ¹/₃₀.
Aquæ . . . . . f℥ss.
M. S. [illegible] every four years of age.

—L. Simon.

Antiseptic Powder.—

℞ [illegible] . . . . . 1 gr.
Ac. boric 28.34
[illegible] 0.60
[illegible] 56.66
M. S. For external use.

—Pick.

Gout.—

℞ Tr. stramonii . . . . . ♏ i.
[illegible] . . . . . ♏ xxx.
[illegible] . . . . . ♏ i.
M. S. Teaspoonful three times a day in milk.

—Gayle.

Non-Diphtheritic Throat Affections in Children.—

℞ [illegible] . . . . . ♏ xx.
Sweet almond oil . . . . . ♏ i.
[illegible] . . . . . ♏ xx.
Distilled water . . . . . ♏ iiss.

Peppermint, orange-flower water, vanilla, or cherry-laurel water may be added to make aromatic. Salol should be suspended if the urine appears of a dark color.—De la Carrière.

Treatment of Laryngeal Tuberculosis.—Dr. Jankenevitch says the principal element of treatment consists in the application of chloride of zinc and carbo-

lated glycerin, in strength of 1 to 10 or 1 to 5, according to the nature of the case. The following antiseptic spray is advised:

℞ Acid. boric.	5 gm.
Acid. phenic.	60 cgm.
Glycerin.	50 gm.
Aquæ laurocerasi.	50 gm.
Aquæ.	450 gm.

This is especially valuable in the initial catarrhal stage. *Journal de Médecine*, February 10, 1897.

Treatment of Epilepsy.—As an adjuvant:

℞ Zinc. oxid.	0.10 cgm.
Pulv. valerian.	0.10 "
Pulv. bellad.	0.01 "
Sapon. medic.	q.s.

S. To make one pill. Take four daily.

Treatment of Fetid Bronchitis.—

℞ Hyposulphate of sodium	15 gm.
Distilled water	60 "
Simple syrup	25 "

—Polli.

Treatment of Diabetes.—In an article upon treatment by means of a diet from which all carbohydrates have been excluded, Dr. Edward L. Munson draws the following conclusions in *The Journal of the American Medical Association*, May 15, 1897: 1. Sugar is always present in the blood. 2. The absence of carbohydrates from the diet does not cause a disappearance of the blood sugar. Hence sugar must have some other source than the carbohydrates ingested. 3. This other source of sugar is the ingested and systemic albumin elaborated through a process of decomposition. 4. An increased albumin decomposition due to the rigid enforcement of a purely nitrogenous diet means an increased metabolism and consequent loss of body weight. Hence the cutting off of carbohydrates from the diet directly produces an increased metabolism. 5. *Vice versa*, the administration of carbohydrates retards metabolism. 6. The diabetic has an especial predisposition toward metabolism. 7. The diabetic has by no means lost the power of burning sugar; therefore sugar must, even more than in health, be allowed, in order to prevent loss of weight and muscular weakness, which may result in one of the natural endings of diabetes, death by asthenia. 8. The abnormal albumin metabolism, which is especially produced by a rigid proteid diet, results in the production of toxic bodies. 9. The depressed nervous condition of the diabetic is especially favorable for the action of these bodies. 10. The production of toxic bodies is prevented or retarded by the administration of carbohydrates. Hence carbohydrates should be administered to the diabetic to prevent the formation of certain toxic bodies and the severe and often fatal nervous and cerebral symptoms which they induce.

Faulty Hydrotherapy. — Dr. Baruch concluded, in a paper read before the German Medical Society of New York: 1. That the therapeutic application of water demands at least as much care as the use of medicinal agents. 2. That, owing to the flexibility of water as a remedial agent, in its use greater demands are made upon the practitioner than in the use of medicines. 3. That the best results may be obtained only by following an exact technique in each case. 4. That the reason different results are obtained by different physicians from the application of water may be found in the technical errors committed on account of an erroneous conception of the *rationale* of hydrotherapy.

Chorea. Krafft-Ebing (*Allg. Wien. med. Ztg.*, 1897, B. iii., S. 5), in speaking of the treatment of this disease, lays stress upon the attainment of "peace of mind and body." A milk diet may be given and the patient should be out of doors as much as possible. Warm baths are recommended. In chorea gravis sleep may be produced by means of the wet pack; if hypnotic drugs are called for, amyl hydrate, four grams per diem, trional, urethan, and in the worst cases chloral hydrate, are employed. In treating the general condition nothing approaches arsenic for allaying the general irritability of the nervous system; nux vomica may also be of service. Chorea in adults over thirty years comes on slowly, is difficult to subdue, and its victims often develop *tædium vitæ* and suicidal impulses. In one case of this kind it was found that hyoscine acted with benefit for a time, but later on the disease progressed.

Cancer of Stomach.—To control the vomiting:

℞ Picrotoxin.	0.05 cgm.
Morph. hydroch.	0.05 cgm.
Atropin. sulph. neut.	0.01 cgm.
Aq. laurocerasi.	20 gm.

S. Five to eight drops before meals.

—Albert Robin.

Diabetes Mellitus.—

℞ Lithii carbonat.	gr. xxx.
Sodii arseniat.	gr. i.
Ext. gentianæ.	gr. xv.

M. ft. massa et in pil. No. 20 div. S. One pill morning and evening.

—Vigier, *Annual Univ. Med. Sci.*

Follicular Tonsillitis.—

℞ Olei creosoti.	gtt. viij.
Tinct. myrrhæ,	
Glycerini.	āā ℥ ij.
Aq.	ad ℥ viij.

S. Use as a gargle every two hours.

—Levy, *Medical and Surgical Reporter*.

Itching of Urticaria.—

℞ Distilled water.	450 parts.
Cherry-laurel water.	50 "
Chloral hydrate.	5 "
Cocaine hydrochlorate.	3 "

—*Provence Médicale.*

Scarlatina.—

℞ Tinct. ferri chloridi.	℥ ij.
Potassii chloratis.	ʒ i.–ij.
Syr. simplicis.	℥ iv.

M. S. A teaspoonful every hour or two to a child of four or five years.

—J. Lewis Smith.

Superficial Cancer without Ganglionic Involvement.—

℞ Acidi arsenosi.	1 gm.
Alcohol, ethyl.,	
Aq. dest.	āā 75 "

Paint the surface daily. As the eschar grows thicker increase the strength to 1 in 40.

—Czerny and Trunecek, *La Sem. Méd.*, May 1st.

Malignant Pustule.

℞ Hydrarg. bicyanid.	1
Aq. dest.	100
Cocainæ salicylat.	q.s.

M. S. Inject from half to one syringeful subcutaneously and cover the area with sublimate compresses.

—Kedroff.

Ergot in Post-Partum Hemorrhage.—Dr. Lombe Atthill (*British Medical Journal*, March 6th) gives the following results of his experience in regard to the use of ergot: 1. When administered previous to the termination of pregnancy in the case of women in whom a marked tendency to post-partum hemorrhage is known to exist, it tends in a marked manner to prevent the occurrence of hemorrhage. 2. When so

administered in ordinary doses, it does not induce any injurious effect on either mother or child, and its exhibition seems to delay the commencement of labor in such cases. 3. It tends to make the involution of the uterus more perfect, and lessens the chance of occurrence of subsequent uterine troubles, many of which depend for their cause upon imperfect involution of that organ. 4. It will not bring on premature labor or induce abortion, unless uterine action has previously been set going. 5. In cases of threatened abortion its administration frequently seems to act as a uterine tonic, and in some cases tends to avert the danger of a miscarriage, provided the ovum be not blighted. 6. If the ovum be blighted, and especially if it be detached, ergot usually hastens its expulsion.

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Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

UNEXPECTED ELECTION—MEMORIAL ON MEDICAL-AID ASSOCIATIONS—SANITARY CONGRESS—HOSPITAL FUNDS—DEATH OF DR. TURNBULL.

London, September 17, 1897.

We are soon to be troubled with another election of a representative of the registered practitioners in the General Medical Council, for Dr. R. R. Rentoul has already resigned his seat, having apparently had enough of it in one session. I very much regret his resignation, his supporters generally are grievously disappointed, and even those who are opposed to his views seem sorry that he should throw up the opportunity of keeping them before the profession in the council itself where other opinions prevail. Howbeit, he perhaps has sufficient reason to justify himself in his own mind for abandoning this important part of his work. It is to be hoped he will not give up the special department of reform which secured his election.

Who is to succeed him is the question of the day. Two former candidates are already in the field—Mr. Jackson, the nominee of the Incorporated Practitioners' Society; and Dr. Diver, who is an independent candidate. Two others, Drs. Woodcock and Drage, decline to contest the seat on this occasion, but are willing to come forward in the future.

Mr. Victor Horsley, F.R.S., is also willing to serve, and the excellent work he has done for medical defence should insure him a wide support, while his scientific position would give him a respectful hearing in the council.

It is suggested in some quarters that Sir W. Foster should be induced to resume his place in the council, but I see no reason for inviting the return of one who might, had he desired, have continued to sit; and he is merely the mouthpiece of the older clique of the British Medical Association. In reference to this, it is curious to notice the change in tone toward the association lately adopted by *The Lancet*, which now seems to think that this numerous body should nominate a candidate and carry him by force of numbers and a ready-made organization. Now, on the 1st inst., *The Times*, referring to the meeting at Montreal, took occasion to deliver a scathing criticism on the uselessness of the association, which, while it has been bitterly resented by the wirepullers, has given no little satisfaction to many thinking men. Of course the *Journal* could not ignore the attack, and on the 11th inst. entered on its defence, and as usual claimed the credit of having initiated and carried all the reforms, legislative or other, which have been accomplished in matters medical for this long time. More curiously, too, *The Lancet* of the same day took up its parable on behalf of the association it has so often had occasion to criticise. Perhaps *The Times* article was a little severe and not absolutely free from inaccuracy, but its appearance has given profound satisfaction to a large number of the profession, both within and without the association.

The medical men of Yarmouth have agreed upon a memorial to the various licensing bodies anent the aid associations, in which they ask the corporations whether they consider holding these appointments compatible with the conditions on which the diplomas or degrees were granted; if holding them does not contravene the regulations; whether they consider that in the interests of the public and the profession bylaws forbidding such practice should be adopted; and whether they do not consider holding such appointments should be declared by the Medical Council "infamous conduct in a professional respect," and, if so, whether they will instruct their representatives on the council to support such a declaration.

The memorial gives a summary statement of the abuses which have led to this action, and may perhaps be followed up by other local medical societies. Unless a general movement of the kind takes place, it is probable that the universities and corporations will continue their course of inaction.

The Sixteenth Sanitary Congress was opened at Leeds on Tuesday, and is still sitting. The addresses on "River Pollution" and "Sanitary Inspection" excited a good deal of interest. Major Flower traced briefly the history of the management of the great northeastern watershed, covering six hundred miles, which furnishes a considerable proportion of the London water supply. He urged the necessity of further legislation as to the fouling of streams, and advocated the abolition of all exceptions or special clauses, and would make it a penal offence to pollute any river or stream.

The Prince of Wales' hospital fund now amounts to nearly £184,000.

Dr. J. Muter Turnbull, F.R.C.P., formerly of Liverpool, died on the 7th inst., aged eighty, having been for years a martyr to chronic rheumatic arthritis. He was physician to the Royal Infirmary from 1849 to 1876, and enjoyed a leading position in the north of England. In 1881 he went to Cannes for failing health, and there the rheumatic affection declared itself. After the manner of this dire disease, successive attacks followed and eventually completely crippled him. For several years he had lived at Tunbridge Wells, which seemed to suit him as well as anywhere, and where I had the opportunity of witnessing his patience in his suffering and infirmities, which were as far as possible alleviated by the ministrations of his devoted wife.

WHO INTRODUCED THE TERM "APPENDICITIS"?

To the Editor of the Medical Record.

Sir: In the Medical Record for January 23, 1897, page 142, Dr. Gerster, of New York devotes nearly an entire column to an attempt to "abolish appendicitis;" and although he says he neither "knows nor cares" who is responsible for this "philological monstrosity," and "that the reckless ease with which the word was coined cannot be excused by the difficulty or impossibility of finding a better, more rational, and yet intelligible expression," and goes on to offer "scolecitis" as a substitute, the pages of the Medical Record fail to show that his suggestion has as yet met with

any favor. It is more than probable that "appendicitis" has come to stay. In Mr. Christopher Heath's annual address before the surgical section of the British Medical Association recently at Montreal, he said: "I do not know to whom we are indebted for the hybrid term appendicitis, but it did not appear in the index to the *British Medical Journal* before 1891."

The fact that the origin of this term was unknown to these two eminent surgeons led me to think that it was not very widely known that Dr. Reginald H. Fitz, of Harvard, is responsible for the term appendicitis. In the article on "Appendicitis," in the "Practice of Medicine" by H. C. Wood and R. H. Fitz, p. 876, is this statement:

"The importance of recognizing the vermiform appendix as the usual source of the inflammations in the right iliac fossa, whether designated iliac abscess, iliac phlegmon, typhlitis, perityphlitis, paratyphlitis, or typhlo-enteritis, led Fitz to offer the term appendicitis to indicate the primary disease whose results were so variously named. Despite the barbarism of the term, its practical importance has made it welcome." A. B. ROSENBERRY, M.D.

[illegible], Wis., September 17, 1897.

TAPEWORM IN MAN.

To the Editor of the Medical Record.

SIR: In reference to the statement of Dr. E. C. Chamberlin in your issue of August 28th, that tapeworm is confined to females, I beg to state that one of the most perfect specimens I have ever seen came from one of the students of the Atlanta, Ga., Medical College last winter. So perfect was it that I secured the worm for the college museum. This is one case, at least, in a male. C. M. BLACKFORD, JR., M.D.

Atlanta, Ga.

"HOSPITAL ENTERPRISE."

To the Editor of the Medical Record.

SIR: The undersigned physicians and surgeons, constituting the medical and surgical staff of the Omaha Hospital and Deaconess Home, wish to state, in reference to an item which appeared in the MEDICAL RECORD of August 28, 1897, under the title of "Hospital Enterprise," that they are in no way responsible, directly or indirectly, for the appearance of the circular referred to in said item. Said circular was prepared by the members of the board of trustees, and by them ordered to be mailed to every Methodist minister within a certain radius of Omaha, without consultation with or the knowledge of any member of the staff. The clerk, in accordance with her instructions, began mailing the circular, when accidentally a member of the attending staff discovered the nature of the mail matter, and after his remonstrance, and after only a small number had been mailed, its further distribution was promptly discontinued and the remainder destroyed.

We therefore desire in the most public manner possible to express our most emphatic disapproval of said circular.

W. O. BRIDGES, M.D.,
HAROLD GIFFORD, M.D.,
A. F. JONAS, M.D.,
W. S. GIBBS, M.D.,
J. M. AIKIN, M.D.

The Vagina when washed out with sublimate or carbolic solution in strength sufficient to free it from germs will become dry and chapped.—DÖDERLEIN.

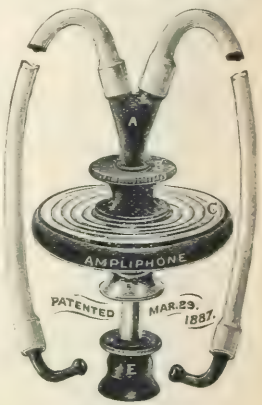
New Instruments.

THE AMPLIPHONE—A NEW INSTRUMENT DESIGNED TO REPLACE THE ORDINARY STETHOSCOPE.

BY J. H. CLARK, M.D.,

[illegible], N. Y.

SOME few weeks ago my attention was called to a new instrument which had but just made its appearance before the medical public, and being interested in any appliance, device, or means by which physical diagnosis may be made more simple and at the same time more correct (and as well a bit curious) I secured one of the instruments, which I have used for perhaps six weeks with results which have been highly satisfactory in nearly if not quite every case: in fact it has developed a condition of affairs in several instances which has been of the greatest importance not only to the examined but to the examiner as well; and thinking others might be interested, I venture to report the result of my experiments with this latest addition to the list of stethoscopic instruments.



The instrument consists of two aluminium diaphragms of two and a half inches in diameter. The metal, which is extremely thin, is corrugated in circular lines. Between the diaphragms is placed a brass ring, about a quarter of an inch wide, into grooves in which the edges of the diaphragms are spun or pressed. An air chamber is thus left between the inner convolutions of the diaphragms. Projecting from the upper diaphragm is a metal stud, covered with hard rubber, for convenience in handling. Through this stud passes a tube one end of which is attached to the tubing which carries the sound to the ear, as in the phonograph. This tube runs down to the air chamber between the two diaphragms. To the centre of the opposite diaphragm is attached a bell-shaped terminal, through which a tube runs to the outer surface of the diaphragm. This cup-shaped terminal is applied to the locality from which the sound is supposed to emanate. An extension piece is provided to facilitate the handling of the terminal in certain cases by the practitioner. The whole appliance weighs about two ounces and can be carried in the pocket.

The following cases coming under my observation and in which the ampliphone was used may be of some interest, viz.: Three cases of pregnancy, in two of which the diagnosis was doubtful owing to the absence of certain symptoms and the uncertainty of others. The doubtful cases were examined carefully with several varieties of stethoscopes without the fœtal heart or uterine souffle being heard until the ampliphone was tried, when both were recognized; not only was the diagnosis confirmed but a fairly correct idea of the position was secured.

The third case was one in which circumstances did not permit the removal of the clothing, but the sounds were transmitted with remarkable clearness through

the ordinary dress worn by the patient and heard without the slightest difficulty.

Two cases, one of organic heart lesion complicated with emphysema, and the other of uræmic coma, in both of which the respiratory murmur was so greatly exaggerated that the heart sounds were rendered indistinct, furnished an opportunity to test the pulse with the ear as well as the finger, and in both cases the sound was transmitted with sufficient strength and clearness to enable it to be counted with ease, while its volume and character could be determined without difficulty; there were two other physicians present on this occasion, both of whom listened and expressed their satisfaction at the result.

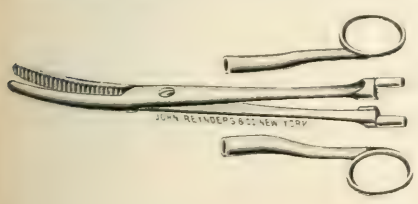
In a case of lobar pneumonia the tubular breathing seems magnified or intensified very considerably by this instrument as compared with the ordinary stethoscope, while the whistling râles of emphysema, the coarse rattle of bronchitis, and the friction of pleurisy are carried to the ear so pronouncedly louder that one with difficulty realizes what he hears. I believe this little instrument possesses several decided advantages over other appliances for a like purpose and that its field of usefulness is of the widest range; in the hands of men of skill and intelligence it will be of the greatest assistance in diagnosing and treating disease.

HYSTERECTOMY FORCEPS.

By W. R. BROOK, M.D.

For two years and more, I have been using a kind of forceps in my vaginal work which seem to have advantages over and to be devoid of objectionable features which attach to other forceps. They are very easily applied; and the forceps placed to secure the uterine arteries are scarcely felt to be in the way while the manipulation of the higher structures is being performed. Furthermore, the forceps without their handles, when moved by the operator's hands, exercise less leverage upon the stumps than do longer instruments. The catch is perfectly secure, and is made in such a way that the points of the bite meet when the first catch is closed.

After the operation is completed and the forceps are surrounded by a gauze dressing, the mass of instruments does not interfere with the use of a catheter and does not prevent the patient turning about when restless: there are no long handles to be jarred by her thighs. In removing the forceps the keys are applied and the instruments released one by one. I have stipulated with the makers that these instruments shall be made of tempered steel from one end to the other. If there be flaws in a pair they will break in their application, and not bend and twist under the strain and admit of



bleeding. They render the after-conduct of hysterectomy cases simpler, and lessen the discomfort incident to the operation. They have been so thoroughly tried that I feel I can recommend their use to the profession.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 25, 1897:

	Cases.	Deaths.
Tuberculosis	1[illegible]	[illegible]
Typhoid fever	3[illegible]	[illegible]
Scarlet fever	67	3
Cerebro-spinal meningitis	0	1
Measles	25	2
Diphtheria	[illegible]	2
Laryngeal diphtheria (croup)	2	2
Chicken-pox	5	

Earth-to-Earth Burial.—At the recent nineteenth annual meeting of the Church of England Burial-Reform Association, Dr. Toore, on contributing a paper on "Earth-to-Earth Burial," laid stress upon the fact that the earth was a source of life in this world and the necessary recipient of all dead organic matter. With due regard to scientific principles it was quite possible to carry out the rite of burial, not only without harm, but with a certain amount of benefit to the living. If bodies were buried in the upper layers of the soil, and in contact with it, a complete disappearance of the organic matter would be effected in about twelve months. A cemetery scientifically used and planted formed an open space which was invaluable to crowded centres of population, and by affording nourishment to trees and other green-leaved plants had the power of freshening the air. The simplification of funerals and scientific burial, so that the ground might be used a second time after a certain interval, were both important steps in the advance of sanitation.

The Origin of the Word "Deadhead."—Fifty years ago the principal avenue of Detroit, Mich., passed close to the entrance of the plank road leading to Elmwood Cemetery. As this cemetery had been laid out some time previous to the construction of the road, it was arranged that all funeral processions should be allowed to pass along the latter toll free. One day as Dr. Pierce, a well-known physician, stopped to pay his toll, he observed to the gate keeper: "Considering the benevolent character of our profession, I think you ought to let us pass free of charge." "No, no, doctor," replied the gate keeper; "we can't afford that. You send too many deadheads through as it is." The story travelled around the country, and the word "deadhead" was eventually applied to those who obtained free admission to the theatre.

The Physical Effects of Music.—Experiments on the influence of music upon respiration, recorded by MM. A. Binet and I. Courtier in the *Année Psychologique* for 1897, indicate that musical sounds, chords, and music in general, as a sensorial excitation independent of all suggested feelings, provoke acceleration of respiration, increasing as the movement is more lively, without disturbing the regularity or augmenting its amplitude. The major mode is more exciting than the minor. The heart is similarly affected. The distinction between sad or solemn and lively music appears to be for the most part wholly theoretical, and hardly squares with the complexity of the musical emotions produced by the melodies with the infinite shadings suggested by the ideas of the libretto. The authors, however, infer from their researches that the acceleration of the

heart and of the respiration was not so marked during the hearing of sad pieces as in those in which joy and high excitation of musical emotions prevail.—*Ayer's Sarsaparilla Monthly.*

The Antivivisection Pledge.—"I pledge to never knowingly employ a physician practising or upholding vivisection unless in case of immediate danger or death." The antivivisectionist is evidently as great a foe to grammar as she is to any other science.

"Cock-Matrons."—Subsequent editions of dictionaries of the English language will have to find space for a new compound word, namely, "cock-matrons." Possibly some of our readers will be curious to know whence this term originated. We will enlighten them. The term heads an editorial article, which appeared last week in a contemporary published in the sole interests of nurses, called the *Nursing Record*. This journal, as is generally known, is conducted by a lady, who may be assumed to know something about matrons, inasmuch as she was once matron herself to a large general hospital in London. The article in question altogether disapproves of men having anything to do with the appointment or selection of the nurses at hospitals. "It has," says the writer, "been proved over and over again that man is rarely a competent judge of the capacities of women for work. Smartness, good looks, a taking manner, or a pretty bonnet have often turned the scale in favor of a candidate for a post when the appointment is made by men." Upon these grounds, then, "cock-matrons" must be condemned as impracticable hermaphrodite officials, whose judgment would always be certain to be biassed and at fault. But perhaps the best way of dealing with this subject is to discuss the objectionable species of "cock-matrons" from a morphological point of view. It is then that the matter becomes very interesting, as those having a taste for morphology will soon discover. Upon the whole, however, we prefer to leave to our readers the pastime of working out for themselves the various problems which it suggests.—*Medical Press*, August 4, 1897.

Health Reports.—The following statistics concerning cholera and yellow fever have been received in the office of the United States Marine Hospital service during the week ended September 25, 1897:

			Cases.	Deaths.
[illegible]	[illegible]	August 21st to 28th	[illegible]	2
[illegible]	[illegible]	September 18th	[illegible]	[illegible]
[illegible]	[illegible]	September 19th	[illegible]	[illegible]
[illegible]	[illegible]	September 20th	[illegible]	[illegible]
[illegible]	[illegible]	September 21st	[illegible]	[illegible]
[illegible]	[illegible]	September 22d	[illegible]	[illegible]
[illegible]	[illegible]	September [illegible]	[illegible]	[illegible]
[illegible]	[illegible]	September [illegible]	[illegible]	[illegible]
[illegible]	[illegible]	September 23d	1	[illegible]
[illegible]	[illegible]	September [illegible]	[illegible]	[illegible]
[illegible]	[illegible]	September [illegible]	[illegible]	[illegible]
[illegible]	[illegible]	September 23d	1	1
[illegible]	[illegible]	September [illegible]	[illegible]	[illegible]
[illegible]	[illegible]	September 14th	[illegible]	[illegible]
[illegible]	[illegible]	September 15th	[illegible]	[illegible]
[illegible]	[illegible]	September 16th	[illegible]	[illegible]
[illegible]	[illegible]	September [illegible]

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Original Articles.

THE CHANGE OF LIFE AND THE DIAGNOSIS OF CARCINOMA UTERI.[1]

BY EDWARD J. ILL, M.D.,

NEWARK, N. J.

UPON inquiry among my medical friends what subject for an address might be of sufficient interest and importance to the county society, I found the most diversified opinion. The gentlemen all agreed in this, however, that the early diagnosis of carcinoma of the uterus was frequently very difficult and often gave them much annoyance. Having occasion to look over my notes of cases of cancer of the uterus, I was astonished at the number of patients who came with the opinion that they suffered from symptoms of the menopause. Thus this subject seemed to me the proper one for discussion. Cases are often referred to me months after the first symptoms, these symptoms being spoken of as belonging to the change of life. Of course, operative interference cannot be thought of, the disease having gone beyond the limit of the uterus, much to the disgust of the family of the patient, and often to the professional and business detriment of the attendant, not to speak of the misery of the poor sufferer, when there might have been a chance for cure. Somewhere I read this very true statement: "The best therapy which a woman with carcinoma of the uterus can receive at the hands of the practitioner consists in an early diagnosis."

It is the duty of those who have family practice to give women some idea of the innocent symptoms accompanying the menopause; to teach them that the menopause means a cessation of the flow, not an increase, and to insist on an immediate examination if anything occurs which is not plainly and solely attributable to this condition. It will be better to err on the wrong side and make too many examinations. Nowadays, women rarely object when the matter is properly placed before them. I would, however, strongly disapprove of frightening the patient into an examination by threatening her with the word cancer. With that word one can get a woman to consent to almost anything.

I will not annoy you with a lengthy enumeration of the symptoms accompanying the menopause. A few, however, will be of value as compared with the symptoms of malignant disease. The chief factor that will interest us in this regard is the quantity, quality, and regularity of the flow of blood. By the change of life is understood that condition in which the woman normally and finally ceases to have a regular monthly bloody flow. The ideal change would take place if she gradually ceased flowing by longer and longer intervals. This, however, is rare, and she suffers more or less from irregular flow, at times anticipating and more frequently postponing. Usually the flow becomes more and more scanty, rarely excessive. When the latter, it is commonly due to endometritic changes, and frequently is found in women who were sufferers from some pelvic difficulty for years. Now and then there is no apparent cause, and I was once obliged to extirpate the uterus to save the patient's life. It was then discovered that a small polypus was the cause of the hemorrhage. Nervous symptoms are the rule, but rarely consist of more than vasomotor disturbances of the skin, hot flashes, profuse and sudden perspiration. Vertigo and palpitation of the heart are not infrequently met with. Now and then we see neuralgia, insomnia, and mental depression.

With the laity change of life means almost any abnormal symptoms, physical or otherwise, which a woman may have from the time she is thirty-five until she has reached sixty, so vague is the woman's notion of this dreaded time of life. It will be irrelevant to our subject to draw your attention to the peculiar atrophic changes going on in the genital organs with the normal cessation of menstruation, except, perhaps, that malignant or ovarian growths are not affected by the menopause; but fibromyomata commonly undergo retrograde changes by which they become smaller, and in several cases I have seen complete absorption take place. Now and then malignant changes have been said to take place in fibromyomata and ovarian tumors at this time of life. There is, however, nothing especially to characterize this change. After what has been said, the diagnosis of climacteric changes and disturbances should not be difficult. The prognosis is good, provided a careful examination has revealed no pathological changes in the uterus which would lead to a suspicion of malignant degeneration.

This brings us to the discussion of the diagnosis of carcinoma of the uterus. There are no symptoms characteristic of carcinoma of the uterus. Pain, hemorrhage, or other discharges are also factors in other ailments than carcinoma. It is here that we have committed grave sins of omission, because we have not insisted upon an immediate and thorough pelvic examination in a woman who presented symptoms referable to the genital tract in the time of life under discussion. We must start out with the knowledge that women at forty-five or fifty years of age do not flow excessively without local or general cause, any more than do women at twenty or thirty. In more than fifteen thousand gynæcological cases I have seen hemorrhage but three times at this period of life which could not be explained by some special ailment. There are predisposing causes in the chronic inflammatory changes about the uterus. Unfortunately, early symptoms of carcinoma of the uterus are not always so prominent as to induce the patient to seek timely medical advice. Nor should the doctor look for symptoms which do not come on until the later stages and often the last stages of the disease are reached. All this proves to be a great calamity for our women.

When a woman has a return of a protracted bloody flow anywhere after six to ten months from what was thought to be her last menstruation, our suspicion must be directed to a probable malignancy as a cause. In fact, we shall rarely find anything else if such a return takes place two years or more since the last period. Now and then a mucous polypus is found to be the cause. Besides this bloody

[1] President's address, read before the annual meeting of the Essex County Medical Society, April 6, 1897.

flow, a constant serous or sero-sanguinolent discharge is almost invariably present. Unfortunately, however, this is not always an early symptom. These few symptoms alone make an examination imperative. Greater difficulty, however, is experienced in detecting the earlier symptoms in women who are still in the active period of sexual life. Here we rarely find more than an increase in the quantity of menstrual flow, possibly a little prolonged. This is most frequently due to an accompanying hyperplastic endometritis. A little later the flow will be more frequent and soon it becomes constant.

Carcinoma of the body is more apt to present these symptoms than carcinoma of the cervix. With carcinoma of the cervix, often the earliest symptom which brings the patient to the doctor will be a show of blood after marital intercourse, severe exertion, or a constipated movement. When we once get irregular hemorrhages, and by hemorrhage I mean excessive flows of blood, we have already reached the stage of erosion or breaking down and have generally passed the time when operative interference offers a fair chance. Pain and cachexia are always late symptoms. I am sorry the word "cachexia" was ever invented—so many rely on the appearance of this symptom before they dare to diagnose cancer. As has been said, pain also is a late symptom and shows itself when the disease has reached beyond the uterus proper. There is an exception to this in many cases of carcinoma of the body of the uterus, when an intermittent, agonizing pain, most frequently late in the afternoon or toward morning, is recognized early. Foul odors are not pathognomonic of malignant disease. They are a late symptom and should not be waited for. They come on comparatively early in the unclean and those who have been treated locally, from the fact that air with its decomposing germs has entered the passages.

You will see from what has been said that an early diagnosis from subjective symptoms belongs to the difficult problems. With these subjective symptoms we must consider the objective as presented by thorough and exhaustive physical examination. It is not in the province of this paper to go into the fundamentals of a pelvic examination; let it be sufficient to touch on those points which at the bedside will make the diagnosis highly probable. For convenience' sake malignant disease of the cervix and corpus will be spoken of separately.

Of the several forms of cervical carcinoma, the cauliflower growth will give us the least difficulty in diagnosis. The uneven, friable, and easily bleeding surface projects so far from the cervix itself that the cervix proper can hardly be reached. The mass fills up a considerable portion of the vagina. This condition is quite pathognomonic, and is easily distinguished from the hard solid polypus or the hypertrophic cervix. The superficial surface of the excrescence is eroded and covered with a grayish dirty mucus.

The ulcerating epithelioma of the cervix is easily known by its distinct hard edges, the hardness extending somewhat beyond the ulcerating portion. The bottom of the ulcer is remarkably hard, but so friable that a curette will easily remove a large piece. A tenaculum will find no hold in it. In the speculum it appears as covered by a dirty grayish matter. The ordinary erosion, on the contrary, appears of a red color, has no infiltration of its edges, and is smooth and velvety to the touch. The curette will make little impression on it, except to remove a very superficial layer.

I will not detain you with the differentiation of the rare tuberculous ulcer.

The syphilitic ulcer will be recognized by its general symptoms.

When there is any doubt excision of a portion of the ulcer should be made and subjected to a microscopical examination. It is always well to remove some healthy tissue with the diseased structure for this purpose, and is very satisfactory. Scrapings, on the contrary, are most unsatisfactory.

When carcinoma of the cervical canal exists it will show only when the cervix is dilated and the curette produces the friable masses. By palpation the cervix is found enlarged, and hard, deeply situated nodules are felt. Cervical carcinoma will have to be differentiated from fibromyomata, which will not be difficult.

Carcinoma of the body cannot be diagnosed in its earlier stages by palpation. Here again the curette, besides the subjective symptoms, must tell us the true state of affairs. Carcinoma in this location offers the very best chance for permanent cure by operation. I would rather diagnose this condition by the curette than by the microscope even in the hands of the expert. The microscope can rarely be relied upon in the examination of scrapings. It will often mislead and will be of value only when it gives positive results in connection with other symptoms.

Of all cases of carcinoma that came into my hands hardly one in five was presented sufficiently early for operation. When we consider that only twenty-five per cent of those operated upon remain free from recurrence, we can easily understand that but one case in twenty of those coming to the operator remains well, a most discouraging aspect were it not for the fact that even this one would prove fatal were it not for the interference. You will understand, then, why I dare to urge you to employ every means for an early diagnosis and a possible operation; and, if you will permit me to say it, the diagnosis of change of life must be the very last, and after every other explanation of the symptoms, both subjective and objective, fails. The deaths from operation have been lowered to a very small number, and we can conscientiously recommend an early operation, even though it offers so small a chance for permanent cure.

IMPERFECTIONS IN INTRA-ABDOMINAL DIAGNOSIS.

BY BYRON B. DAVIS, A.B., M.D.

[illegible]

THAT progress in recognizing intra-abdominal disease is being made is certain. That perfection has been reached the most rashly optimistic do not claim. For if the subject is looked fairly in the face, all cant laid aside, self-glorification suppressed, and the question put squarely: How many of the last twenty operations have been destitute of surprises in the operative or postoperative findings?—the honest answer will shock our lay friends and, if he is not accustomed to look at the subject from this point of view, appall the operator himself.

An accurate and complete diagnosis beforehand is important, because then only can the operation be planned and executed in the manner which will give the patient the best chance for life, conserve blood, hasten the work, save tissue, and avert shock. In the great majority of cases unfortunately the diagnosis is correct in the rough only, unsuspected conditions being too often found. Supposedly benign obstructions at the pylorus are found to be malignant; disease of the uterine adnexa is found much more serious than was anticipated, rendering the operative difficulties greater and much increasing the dangers: sometimes, happily, ovaries and tubes supposed to be irreparably

[illegible] the Western Association of Surgeons and [illegible] Topeka, Kan., December 24, 1897.

diseased are found merely to be imprisoned by adhesions and no sacrifice of the organs is demanded; and very often after a carefully planned operation the expected relief does not come, the symptoms not having been correctly interpreted.

It seems to be a matter of pride with some, especially in pelvic disease, to make their diagnosis from the physical examination, paying only slight attention to the patient's past history and present subjective symptoms. The woman is overshadowed by her pelvic viscera. Men who do this most are likely to meet with many unpleasant surprises. The palpable lesion is often the least part of the disease.

In approaching a case of suspected abdominal disease, it is necessary to have more in mind than a few cardinal diagnostic points. Advantage must be taken of every resource which can be enlisted having even a remote bearing upon the case. A little point previously overlooked has been known to clear up an obscure case and make it so plain as to occasion wonder at the former difficulty. To be satisfied that a case is one for operation is not enough—the merest tyro can do that; but the wide-awake surgeon is content only when by careful exclusion his diagnosis has been brought down to an absolute certainty. The man who attempts this always, even though such niceties of distinction are often of no practical value, will soon find that his operative surprises are becoming rare.

The very imperfect and often misleading histories obtained from patients are a frequent cause of error. Some wilfully misrepresent by exaggeration or suppression of facts; more mislead because of weak powers of observation or inability to make a clear statement. One patient with slight symptoms will lead her physician to suppose her to be a great sufferer; another with more stoicism will make light of a desperate condition. Most of the chronic cases are migratory and do not remain long under the observation of any one man. A new man is then "tried," and he takes up the case *de novo*, losing the benefit of previous observations. Before he has been able to get the case well in hand, the patient, true to her instincts, has often passed on to the next physician.

If each person's medical history were made a matter of record, the same as a title to a piece of real estate, the patient always presenting an abstract when consulting a new doctor, it would be a great aid. The labor of such a system would be slight when compared with its advantages. No one would then think of consulting a physician without presenting a medical history as formulated by previous attendants, and many costly blunders would be thus avoided.

At a recent meeting of the Brooklyn Gynæcological Society, the case was reported of a woman dying of slow hemorrhage from a ruptured tubal pregnancy, in which three prominent gynæcologists had had no suspicion of the real condition. One of them stated that if he had been in possession of facts acquired by another physician consulted a short time before, the diagnosis would have been cleared up and the woman's life might have been saved. It is evident how such a record as has been suggested would have been of great service.

The diagnosis of extra-uterine pregnancy, although sometimes extremely easy, is often beset with the greatest difficulties. To distinguish it from pyosalpinx or appendicitis frequently requires the most careful weighing of evidence on the part of the surgeon. After painstaking effort to reject all sources of error, even then the scales sometimes tip the wrong way. In a recent case of my own, after a thorough study of all the symptoms and as rigid a physical examination as the condition of the patient would permit, I could not make a positive diagnosis. The final conclusion was that appendicitis was the most probable lesion; a ruptured tubal pregnancy with slow hemorrhage, there being a slowly rising temperature, came next in probability; and it was not possible entirely to exclude pyosalpinx. The other men who saw the case were equally mystified. The operation revealed the presence of slow hemorrhage from a tubal abortion.

Presence of a surgical lesion of the kidney has been the source of much diagnostic uncertainty, it being often difficult or impossible to determine which kidney is diseased or whether both are implicated. Since the cystoscope and ureteral catheter have been perfected, the accurate diagnosis of kidney diseases has been greatly simplified. In like manner chemistry has come to our aid in gastric lesions. Only a beginning has been made in this matter, but promise is made of much development along these lines. When it is possible to make an early and accurate diagnosis of cancer of the stomach, surgery for its relief can be relied upon to be followed by better results than the past has given.

The region of the gall bladder and ducts is also of great interest to the abdominal surgeon. Here, as well as in some other regions, some of the recent surgical work has been more brilliant than the diagnosis has been refined. It is yet no uncommon thing to explore for stones in the gall bladder or ducts, and find disease of the hepatic flexure of the colon or cancer of the pylorus, and sometimes to find nothing at all. An abnormally long transverse colon, as pointed out by McGraw, doubtless figures frequently in these cases. As he states, if the transverse colon is too long it must bend up or down; it cannot bend up, therefore it bends down at the middle, assuming a V-shape. When fæces accumulate at the point of the V, the bowel becomes heavy enough to put the hepaticoduodenal ligament upon the stretch and twist it sufficiently to occlude the common duct, and symptoms analogous to those of gall-stone obstruction result. McGraw suggests that when doubt exists, if the knee-elbow position relieves the pain, the symptoms are due to an abnormally long transverse colon and not to disease within the gall ducts. In all cases of suspected gall stones, one will do well to keep this abnormality in mind.

In addition to the necessity of making a fairly accurate diagnosis of the pathological condition present in intra-abdominal disease, it is still more important to determine whether the symptom complex for which the patient presents himself is dependent upon the lesion found. Will an operation be followed by enough relief to warrant the operative risk, or will the symptoms be made worse or remain unchanged? This, I take it, is one of the most important questions with which the abdominal surgeon has to deal. A retroverted adherent uterus sometimes produces severe symptoms; sometimes this condition exists for years with the individual in robust health. Severe symptoms may exist in a patient with a fixed uterus, and the symptoms be due entirely to the condition of the uterus; sometimes the uterus has nothing to do with the symptoms. A perfect diagnosis depends more upon the proper interpretation of the symptoms than upon the accurate estimation of the size, position, and degree of fixation of the uterus. And so it is with salpingitis, ovaritis, and a host of other palpable lesions.

Movable kidney is very frequent—being present, it is said, in one of every five to seven women. Sometimes it produces symptoms; usually it does not. When unpleasant symptoms are present, they may be due to the movable kidney or to something entirely different. The ability to make a sharp distinction between symptoms due to movable kidney and those due to other causes, and the inability to make such

distinction, mean all the difference between brilliant results on the one hand and the most bitter disappointment on the other. Many an operation has been performed for anchoring a movable kidney or a prolapsed uterus, when the symptoms were due to general abdominal ptosis, and of course the symptoms were not relieved.

But, do the best one can, it often happens that a full and accurate diagnosis is impossible until the operation is in progress, and here there are also many vexatious questions. In a given case of gall-stone disease, will a simple cholecystotomy be best, or a cholecystenterostomy, or is the trouble due to the ball-valve action of a stone in the common duct, which can be removed by an incision into the duct followed by suture and drainage? Must this tube and ovary be sacrificed, or will the patient's best interest be subserved by puncturing the cysts of the ovary, breaking up adhesions, and straightening the tube, and perhaps anchoring in a new position? Should this suppurating kidney be removed, or is it worth while to incise and drain? These and many other questions are constantly coming up during the progress of the majority of abdominal sections, and the operator's mind must be both swift and accurate, else he will be guilty of many surgical crimes.

In conclusion and by way of summary, it is desired to urge:

1. Great care in getting at an exact anatomical diagnosis, calling in every resource which can have the remotest bearing upon the case, whether it be in the patient's history, the tactile examination, the use of chemistry, physics, or instruments of precision.

2. To work out carefully the relationship between the palpable lesion found and the symptom complex. Is it a relationship of cause and effect, or a simple coincidence? Everything depends upon the correct interpretation of the symptoms.

3. When the operation is in progress, swiftly and correctly to weigh the evidence as to whether the results will be better with sacrifice of an entire organ, or will it be possible to preserve it in whole or in part. Is it better to proceed with the operation, or will the patient's best interests be protected by closing the abdomen, leaving the condition unchanged?

WHAT ARE THE MUSCÆ VOLITANTES? AN ENTOPTICAL STUDY.

BY FRANK P. PRATT, M.D.,

[illegible], U.S.A.

THE histology of the vitreous body is a subject upon which the leading authorities differ. This is, no doubt, due to the extreme difficulty experienced in preparing sections for microscopical study. In fact, the possible changes in structure, due to hardening and preservative fluids, have entered largely into the consideration and modified the conclusions of many investigators. Whether the vitreous has an inclosing hyaloid membrane or not, whether the more or less fluid substance proper is sustained in a transparent reticulum of fibres, or distinct membranous walls inclose it; whether three distinct cells are found, or whether they are merely different forms of the same cell or leucocyte; whether it has distinct nutritive vessels or not—are all questions which have ardent advocates on one side or the other.

Probably the latest and most widely accepted views are as follows: The vitreous is a clear, more or less fluid substance, inclosed in a delicate, structureless hyaloid membrane; throughout its substance runs an equally delicate reticulum, or felted work of fibres; its central canal or lymph channel begins at the papilla of the optic nerve, and extends to the posterior pole of the lens. The matured vitreous contains no vessels, but obtains its nutrition from the surrounding structures, principally the ciliary vessels. Retzius says: "Under high amplification, the entire tissue (vitreous substance) is resolved into a feltwork of exceptional intricacy, composed of the finest fibres, which cross one another in various directions and here and there join in narrow nodal points, without, however, constituting network." Retzius has also observed peculiar glistening spherules or granules in many of the fibres. He is in doubt as to their nature. Piersoll believes that not only are these spherules due to the action of the reagents used, but that some at least of the densely felted delicate fibrillæ seen in certain preparations are also due to the same cause.

Retzius rejects as untenable the supposition that "the presence of the spherules is attributable to the action of reagents employed, since the intervening ground substance remains homogeneous." It is the purpose of the writer to offer evidence, gained through an entoptical study of the so-called muscæ volitantes, in support of the statement that a "feltwork of exceptional intricacy" does exist, but that this appearance of the fibre, so aptly described by Retzius, is largely due to post-mortem changes; that the spherules noted by him in the so-called fibres are not due to reagents employed, as claimed by Piersoll, but are clearly histological elements of the vitreous; that the muscæ volitantes, often described as resembling a string of pearls, when seen entoptically under proper conditions resolve themselves into what appear to be vessels with well-defined walls, which contain within their lumen corpuscles or spherules; that the general arrangement of these vessels answers to the description of the "felted fibres" of Virchow, Henle, and Retzius; that if these are vessels at all, which seems probable, they are the lymphatic vessels of the vitreous substance.

Most writers, when describing the macular region of the retina, point out how the vascular arrangement of this region may be seen entoptically. As this image will be the starting-point in our investigations, we will consider it first. From the trial case take the metallic disc with central aperture, apply the disc to the right eye, so that the puncture will be opposite the pupil; look steadily at the blue sky, or a luminous cloud, while moving the disc rapidly from side to side. Presently a distinct picture of the fovea centralis with its surrounding network of capillaries will be seen. If the movements are skilfully made, even the beginning venous radicles in the immediate neighborhood may be clearly made out. The veins are dark, the rest of the picture has a bluish metallic lustre. No capillaries appear over the fovea, but its surface is covered with exceedingly fine, apparently rectangular tracings, resembling closely the delicate tracings on a diatome. These lines appear wavy. This is due, however, to the motion of the disc, as the wave motion changes its direction whenever the motion of the disc is changed. When a circular motion is given to the disc, the fovea region shows a tessellated arrangement, much as it would appear if we were viewing the surface of the cones of this region in a microscopical section.

As stated in a former paper,[1] the cones offer little or no obstruction to the passage of unchanged light vibrations, which pass on through them as through the other histological structure, and, like the latter, cast their shadows upon the pigmentary epithelial layer. It thus appears probable that we view here the image of the cone cells. If these tracings on the surface of

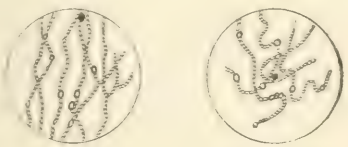
[1] *The Medical Record*, date 1897, "What are the Functions of the Rods and Cones and the Pigment Epithelium Layer of the Human Retina?"

the fovea have been hitherto described, it has escaped the notice of the writer. The capillary network about the fovea greatly resembles a finely spun spider web with its centre removed.

Now stop the motion of the disc and the image will immediately disappear, but when the axis of vision is suddenly changed and again fixed on the cloud fine fibrillary particles containing bright spherules will be seen, gradually settling down in the field. When these are discovered, renew the motion of the disc; the retinal image will again appear, and between it and the observer will be noticed the floating fibrillæ. It thus becomes evident that they are not in the retina; therefore, they are internal to it, and, as they are capable of motion within certain well-defined limits, as will be presently shown, they must lie in the vitreous.

For purposes of more accurate study of these so-called fibrillæ or muscæ, we have recourse to the microscope, not because of any amplification to be derived therefrom, but for its convenience in regulating the amount and quality of light admitted and conveying the rays to a point close to the cornea. Use a one-inch eyepiece and either a one-twelfth-inch objective or the centrally perforated metallic disc; they answer equally well, as the object is to admit divergent rays from a luminous point situated close to the cornea. The larger the opening in the disc, the less distinct the image, so that, if no disc or objective is placed over the farther end of the tube, the field appears comparatively clear. No fibrillæ are discovered. A strong steady light must be used; artificial light is, perhaps, preferable. When thus viewed, it will be seen that the floating particles, which at first resembled a string of pearls or fibrillæ containing spherules, resolve themselves into what appear to be distinct vessels, with well-defined walls, probably composed of indefinite protoplasmic substance. In one of the larger vessels seen by the writer, the walls showed a thickness of about one-half the diameter of the contained corpuscles. This was shown by two indistinct lines running parallel with the axis of the vessel, the intervening substance being of slightly different refractive index than the vitreous fluid (Figs. 6 and 7). Most of the vessels do not show this thickness of walls, a single dark line alone being seen. The calibre of the vessels is of sufficient size to accommodate the diameter of a single cell; therefore the cells fill the vessel in one layer. The cells in each vessel appear to be all of the same size, but some are bright and stand out prominently in the field, sometimes two or more lying in apposition; then a space equal to the diameter of from two to twelve cells may intervene; this space being filled with corpuscles much dimmer in outline but of the same character. After careful and repeated observations, it cannot be definitely stated that the cells have either active or passive motion. This may be due to the fact that these vessels cannot be fixed, but must be studied by indirect vision. The vessels seem to be perfectly flexible, bend freely in all directions, the bend occurring where the corpuscles touch, and in this resemble a string of pearls. The field impresses the observer as being a transparent fluid mass of great depth, throughout which float the vessels, closely corresponding to the description by Retzius of the felted fibrillary arrangement seen in prepared specimens. Especially is this true after violently agitating the intra-ocular contents by rapid movements of the eyeball, and then fixing on a certain spot in the field. The first impression is that the vessels are perfectly free in the vitreous, crossing, interlacing, and branching in all directions and changing their position with every movement of the eye. On closer examination, however, it will be seen that while the motion is apparently free each vessel is limited to a certain and definite portion of the field, so that it can be studied repeatedly after an interval of days or weeks. The sensation of depth is given by a vessel passing in a more or less straight course across the field from above downward to about the middle of the lower half, then turning upon itself, passing and repassing in a tortuous manner across the main vessel, but diverging from it toward the observer or by the principal vessels in the field, passing in front of or behind others that grow dimmer as they recede. Here and there a bright corpuscle will stand out clearly in the field, giving the impression that it is outside of the vessel, but if care is given to the examination the hazy outline of the inclosing vessel will usually be made out. These corpuscles always move with the other vessels and cell elements, and reappear repeatedly in the same part of the field. The writer has discoverd no cells outside the vessel walls. The vessels do not branch in the field, nor, as far as can be made out, join a nodal point.

Fig. 1 represents the general direction of the vessels at rest, with the head in the normal position and the eye fixed on the dot near the upper tangent. After a person has looked rapidly down, then up, then fixed the dot, the vessels after a short interval move rapidly downward, then upward, the latter movement continuing some time after the eye is fixed; then they



stop for an instant before again sinking rapidly downward in the field, the motion gradually becoming slower until the vessels assume the general appearance here represented, remaining practically stationary while the eyeball is absolutely fixed. Any excursion of the visual axis toward a vessel causes it immediately to recede, all the other vessels moving in the same direction. It will be seen that the vessels are arranged in parallel lines, with intervening clear spaces apparently from two to four millimetres wide. Several vessels, however, can be seen occupying the space here represented by one vessel, but they are at different depths in the vitreous, and they dimly cross and recross in front or back of the one shown here. If the head is now turned sideways, so that the outer angle of the right eye corresponds to the upper part of the field, the vessels gradually change their position, first appearing mixed in all directions, then bundles appearing at different levels, finally the vessels gradually straightening out and assuming much the same arrangement as shown in Fig. 1.

Fig. 2 represents a general mix-up after violent agitation of the eyeball and fixation on the central dot.

Figs. 3, 4, and 5 show a part of a vessel that was studied several hours with reference to the position of the bright corpuscles represented. No apparent change could be discovered. Changes in the shape and relation of the vessels, however, are evident.

Figs. 6 and 7 show the appearance of a single loop observed at intervals during three weeks. The corpuscles have nearly the same relative positions, but what appeared in Fig. 6 to be a loop with blind ends now appears continued on in the usual form until it fades away in the distance.

Figs. 8, 9, 10, and 11 show the behavior of a single vessel when the visual axis is moved, first, down; second, up; third, right; fourth, left. The up-and-

down movements are accomplished by changes and contortions of the loop, all taking place in a perpendicular direction. The lengthening of the vessel is at the expense of the loop, and *vice versa*. The main part of the vessel otherwise changes its position very slightly, moving *en masse* in the field, with its course tortuous or straight according to the movements of the eye. In the motion to the right, the loop passes rapidly to the right and is separated widely from the trunk. The opposite holds true of motion to the left. The loop passes and repasses between the observer and the main part of the vessel and its elements appear less amplified but more distinct, thus emphasizing the sensation of depth.

Now discontinue further consideration of these vessels for the moment, change the eyepiece from a one to a one-half inch, move the visual axis slowly up and down, and you will observe another system or layer of vessels that differ in no way from those first described, except that they are dimmer in outline, of

larger calibre, contain larger corpuscles, and lie closer to the light; that is, beyond the vessels first described and between them and the light. The general movement of these vessels, moreover, is opposite to that first described, so that when the eyeball is turned upward the vessels move rapidly downward and then ascend slowly toward their original position. This behavior of the two layers of vessels shows that the former lie in the posterior and the latter in the anterior part of the vitreous. Again resort to the one-inch eyepiece and place the eye about one inch from it. Then will be observed another image that differs entirely from those already described. It consists of an irregular stellate arrangement of fibres or markings that have no resemblance to vessels, and which contain no corpuscular bodies.

Fig. 12. This image is stationary and lies between the light and the last-described vessels. This the writer believes to be the image of the lens itself, seen entoptically, showing very accurately the arrangement of its various fibres or layers.

We have thus seen and studied the following structures:

1st. Three layers of the retina: (*a*) the fovea with the image of the cones; (*b*) the capillaries; (*c*) the veins.

2d. A layer of vessels in the posterior part of the vitreous, lying between the light and the observer and internal to the retina.

3d. A layer of vessels in the anterior part of the vitreous, lying between the light and the vessels mentioned above.

4th. The image of the lens lying between No. 3 and the light. Finally, by moving the eye back from the eyepiece a little and gently opening and closing the lids, floating particles of dust can be noted on the surface of the cornea, which with each movement of the lids move between the lens and the light.

Are these floating structures containing corpuscles vessels? If so, they must be one of two kinds, blood-vessels or lymphatics. That they are not blood-vessels is quite evident from the one fact that no circulation can be definitely discerned. If they are lymphatics, they are specialized to the vitreous and differ greatly from the beginning radicals of this system in the more solid tissues of the body. Indeed this might be expected of vessels that float more or less freely in the body they are designed to nourish. Blood moves in the capillaries about six or nine millimetres per second. This is estimated to be several hundred times slower than in the arteries. Lymph, in the largest vessels, moves about 4.5 mm. per second If it can be said that this stream is several hundred times faster than in the lymphatic capillaries, this, in connection with the fact that the vessels are usually moving and must be studied by indirect vision, may account for the statement that no corpuscular movements can be definitely noted. The blood after death largely leaves the capillaries. This no doubt holds true of the lymph also, and especially here in the eye as the blood pressure is removed and the tension of the eye is diminished, which condition would favor the transudation of both the lymph plasma and the corpuscles, it being probable that in the living normal vessels the leucocytes do not undergo amœboid motion.

The writer has endeavored to demonstrate these vessels, with their contained corpuscles, in freshly removed eyes, by the usual methods of injecting lymphatic capillaries, but thus far with negative results. If these observations are correct, the following conclusions may be deduced from them:

1st. That the so-called muscæ volitantes are normal to every eye, and become annoying only when there is sufficient bunching of vessels to offer noticeable obstruction to light rays.

2d. That they are not due, therefore, to hemorrhage, diseases of the retina, choroid, or ciliary body.

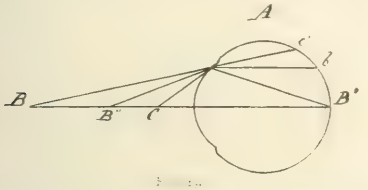
3d. That the felted fibrillæ containing bright spherules described by Retzius and others are in a measure due to post-mortem changes, the ante-mortem normal condition being that above described.

4th. That in all probability they are the lymphatic capillaries of the vitreous.

5th. That this feltwork of lymphatic capillaries sustains the semifluid vitreous substance.

It may be asked: How is it possible to demonstrate vessel walls and corpuscles in the vitreous, when the same cannot be demonstrated in the retina? When a persons looks at a pencil, light radiates from every point on the pencil, and the rays, focussed upon the pigment epithelial layer of the retina, form a true image. The size of this image is inversely proportioned to the distance of the object from the eye. Thus, the farther away the pencil is, the smaller the image, and *vice versa*. In viewing an object entoptically, however, a different principle is involved. No light emanates

from the object itself, but it comes from a luminous point inside the principal anterior focus. The rays that proceed from this point, therefore, are too divergent to be brought to a focus beyond the cornea, but still continue diverging to infinity. Therefore any object lying between the percipient element of the retina and the source of light will obstruct these rays, and instead of a true image an upright shadow will fall upon the retina. The closer the object to the light, the greater the shadow; the nearer to the retina, the smaller the shadow. The vessels and corpuscles in the anterior part of the vitreous should, therefore, be amplified in the shadow, while those that lie closer to the retina should be less so. The entoptical study of the ocular tissues verifies these statements. Fig. 13



illustrates the proposition. Let *A* represent a schematic eye with a single refracting substance; *B* and *B'* the visual axis—*B* the near point, *B'* the principal posterior focus. Light rays emanating from *B* will, by the aid of all the powers of accommodation, be focussed at *B'*. Let the light be brought gradually closer to the cornea, and their point of reunion recedes farther from the principal posterior focus until a point is reached where the rays are practically parallel, *b*. The posterior focus will then be infinity. The anterior luminous point, *B''*, is called the principal anterior focus. Now bring the light still nearer the cornea at *C*. The incident rays now become so divergent that the refracted rays *c'* do not reach parallelism, but continue diverging to infinity. Any object, therefore, that lies between the light and the retina will cast a shadow inversely proportionate to the distance of the object from the light. The nearer to the light, the greater the shadow on the retina and *vice versa*.

The difference in brightness of the corpuscles is probably due to the great flexibility of the vessel, allowing some corpuscles in a single vessel to be nearer and others farther from the retina. If the whole vessel were absolutely on the same level, we should expect the corpuscles to show equally well.

A SUGGESTION IN THE TREATMENT OF DIABETES.[1]

BY G. W. MURDOCK, M.D.

[illegible], N. Y.

I MAY state in the beginning that in presenting, as I intend to do, some brief notes of a case of diabetes I am fully aware of the liability of error in making deductions from the result of a single case. Knowing, however, as we all do, the extraordinary fatality of this disease in the young subject, I think that any method which will arrest it in even one such case is at least worth consideration.

To dwell a moment upon the average prognosis: Pavy says that he has not personally seen the recovery of a patient under twenty years of age. Lauder Brunton says: "When the disease occurs in patients under the age of twenty, few, if any, recover." Dr. Purdy says: "Under twenty years of age the disease is very fatal. Indeed, few recoveries are recorded." Many other authors might be quoted to the same effect.

The salient points of the case that I wish to present are as follows: Upon June 26, 1896, I was consulted by a lad of nineteen, who stated that for some weeks he had noticed that he was passing too much urine. He considered himself strong, had always a great appetite, and was a large meat eater. He had been under my care before with a troublesome dermatitis, and I had found it necessary to cut down his supply of meat very largely before I could cure it. I found that he was passing about six pints of urine daily. The first specimen gave a specific gravity of 1.040 and was loaded with sugar. He had lost a brother with diabetes, at nearly his own age, which added, if it were possible to add anything, to the gravity of his case.

I will not enumerate the details of treatment during the next three months. I did what is ordinarily done. I put him on the diabetic diet, and did my best, as we generally do, to arrange a sufficient variety, so that he should have enough to eat, such as it was. I tried one after another, alone or in combination, many of the best-known medicines, and the result was just about as it usually is in these cases. His urine was diminished in quantity, and the specific gravity fell to an average of about 1.302, but the sugar was always to be found, and he was evidently losing ground in spite of treatment—losing in weight, in strength, and in ambition. At that time I had privately little hope of any but a fatal termination, and I then determined upon a radical change of treatment in some way. While looking up the literature of the subject in search of new ideas, I was struck by a passage in Dr. Purdy's monograph, which I will quote:

"The beneficial effects of temperate eating in diabetes were prominently illustrated during the siege of Paris, as Bouchardat tells us that sugar entirely disappeared from the urine of diabetics, in whom up to that time it had persisted, even although they had been living on a carefully regulated diet."

Dr. Purdy accompanies this with some remarks on the evident value of temperate eating, but seems to me hardly to follow the proposition out to its logical conclusion. I reasoned that if semistarvation did such good, why not adopt it in practice? Instead of trying to find things that our patients can eat freely, why not cut the supply down to the strict necessities of the system? Acting upon this, I reduced my patient's diet list thirty-three per cent. at one stroke, without changing its quality or giving any new medicines. This was upon September 24, 1896, and it was followed by immediate improvement. In four days the urine became for the first time free from sugar, and it remained so for two weeks. Frequent slight relapses occurred, however, always traceable to imprudence in eating, until January 1, 1897, when I made a still greater reduction in his allowance of food and brought him down to the point of being ravenously hungry pretty much all the time. Under this regimen, improvement has been steady and great. Sugar disappeared at once, and has reappeared but twice since for brief intervals, each time being due to overeating. He lost a few pounds in weight at first, under the reduced food supply, but has now regained it and appears as well as ever. His appetite is very keen, but it is not the insatiable one characteristic of the disease, and he has now no unusual thirst. He passes now about forty ounces daily; specific gravity, 1.020 to 1.028.

How long this regimen will have to be continued I cannot tell, but probably a long time, with very cautious trials of more food. He is now allowed twelve ounces of meat daily, and six ounces of toasted white bread, with a small amount of selected vegetables and

[1] Read at the [illegible] annual meeting of the [illegible] Branch of the New York State Medical Association, held in Brooklyn on May 25, 1897.

fruits. He is taking some medicine, but rather as a placebo, and none that I had not given him before without notable result. Perhaps it will not be easy to carry this treatment out in every case, but if a young fellow clearly understands what depends upon it he will generally go through it pretty faithfully. My experience is that the more things we give our patients to do and to take, the more highly they esteem us.

I conclude then that the regulation of food with respect to quality only is not enough in diabetes. It seems to me that a diabetic's digestive and assimilative apparatus may be roughly compared to a mill which from some defect will grind certain kinds of grain better than others, but will grind well only a small quantity of any kind, and clogs up if it is fed too rapidly. If this reasoning is correct, we should, as I have said before, select the most favorable kinds of food, and then limit the supply to near the lowest point possible. It goes without saying that this doctrine will not be universally accepted. I saw an article in a prominent journal a few days ago, in which the writer argued against any restriction in diet, averring that it was useless, and therefore unwise. This is only one more illustration of the differences of opinion which men with practically the same sources of information will hold. I regret that I can report only a single case, but it chances to be the only one that has been under my personal care since adopting this line of treatment. Whether it would be successful in diabetes of advanced life I cannot say. I somewhat doubt if it would be so, but as the disease is then less fatal it does not so much matter. This case is still under treatment and observation, but I see no reason now why it should not go on to full recovery, and I have thought it worth presenting, even if incomplete.

RHINITIS ATROPHICA FŒTIDANS IN ITS RELATION TO DISEASES OF THE ACCESSORY SINUSES.[1]

BY THOMAS J. HARRIS, M.D.,

NEW YORK,

ASSISTANT SURGEON OF MANHATTAN EAR AND THROAT HOSPITAL; INSTRUCTOR IN DISEASES OF NOSE AND THROAT, NEW YORK POLYCLINIC MEDICAL SCHOOL.

Of the numerous forms of disease which present themselves to us as specialists, none is more annoying in its symptoms or more baffling in its results as regards complete cure than that form known to us as ozæna. Discussion of its true nature has engaged the attention of the best rhinologists for many years, without any settlement of the vexatious question. Nor do I come this evening with any idea of offering a settlement, nor, indeed, can I lay claim to do more in what is to follow than to state briefly the results of some of the more recent investigations on this subject. This paper will consist largely of a statement of the views held by Ludwig Grünwald.[2]

At the outset a clear understanding of what is today regarded as ozæna is in order. Ozæna may be defined as a peculiar individual disease of the nose, characterized by a chronic course and by the three symptoms of atrophy of the mucous membrane as well as of bone, secretion forming in crusts, and odor.

The common view, then, is one of an individual disease. This Grünwald strongly combats. He first states the inconsistencies in this theory. We find, first, conditions of atrophy and secretion, but without odor. This difficulty has been met by describing a disease, "rhinitis atrophica sine fœtore." Then it is the experience of every gentleman present to meet with cases presenting hypertrophy in certain spots next to well-defined atrophy. This is commonly met by the theory of B. Fränkel, that a condition of general hypertrophy has at first existed. A distinguished member of the section has, however, stated that he has never met a single case in which he could discover the previous hypertrophy, and to this statement I think we will all give our assent. With a definition such as given above, there is no proof that the same cause lies at the bottom of the atrophy and of the stinking crust formation. Any assertion like this permits the natural inference that the secretion proceeds from the diseased mucous membrane alone. This certainly is a deduction without proof. Even if we admit that the same actual conditions are met with, we have still to prove that these are the chronic causes of the picture and not accidental or consecutive appearances.

The consideration of each mark regarded by different authorities as characterizing the disease falls into two questions:

1st. Is this sign constant in all cases?

2d. Is there proof that the condition of the nose at the present time is the cause of the other appearances?

The results of the microscopic examination by different observers do not agree. Gottstein found in two cases fibrous degeneration of the mucous membrane, with partial infiltration and atrophy of glands and normal epithelium. Krause believes in the actual change of the epithelium into pavement cells and the accumulation of fat cells. Schuchardt found cicatricial disappearance of the mucous membrane. Seibert lays emphasis on the change from cylindrical into pavement epithelium and a cornification and decomposition of the raised-up lamellæ; while B. Fränkel, after seeing this cornification in many cases, found it absent in two. Finally, Réthe rests the nature of "ozæna" in changes in the glands and in fatty degeneration. Any uniform anatomical picture cannot be established from these investigations.

Secondly, the sum of all the conditions discovered in the nose does not answer our second question. The assertion that the altered mucous membrane gives rise to an altered secretion—namely, the characteristic malodorous crusts—is only an assertion. Authorities differ. E. Fraenkel regards the crusts as the products of an abnormal chemical synthesis of the secretion of the anatomically altered gland elements, and denies a purulent secretion of the atrophic mucous membrane; while Zuckerkandl, without giving any proof, speaks of a purulent nasal catarrh as the cause of the atrophy.

No single microscopical result proves to us that the secretion present proceeds from areas found altered, nor is it against the possibility that the deposit of secretion on the mucous membrane causes secondarily the change.

Grünwald next considers some of the common theories of the origin of ozæna.

I. The bacteriological theory: Loewenberg, in his "Kokko-bacillen," found a constant bacillus of ozæna, but proof that it caused the atrophy or crusts is lacking; nor did he once succeed in getting the odor in his cultures.

II. The heredity theory has many supporters. Many gentlemen here have seen whole families affected. That this is far oftener not the case we fail to bear in mind, and, if this were the case, proof of a genuine atrophy is still lacking. Further, Grünwald found, in five cases of ozæna in blood relatives, pus centres, chiefly in the accessory sinuses in each instance.

As a further proof of this heredity theory, Hagemann has asserted that he has found in all ozæna cases an abnormally short diameter of the septum from the nasopharynx to the tip of the nose, and an abnormally

[1] Read before the section on laryngology on the New York Academy of Medicine, May 26, 1897.

[2] "Die Lehre von Naseneiterungen," page 41 *et seq.*

deep nasopharynx. Grunwald has found that the deductions, however, differ according to the particular nationality investigated. Further, it is not the depth of the nose but its abnormal width which interests us; and we see abnormally wide noses with no malodorous crust formation, and narrow nostrils with such crusts. As regards the contention that in connection with ozæna a healthy condition of the adjacent regions is found, and therefore the atrophy must be primary, it is to be said that often the original causes of the atrophy vanish. In proof of this, the author cites two cases of marked atrophy with crusts associated with adenoid tissue, in which all crust formation and secretion disappeared after removal of the adenoids, but the atrophy remained. We can correctly speak of genuine atrophy only when an atrophy of the mucous membrane at a given time was followed at a later period by a deposit of crusts. This has never been shown.

The author now proceeds to study the question more carefully under the following three heads:

1. From where does the secretion proceed?
2. Why does it possess this offensive odor?
3. Why has it the form of crusts?

(1) Whence the secretion? With the exception of Michael's theory that it proceeds from the sphenoidal sinus, all authorities have agreed up to this time that it must come from the mucous membrane of the nose. Gottstein and Juratz assert that they have witnessed it born *in situ* in the form of minute globules. Grünwald states that after the examination of many cases he finally succeeded, as he thought, in discovering one case in which this occurred. More careful examination showed that this secretion proceeded out of both frontal and maxillary sinuses. Other observers had been undoubtedly deceived. A phenomenon had occurred similar to what can be daily seen in certain urinals washed with a flow of water. But as positive proof of this statement, one has only to tampon thoroughly all avenues of approach into the nose from the sinuses, to find a cessation of the secretion.

But the chief argument of all believers in the origin of secretion from the mucous membrane has been that autopsies by various observers have shown no serious trouble in cases of ozæna. Grünwald, disregarding quoted statements, has consulted the original reports in each case, and at length reviews the different cases as reported: Hartmann, one case; Krause, two cases; Fraenkel, six cases; Zuckerkandl, four cases; Harke, six cases.

As a result of his labors, fifteen cases of ozæna and one case of rhinitis atrophica sine fœtore are given in detail. Of these sixteen cases, eleven cases are shown positively to have had involvement of the accessory sinuses. Of the five remaining, in one the condition of the important accessory sinuses is not mentioned. In four the condition of other important areas, as of the nasopharynx, is omitted.

Turning now from any further consideration in this direction, the author rightly claims that the only positive proof is this: If the secretion is from the diseased mucous membrane, treatment of diseased areas elsewhere cannot possibly effect any cure. On the other hand, if disease of the latter is the true cause and involvement of the mucous membrane is only secondary, relief of secretion from these diseased areas must relieve the secretion. In line with this assertion, Grünwald makes the important statement that in the past five years no case of ozæna has been seen by him which did not fail to show some disease or diseased areas elsewhere than in the nose. A series of twenty-five cases is then given *in extenso*, showing in each sinus involvement or involvement of the nasopharynx. Of these, ten show complete cessation of all secretion under proper treatment of the diseased area, and nine show disappearance of odor with a change from crust formation to fluid secretion. These nineteen cases can positively be asserted to be due to focus disease. Three cases of the remaning six were not treated, and three he will not positively declare to have focus disease.

The great point for consideration rests on the question: Are these foci of disease the sole source of the secretion, or are they, as Zuckerkandl asserts, secondary to inflammation and disease in the nose? If the latter is the case, the secretion in the nose continues when the foci of disease elsewhere are healed. This in ninteen of the twenty-three instances was not the case. Therefore it can be justly stated that in these nineteen cases the mucous membrane, without the participation of the treated foci, had nothing to do with the secretion. If now we add the remaining six cases in which the conditions are so probable as to permit them being included, it can be asserted that it is proved that, for Grünwald's cases at least, the discovered foci of disease were not accidental but actual causes of the disease.

Bresgen then is quoted, who in eleven cases of ozæna found foci inflammation in every one. At the same time the author meets a very plausible objection suggested by Réthe's report, who in sixty-four cases found only two cases of sinus disease. The result will correspond with that obtained by many of the gentlemen present this evening. Grünwald's explanation is the great difficulty in the diagnosis of sinus disease in many instances. In his judgment many observers even to-day are overlooking sinus disease, just as a few years ago it was universally regarded as a most rare affection. He adds that in the last two years he has himself treated two cases for a year's time unsuccessfully before he recognized the presence of sinus disease. He gives the history of a case illustrating this difficulty in his own practice.

In conclusion, as a result of all these facts, he declares, on this first point of the origin of the secretion: 1st, that its origin from the mucous membrane of the nose is not at all proven; 2d, on the contrary, that proof of the origin from foci of disease in adjacent areas has been positive in a large series of cases. In another series the probability is very strong.

(2) Why does the secretion possess the peculiar odor? Grünwald is strongly of the opinion that the cause is purely mechanical. In proof of this, he states that those conditions the removal of which cause a disappearance of the odor must be the cause of the odor. These conditions are varied. In ten cases the establishment of free drainage for the pus removed the odor; here decomposition due to retention was the factor. In two cases removal of adenoid tissue served the same result. In one case the odor disappeared after a sequestrum was removed. In three cases it depended on crusts which continually reformed; in these three cases the fluid pus, as it proceeded from the sinus opening, was odorless.

The important question naturally suggests itself: What shall we say of those cases of atrophic rhinitis without odor? Here nature has given the same aid in establishing drainage that the surgeon does. Odor existed previously, but all sequestra have been removed or roomy openings from the sinuses have been produced by the atrophy. Syphilis even is not to be excluded in this ruling. Granted that the odor of syphilis of the nose is intense, it is due only to necrosis in the nose or neighboring sinuses. With removal of sequestra and widening of the nares the odor ceases, as we know. In a word, when disease of bone exists, or secretion is retained in enclosed cavities or in nares with roomy recesses, we may look for odor. In cases in which it does not exist with crust formation, the nostril is favorably formed by nature at birth or in self-healing for an easy voiding of the crusts. The fact that

the fresh secretion has no odor is proof that bacilli begin to exist only as a factor of decomposition.

(3) As regards the question of the form of crusts which the secretion assumes: This is regarded as purely dependent on a physical condition, lack of water, and that they cannot be blown out because they are too tenacious.

As a result of these observations, the following inferences are drawn:

1. An individual pathological-anatomical picture attended by malodorous crust formation in wide noses does not exist.

2. Any hereditary or anatomical disposition producing a condition called ozæna does not exist.

3. In general, any peculiar inflammation of the nasal mucous membrane producing odor with crusts and atrophy is unproven.

4. The existence of a genuine atrophy is unproven.

5. That all cases of malodorous crust formation rest on sinus empyema is refuted.

On the contrary, it is proven:

1. That in a series of cases carefully studied, the secretion proceeded from foci of suppuration in various manners.

2. That the formation of crusts as well as of odor arises under different conditions.

3. That both conditions often occur together, but often each by itself, and as well with as without atrophy of the mucous membrane.

As a deduction of this we must conclude that the name ozæna has no correct usage save in a symptomatic sense.

We have thus in a hurried manner attempted to abstract Grünwald's earnest arguments. Great thanks are due him for his laudable scientific work on a subject so baffling to the whole school of rhinologists. What avail our many plans of treatment, our ever-growing list of new drugs! Nature in time cures these cases, but do we? What can we honestly claim in the vast majority of our cases as a result of treatment but cleanliness, and thus relief as long as treatment continues? Who of us by any line of treatment can point to seventy-four per cent. of our cases cured, as does Grünwald?

Before proceeding to examine a little in detail his arguments, a slight reference to some of the other more recent theories is in order. Many of them, as those[1] of Loewenberg, Fränkel, Krause, and Taufel, have already been referred to. The views of Bosworth, who regards ozæna as dependent on a purulent rhinitis of childhood, are well known to us and correspond in the main to the position held by B. Fränkel.

Berliner[1] believes that an abnormal enlargement of the middle turbinated with contact with the septum, causing a damming up of secretions with altered blood conditions in the spheno-palatine foramen, is the cause. That there is truth in this theory in certain instances is undoubted. In the large majority of cases, however, we believe the contact acts mechanically to hinder free escape of pus. Watson,[2] without proof, regards ozæna as a form of lupus; while Mackenzie[3] thinks the atrophy is the result of the pressure of the crusts. But whence then the crusts?

The most important communication, however, is by Abel.[4] In a very exhaustive article Abel claims in one hundred cases, previously diagnosed by a clinician as ozæna, to have found a bacillus which he calls the "ozæna bacillus." This he regards as the same as the bacillus of Loewenberg and similar to the pneumococcus of Friedländer, but with distinct differences. He regards ozæna as an infectious disease which soon causes changes in the mucous membrane. Whether hypertrophy followed by atrophy is the case is uncertain. In any case atrophy is the final stage. He regards the odor when present as the result of a bacillus yet to be isolated, for ozæna with the presence of the "ozæna bacillus" occurs without odor. In one case he succeeded in originating the disease in an individual by introduction of the bacillus.

In five hundred and fifty cases not ozæna examined by himself and by Paulsen, an independent Italian observer, no "ozæna bacillus" was discovered. Others have claimed to discover this bacillus in healthy throats and noses. Either they were mistaken and it was the Friedländer bacillus which so closely resembles it, or the seeming normal nostril on careful examination will reveal a chronic catarrhal process, the first stage of ozæna. Finally, the bacillus will not alone cause the disease. Certain other reducing causes are demanded in addition.

When now we come to consider Grünwald's arguments, we are compelled to admit that they are very reasonable in the main. He has certainly refuted one of the chief objections to his theory when he shows that the result of the various autopsies in cases of ozæna is not to prove the presence of healthy sinuses. It will be observed that he does not claim disease of the sinuses is alone the cause, but what he designates focal disease; that is, areas of suppuration elsewhere than in the nose. The whole contention in my judgment rests on whether such a disease as genuine atrophy ever exists. Most of us who have been observing our cases carefully must concede the important rôle of sinus disease in a large number of instances, and adenoid growth each one of us present has recognized as a cause, but can we regard these as the sole causes?

1. Grünwald admits, as to his series of twenty-six cases, that six or twenty-six per cent. cannot be proved to be due to sinus or focal disease.

2. Again, consider the number of cases of sinus disease we meet without atrophy or crusting with odor.

3. It is true that the difficulty in the diagnosis of sinus disease is at times great, but many competent observers have failed to recognize such a proportion of sinus disease in their ozæna cases as does Grünwald. It is scarcely possible that Réthe could have erred to the extent of finding only two cases in sixty-four.

4. Grant, too, that it is not proven, is it reasonable to assume that in no instance does a disease of mucous membrane originate secretion?

5. Grünwald further in his enthusiasm pushes his objection to the anatomical investigation. While there are certain differences, the reports of the best necroscopists in the main agree regarding the condition of the mucous membrane.

6. And are we not going too far to affirm that every case of ozæna in children possesses "focal disease"?

7. To my mind, however, the strongest proof against the Grünwald theory of no genuine atrophy is found in Abel's investigations. Grünwald felt he could brush aside Loewenberg's uncertain work. This cannot be brushed aside. One hundred cases of ozæna showing a bacillus constantly, and five hundred and fifty cases not ozæna not showing it, means something, and to my mind is strongly suggestive of furnishing proof in connection with constitutional and anatomical defects for the existence of a genuine atrophy in certain cases, attended by secretion forming itself into crusts due to physical causes.

My own series of cases is so far quite limited. In ten cases I find the following results:

Case I.—Aged twenty-eight. Duration, four months. Ethmoiditis, etc.

Case II.—Aged twelve. Duration, many years.

[1] Deutsche med. Wochenschrift, 1889.
[2] Lancet, 1890.
[3] Brit. Med. Jour., 1895.
[4] Zeitschrift für Hygiene, 1895.

Double ethmoiditis. Operation relieved odor. Sister, aged four, similarly affected.

Case III. — Aged twenty-one. Duration, four years. Occasional pain in frontal sinus; both middle turbinals polypoid; pus on anterior portion.

Case IV. — Aged nineteen. Duration, fourteen years. Double ethmoiditis.

Case V. — Aged twenty. Duration, five years. Much odor, atrophy, and crusting; empyema of left sphenoid, with ethmoiditis. Operation.

Case VI.—Duration, twenty years. No sinus trouble.

Case VII.—Ethmoiditis, etc.

Case VIII. — Aged twenty-two. Duration, ten years. Adenoid growth.

Case IX.—Aged thirty-five. Duration, fifteen years. Much atrophy, free discharge, no odor, no sinus disease.

Case X.—Much odor and crusting; necrosis of septum; syphilis.

This shows that out of the ten cases five possess sinus disease, one has associated adenoid growth, one is due to syphilis, and three do not show any involvement of the sinus. The six cases of focal disease are still under observation, so do not permit of any final report as regards the result of the operations at this time, though they were greatly benefited. While this series is quite small, it is significant as being in line with Grünwald's result—seventy per cent. showing involved sinus disease.

As a result of these considerations, we feel forced to conclude:

1 That there is no single constant cause for ozæna. Ozæna is rightly to be regarded only as a symptom.

2. That a genuine atrophy until recently unproved, from Loewenberg's studies confirmed by Abel and Paulsen, in all probability does exist.

3. That focal disease, including especially disease of the accessory sinuses, while not the only cause, is a very important and common cause.

4. And as a most practical conclusion for the rhinologist, each case of ozæna, in addition to being treated with the proper constitutional and local measures, is to be thoroughly and repeatedly examined for evidence of such sinus involvement.

BLUEWEED: CHEMICAL AND PYSIOLOGICAL NOTES.[1]

By AUGUST DRESCHER, A.B., Ph.G.,

NEWARK, N. J.

Some time in January last, the writer was asked by Prof. Phil. E. Hommell (one of our active members) to make an examination of a specimen offered at the time, said by Professor Hommell to be derived from the common "blueweed" (Echium vulgare; natural order Boraginaceæ). Dr. Hommell was inclined to attribute pharmaco-dynamic virtues to this plant, and wished me to search for alkaloids. A well-mounted specimen of the plant will be presented for your inspection by Dr. Hommell, together with the botanical description, while I will here confine myself to the account of the chemical and physiological laboratory doings.

The sample handed to me, being in good condition, weighing a little over ten grams, was coarsely powdered and treated as follows:

Preliminary Examination.—One gram was macerated with Prollius' fluid modified (*vide* Dr. A. B. Lyons' work on drug assaying). The filtered fluid, after evaporation having next been shaken out with water acidulated with H_2SO_4, was now subjected to the group tests: (1) Potassium iodide + iodine (Wagner); (2) potassio-mercuric iodide (Mayer); (3) tannic acid.

Tannic acid gave only a faint precipitate.

Dragendorff's regular scheme, alternating with the various solvents in acid and alkaline solution, was then applied upon five grams of the sample, the results showing presence of chlorophyl, wax, fat, and resinous and gummy matter. The mineral ash was not estimated.

The sublimation test (between watch glasses) was negative—absence of salicylic and benzoic acids, volatile alkaloids, and other volatile matter.

The bulk of the extract, prepared as above, was now divided into two parts, (*a*) for chemical tests, (*b*) for physiological tests. The watery solution, acidulated with H_2SO_4, upon evaporation assumed a purplish color, which upon dilution vanished. After it had been shaken out with benzol, and the evaporated residue tested with potassium bichromate + H_2SO_4, no play of colors was observable (absence of strychnine, etc.). The concentrated residue, however, gave the reaction quite distinctly, which would indicate "curarine" (this not being soluble in benzol, while strychnine is). The best solvents for curarine are given by the authors cited as alcohol and water, while in chloroform and carbon bisulphide it is claimed to be almost insoluble, as well as in benzol, etc. Strychnine, methyl-strychnine, etc., are insoluble in water, but more or less soluble in the other fluids. The color reactions of the purified residue obtained by the writer were, with nitric acid, purple, and also with H_2SO_4; with potassium-bichromate + H_2SO_4, the above noted "play of colors."

This, the chemical work, being in itself not entirely satisfactory, physiological experiments were considered as absolutely necessary and truly decisive. In inorganic analysis, on the other hand, if skilfully conducted, the results seldom, if ever, need to leave a doubt as to the nature of the object under consideraton, as we all know.

Physiological Tests.—Being well acquainted with Dr. Vet. Med. Otto Leis, a recently graduated, talented young practitioner, with a thorough clinical experience at the New York Veterinary College, I asked him to assist us in this interesting work. The results:

Dr. Leis into a young guinea-pig (weight, ½ lb.) in good health injected hypodermically twenty minims of the clear water solution prepared by me. After two minutes, eye dilatation was excessive; after three minutes, paralysis of hind joints, rapidly progressing; convulsions appeared at intervals, of a "clonic," not a "tonic" kind; no tetanus; no rigidity of muscles (even one-half hour after death). Difficulty of breathing; gasping; death in twenty-four minutes (from asphyxia), the body remaining quite limber; slight nose bleeding. The post-mortem examination showed no signs of organic lesion. The urine, removed from the bladder after death, immediately and completely reduced an equal volume of Fehling's solution on boiling.

Résumé and Notes.—The results of these investigations would seem to point to three possibilities, thus: methyl-strychnine, curarine, or picrotoxine.

The literature on Echium vulgare is scant. Husemann, "Die Pflanzenstoffe," quotes a work by Buchheim, published at Giessen, 1870, "The Pharmacology of Curarine" (as found in Echium).

Curarine was first prepared by Preyer in 1865 in crystal form from commercial curare (the South American arrow poison). The three above-named substances have analogies in common—similar crystal form, chemical reactions, etc.; but methyl-strychnine

[1] Contributed to the New Jersey Pharmaceutical Association at its annual meeting at Princeton, N. J., May 5, 1897.

produces tetanus (though otherwise differing from strychnine). Curarine has not been observed to induce rigidity of the muscles and true tetanic convulsions.

Picrotoxine, treated with nitre, H_2SO_4, and NaHO in excess, gives a brick-red color. Authors differ somewhat as to the chemical and even the physiological properties of curarine (*vide* Allen's "Organic Chemical Analysis"), even Allen attributing to it a tetanic effect; in the case under consideration such action was not observed.

Although the watery extract of our sample exerted such a deadly activity, it was, in spite of the most earnest efforts, found impossible to isolate a single pure crystal. The oily droplets finally remaining could not be bought to crystallization in the desiccator over H_2SO_4. In the summer with new material, the work may be continued. If this alkaloid (?) should turn out to be a remedy against hydrophobia, etc., the pains taken in preparing it would be handsomely rewarded.

Progress of Medical Science.

Nature and Treatment of Tetany. — Dr. Oddo (*Revue de Médecine*) shows that the theory of the etiology of tetany has an important bearing on its treatment. In children he does not think it due to rickets, though rickets may favor the appearance of tetany. He thinks that the nervous symptoms are caused by a form of toxæmia due to the absorption of poisonous bodies produced in the gastro-intestinal canal. The form of indigestion most likely to lead to tetany is that attended by dilatation of the stomach and long retention of the food. Tetany in the adult is believed to be connected with a special form of indigestion, attended by hypersecretion of the gastric juice containing an excessive quantity of hydrochloric acid. Kassowitz objects to this theory, since dyspepsia is very common in children and tetany is relatively rare. Oddo replies to this objection by saying, 1, that for the production of tetany it is probably necessary that there should be some special form of perverted digestion possibly associated with some form of microbe, or some peculiar condition of the gastric secretion; 2, that for the production of tetany there is necessary a special vulnerability of the nervous system. He would not have tetany accepted as essentially a disease of the nervous system, but that a special form of toxæmia causes its characteristic effects only when there is a predisposition in the nervous system. He notes the fact that Weiss in the adult, and Bonome and Cervesato in children, have described certain lesions of a degenerative nature in the gray substance of the spinal cord, most pronounced in the anterior horns in cases of tetany. Beginning with hyperæmia and swelling, they go on to degeneration of the cells, with overgrowth of the neuroglia. As to diagnosis, he does not accept the opinion of some of the German writers that laryngeal spasm is pathognomonic of tetany. It is frequent in children under two years of age, and as it may cause death the early diagnosis of tetany is important, for much may be done to remove the cause underlying the nervous instability. Among the less common manifestations of tetany are retraction of the head and squint, which may lead to the diagnosis of meningitis. In meningitis the tetanic spasms of the hands and feet are seldom present, vomiting is more persistent, and constipation is the rule; whereas in tetany there is nearly always diarrhœa. In tetany the pupils are not unequal and the pulse is frequent. In the treatment of tetany the two objects are to expel the toxic substances and to prevent their formation. Both indications are met by calomel, which should be given every other day in doses of three-fourths of a grain or more according to the age of the child. Washing out the stomach is beneficial, provided care is taken to avoid the risk of exciting laryngeal spasm. Any errors in the diet of the child should be corrected. If there is a deficiency of acids in the gastric contents, hydrochloric acid should be given after each feeding; if an excessive amount of acid is present, a small dose of sodium carbonate or lime water should be administered. He recommends, in addition to calomel, benzonaphthol, which may be combined with subnitrate of bismuth. Boiled water medicated with boric acid may be used to wash out the large intestine. The child should be guarded from cold and excitement. For the immediate relief of the spasms warm baths are very effective. Chloral may be given as an enema to relieve an attack. Bromide of strontium is a good sedative to be used continuously during the tetanic state. If laryngeal spasm becomes suddenly serious, a sponge soaked in very hot water should be applied to the neck, followed if necessary by inhalation of chloroform, which must, however, be used with much care.

The Roentgen Rays as an Aid in the Diagnosis of Thoracic Affections and Lesions of the Respiratory Apparatus.—Drs. Declerc, Oudin, and Barthélemy (*Le Bulletin Médical*, June 29, 1897) publish the results of a series of experiments showing that the radiograph is useful in the diagnosis of lesions of the respiratory apparatus as well as in aneurisms of the aorta inaccessible by auscultation and percussion The first tests were made before and after thoracentesis on a patient having an abundant effusion of the left pleura. The opacity of the effusion was clearly shown, its superior limit, and the return of the transparency of the pulmonary tissue after puncture. It is shown that the thoracic aorta at its union with the aortic arch is dilated and projects to the left of the vertebral column, at the point of the fifth dorsal vertebra, as is observed in most subjects in whom the peripheral arteries are hard and sinuous. Another radiograph of the thorax of a child affected with adenopathic tracheo-bronchial tuberculosis shows, besides a ganglionic mass behind the sternum accessible to the ordinary means of examination, profoundly situated in the thick part of the lungs, around the hilum, numerous and voluminous ganglions especially at the right and extending the length of the bronchial ramifications. A fourth picture, showing the thorax of a tuberculous patient with right pneumothorax, reveals the pleural cavity filled with air and so transparent, especially in the space between the base of the retracted lung and the surface of the purulent effusion, that at this point the bodies of the vertebræ can be distinguished, with their fibro-cartilages and the articulations of the neighboring sides. An opaque zone limited above by a horizontal line corresponds with the purulent effusion and fills the entire right costal diaphragmatic sinus. The diseased lung, diminished in volume and retracted toward the hilum, appears distinct; one can see its rounded apex, its external oblique edge, its slightly concave base, and an adhesion from its base to the wall. One can measure its exact volume, its form, its dimensions, its situation in the thoracic cavity. It is probable that repeated examinations of the same patient would enable one to measure the variations of the effusion and detect all the changes which are produced in the size and form of the lung. If the perforation becomes cicatrized and if reabsorption of the intrapleural air by the lung takes place, and if the lung approaches its wall, all would be shown before auscultation would reveal it. The left lung in this patient was supposed to be healthy but

showed bronchial râles in the upper half; it was the seat of profound tuberculous lesions. One sees here the utility of the Roentgen rays in the diagnosis of tuberculous infiltrations inaccessible by the other modes of exploration. The last experiment gave additional evidence of this utility. A young girl who presented no certain signs of tuberculosis was examined by this method. The right lung showed opacity at the apex in the middle part, that is to say, a profound lesion. Without detracting from the value of the other clinical methods of exploration, the Roentgen method confirms, completes, and sometimes corrects the diagnosis of thoracic affections.

Etiology of Asthma.—Dr. Kuss holds that among the various causes of true asthmatic dyspnœa, the principal one is a defective evaporation caused by a want of sufficient fluid in the epithelial cells of the pulmonary vesicles. This insufficiency of fluid must be attributed to the reflex affection, from various causes, of the vasomotor nerves governing the nutrition of the cells, and produces the same effect as a sudden and considerable reduction in area of the active pulmonary surface. The convulsive action of the respiratory muscles might easily be a consequence of this dyspnœic condition. In the treatment of asthma (1) increased activity must be given to the secretory powers of epithelial cells by acting on the secretory vasomotor nerves; (2) the determining cause of the harmful reflexes must be obviated by various recognized methods; (3) the physiological and anatomical soundness of the alveolar walls should be maintained by appropriate nutrition.

Acute Pulmonary Gangrene with Pyopneumothorax in a Healthy Youth.—Ewart and Sheild, writing in *The Lancet*, June 19, 1897, report the case of a young man, eighteen years old, who came under observation on account of pain in the back and cough. A week previously he had been suddenly seized with a feeling of chilliness and on the following day severe pain appeared in the left supraspinous region, extending downward. A day later there were pain and cough, without expectoration, and great weakness. For the succeeding four days pain and cough persisted, still without expectoration. Sensations of heat and cold alternated. The patient looked ill and complained of weakness. The lips and ears were slightly but distinctly cyanotic. The pulse was 86, the respirations were 36. No cardiac abnormality could be made out. On auscultation scattered râles could be heard on both sides of the chest in front. Posteriorly on the left side there was dulness from the inferior angle of the scapula, with enfeebled breathing and deficient vocal fremitus. Scattered râles were heard on both sides. Pain and fixation of the chest prevented the ejection of sputum. The tongue was heavily furred: the urine was normal; the temperature was 101° F. Broncho-pneumonia following influenza was diagnosticated. The breath, however, became offensive, and a fit of coughing culminated in the expulsion of a large amount of whitish, foul-smelling muco-pus. Later, signs of left-sided empyema appeared. Preparations were made for aspiration, but this was deferred temporarily because the dulness in the left scapular region was replaced by hyperresonance. The occurrence of a limited pneumothorax was suspected, but as the heart was found on careful examination not to be displaced toward the right an alternative diagnosis was made of bronchiectasis with sudden evacuation of the contents of a cavity. Subsequently the cough became troublesome and orthopnœa set in; cyanosis became marked, the pulse rapid, and exhaustion extreme; the temperature rose to 102° F. The apex beat of the heart was now displaced to the right and the upper half of the left side of the chest was hyperresonant, front and back, with obliteration of the breath sounds, while the lower portion was dull. The breath was offensive and the difficulty in breathing was urgent. The conclusion was now reached that a gangrenous lung had ruptured into the left pleural cavity, with the development of pyopneumothorax. Accordingly an incision was made in the sixth left intercostal space behind the midaxillary line, and a large amount of fetid pus and gas escaped. An empyema tube was introduced. The heart immediately returned to its normal position and the general condition soon improved. At the second dressing more fetid pus came away and the discharge continued for some time. After a while the breath sound could be heard close up to the margin of the wound in front and above and also posteriorly down to the level of the incision. Behind and below the breath sounds were not audible and in this area there was dulness on percussion. The left side of the chest had fallen in. The patient had had measles in childhood, but had escaped other illness. The family history was good and without tuberculous taint.

The Surgical Treatment of Intussusception in Infants.—Pitts has reported seven cases of intussusception of the bowel in children between the ages of ten weeks and two years and a half, of which two were of long standing and the remainder of recent occurrence, and all of which were treated by abdominal section, with recovery in six and death in one of the acute cases. Upon the basis of this together with earlier experience it is recommended that, in cases of recent acute intussusception, distention of the bowel by air or water, in conjunction with gentle external manipulation, may be tried under an anæsthetic. The surgeon should, however, be present and be prepared to open the abdomen at once if a satisfactory result is not quickly obtained. In many cases the effect of such inflation is to reduce the main mass of the tumor, but to leave an irreducible portion in the right iliac and lumbar regions. This amount of success aids the subsequent operation and allows the tumor to be delivered easily through a smaller incision and with less manipulation. If inflation has apparently been successful the child should be carefully watched, and with evidence of continued trouble abdominal section should be resorted to and further inflation tried. An exploratory operation should be undertaken without preliminary inflation when, from the severity of the symptoms or the chronicity of the case, there is reason to believe that such inflation would be dangerous or unlikely to succeed. The time required for insufflation adds considerably to the shock. The median incision is suitable in the majority of cases, but when the tumor is in the cæcal region a limited incision in the right semilunar line may be found most convenient. For the reduction of the final portion of an intussusception the tumor should be brought outside the wound, so that the operator may clearly see the condition of the bowel and make sure that the reduction is complete. Thickening about the ileo-cæcal valve may be easily mistaken for an incomplete reduction. When doubt exists an incision may be safely made into the colon and the parts examined from within the bowel. An incomplete reduction will certainly lead to further trouble. In some of the cases of spontaneous cure, or cure by inflation or manipulation, it is highly probable that complete reduction is not effected and the chances of recurring symptoms are therefore greater than after careful operation. In none of the seven cases reported did it seem desirable after reduction to attempt any fixation of the bowel—such as by suture of the mesentery—as a security against recurrence. Such a procedure seemed contraindicated, as it would have added to the length of the operation and

have been uncertain as to the effect produced. All of the children were given small doses of tincture of opium and kept under constant medical supervision for a considerable time after convalescence from the immediate condition. When reduction is found impossible a resection inside the colon would seem to afford the best chance. The junction between the large and small bowel must be made secure before any part is cut away. When gangrene is present the condition in young children is almost hopeless. Complete section and end-to-end union, whether by Murphy's button or by suture, has so far been practically without success. Perhaps rapid resection, with lateral implantation of the small bowel into a healthy portion of the colon, and bringing the cut edge of the large bowel to the surface as a temporary vent for the escape of flatus, would be the quickest and safest method to adopt. Safely, however, as infants withstand a short operation, a prolonged one under such circumstances seems almost beyond their power.—*The Lancet*, June 12, 1897.

Terminal Infections in Chronic Diseases.—Dr. Flexner has published the results of a statistical and experimental study of terminal infections, based on the bacteriological examination of the necropsies of two hundred and fifty-five cases of chronic heart or kidney disease, or of the two combined (*British Medical Journal*). Of these, two hundred and thirteen gave positive, and forty-two gave negative results. The infections may be (1) local—these are far the commoner—or (2) general. In the general infections there was a striking predominance of the usual pyogenic cocci; streptococci were the variety most often present, but were not highly pathogenic for laboratory animals. The usual lesions found were acute splenic enlargement and parenchymatous degenerations in the viscera; in a large proportion of cases visible focal lesions were not present. The portals of entry of the micro-organisms in these cases of general infection could not always be determined. In the local infections the micro-organisms were for the most part the same as in the general infections. The colon bacillus was so frequently found in the kidneys and lungs, and streptococci were so commonly present in congested and œdematous lungs, that these organs must be regarded as specially favoring the growth of these micro-organisms. In the great majority of cases the presence of the colon bacillus was not regarded as of pathological importance; the exceptions were when it was met with generally all over the body and in large numbers, and when it was present together with pyococci. Lists of the micro-organisms found and of their portals of entry are given, and it is seen that the intestine is the portal of entry for many of the bacteria found not only in peritonitis, but also in pleurisy, endocarditis, etc. The statistics show the value of systematic bacteriological examination in routine post-mortem work, and illustrate Osler's remark that secondary infections carry off many incurable cases. In order to throw light on the factors which render a patient with chronic disease so much more susceptible to infection than a healthy person, Flexner examined the bactericidal power of blood serum obtained from cases of chronic disease, and compared it with that of normal blood serum and of placental blood serum. The bactericidal power was tested on cultivations of the staphylococcus aureus. He found that normal blood serum possessed distinct bactericidal properties, and that this power was absent or diminished in at least some cases of advanced chronic disease.

Frequency of Spontaneous Recovery from Appendicitis.—Dr. Rotter states, in his report of the two hundred and thirteen cases treated in the medical and surgical departments of the St. Hedwig Hospital at Berlin, 1893 to 1895, that the mortality in appendicitis is not so large as is usually assumed, amounting in his experience to only 8.9 per cent. of the total number of cases, and to only 2.5 per cent. in the circumscribed cases (*The Journal of the American Medical Association*). He reviews also the results secured by others, especially Sonnenberg, which imparts extra interest to his communication. He is more conservative than Sonnenberg, who advises removing the appendix even in mild cases that begin "stormily," particularly if there is any chronic tendency, stating that mere incision of the abscess is never sufficient. Rotter's practice is immediate operation in diffuse peritonitis, conservative treatment in the circumscribed cases. He does not accept Sonnenberg's seven forms, but divides all cases into the two—general and localized peritonitis. He found that of the localized cases, ninety per cent. recovered spontaneously, and eighty-four per cent. of the total number of cases received at the hospital during the first six days of the attack. He ascribes great importance to the fever, which he classifies into five groups: 1. Cases begin with high fever, up to 40° C.; decrease third or fourth day; rapid convalescence. 2. Begin the same, with fever up to 40° C.; fever lasts longer, but not over 39° C. by fifth day. In fourteen cases of this kind all recovered; three required operation for circumscribed abscesses. In the absence of fever, he operates upon such cases on the ninth day. 3. Same, with temperature over 39° C. longer than the fifth day; grave virulent infection; prognosis unfavorable. In eleven cases there were two deaths; the fever disappeared spontaneously in two cases the eighth or ninth day; four were operated; three patients recovered after a protracted stay in bed (perforation into the intestine). This group requires prompt surgical intervention, not later than the sixth day, and earlier than this with symptoms of progressive peritonitis. 4. After an earlier fall in the temperature it rises again, which always indicates larger accumulations of pus. Four patients of the six in this category were operated upon; one died of general peritonitis, and another left after the third remission, apparently cured. These cases should be operated upon during the first remission. 5. General peritonitis; the temperature is low, often subnormal in severe infection, higher in progressive cases; the pulse indicates the severity of the attack; recovery is to be expected only with surgical intervention. He believes that pus is always present in acute attacks, whether found or not. It may be discharged through the lumen or the perforation and absorbed by the peritoneum.

Retroperitoneal Tumors.—In a recent issue of the *British Medical Journal* is reported an interesting debate bearing on retroperitoneal tumors which took place at a meeting of the Royal Medical and Chirurgical Society, in connection with Mr. Marmaduke Sheild's case of successful removal of a large fibromyomatous tumor arising from the retroperitoneal space. The origin of such tumors may be difficult to determine, as they tend to spread far and wide behind the peritoneum; some may be derived from the smooth muscular tissue which extends from the uterus into the broad ligament, and has, we believe, been termed the uterine platysma; while Mr. Eve suggested that the smooth muscular tissue said to be present at the root of the mesentery might be the starting-point of some fibromyomata. Probably many of the growths described as retroperitoneal sarcomata are, like most "sarcomata" of the breast, allied more closely to soft fibromata than to malignant tumors, as evidenced by the facts that they displace rather than invade adjacent tissues, and do not recur after removal, though that operation may be extremely hazardous from the

extent and size of the growth. The retroperitoneal fibromata may be extremely œdematous or may contain fat, as in Sir Spencer Wells' case examined by Mr. Eve. Occasionally they may be almost or entirely composed of fat, and form enormous tumors, which may somewhat resemble malignant tumors or more closely ascites. From malignant tumors their course and the absence of cachexia distinguish them, while the effects of paracentesis differentiate them from ascites. Mr. Lockwood drew attention to the areas of resonance which vary in their position as a clinical feature of retroperitoneal growths; but this fact, together with fluctuation, met with in fatty tumors, would tend to make the resemblance of ascites and retroperitoneal lipomata all the more close. No wonder, then, that such semisolid growths have been subjected to paracentesis.

Diagnosis of Primary Malignant Tumors of the Pleura and Lungs.—Dr. Zagari (*Arch. Clin. de Bordeaux*, March, 1897) groups the special clinical symptoms as follows: 1. Insidious commencement of the affection. 2. Marked general debility. 3. Absence of fever. 4. Persistent, increasing pain. 5. Circumscribed œdema of the chest. 6. Development of the lymphatic ganglia on one side of the thorax, exclusively or more prominently; possible turgescence of the veins in the anterior and lateral parts of this side. 7. Sweats and more elevated temperature on one side of the thorax. 8. Distress in breathing and more intense oppression than can be ascribed to the quantity of fluid obtained by puncture. 9. Irregular distention of the thoracic cage, especially in the superior and anterior region of the chest. 10. Intercostal spaces neither prominent nor dilated. 11. Complete dulness, without the slightest elasticity, in the superior and anterior region of the thorax; zones of dulness close to zones of resonance. 12. Dulness over the manubrium or the sides of the sternum, which indicates not only the displacement of the mediastinum toward the sound side, but also the irregularity of this displacement. 13. Skodaic resonance over the clavicle and sternum. 14. The laryngo-tracheal murmur distinctly transmitted to the superior regions. 15. Persistence of the plessimetric and acoustic phenomena even after evacuation of the fluid in the pleural cavity. 16. This fluid is very thick, rich in fibrin, hemorrhagic, with histologic elements special to the neoplasm. 17. Peculiar sensation of having penetrated into a compact, deep, thick mass, when inserting the needle. 18. Puncture is without effect, or the fluid forms rapidly again. 19. Displacement of the heart and liver, out of all proportion to the amount of liquid withdrawn.

Lavage in Chronic Gastritis.—Dr. Behrens (*St. Louis Medical and Surgical Journal*, April, 1897), in an article on this subject, summed up the uses to be derived from lavage as follows: Mucus and mucous plaques are washed out, stimulating the cells to secrete a juice that is acid, with no alkalinity to neutralize it. By the direct application of warmth we insure in time muscular reaction, consequently a relief of this atonic or sluggish condition of the stomach, raising the function of this organ to the capabilities required of it. Of the solutions, sodium bicarbonate is preferably used in these cases to facilitate removal of mucus, and when acids other than normal exist causes, to a degree, neutralization. The last washing should be with clear warm water, 110° to 112° F.; afterward the medication indicated may be given to continue stimulation, viz., bitter tonics—preferably strychnine in its various combinations. By testing the contents we facilitate diagnosis in stomach disorders. Lavage should be done about one-half hour before the main meal, to clear the stomach of unnecessary secretions and also to avoid clogging the tube with food from the last meal. Lavage should not be done on those having aneurism, arterial sclerosis, severe valvular lesions, in the later stages of pregnancy (if first introduction of tube causes much distress), œsophageal cancer, gastric ulcer or gastric cancer when there is rapid disintegration of tissue, in those afflicted with spasm of glottis, enlarged tonsils (interfering or causing obstruction to respiration), or the severe asthmatics. Cleanliness must be strictly observed in tube introduction. All solutions being ready and at a proper temperature, a fairly stiff tube is selected; the patient is seated on a firm chair, with strong, straight, high back, and covered with a rubber apron (to prevent soiling clothing by vomitus, etc.), and over this a clean white towel should be laid: the head is tilted slightly backward, the mouth opened about one inch; the tube, being lubricated, is passed directly back; it turns readily in the pharynx with just a little force. About this time the patient gags, and it is necessary to watch that the tube is not jerked out by him. Ask him to swallow: assure him everything is all right (though most patients feel the first time as if they were going to strangle). Then quickly pass the tube to the mark outlined for adults: after a moment's rest have him breathe a few times. Being assured that it has passed into the stomach, pour in about five hundred cubic centimetres of warm water, and the work from this time on is readily accomplished. Patients become so accustomed to its introduction after a few times this it is not looked on with any fear. In many cases of chronic gastritis one washing has been of such benefit that it is not difficult to continue this form of treatment, which apparently seems at first impossible.

Different Varieties of Aortic Regurgitation.—Dr. Handford, at a meeting of the Nottingham Medico-Chirurgical Society, held on March 3d, stated that the chief characteristics of the rheumatic cases were: (1) The disease came on at a much earlier period of life than atheroma, and was the main cause of aortic regurgitation arising between the ages of five and thirty-five years; (2) the arteries were generally sound; (3) the heart muscle was comparatively sound; and (4) apart from fresh attacks the valvular disease soon ceased to be progressive. In all these respects rheumatic aortic regurgitation differed essentially from the atheromatous, and the prognosis was very much more favorable. Not infrequently free regurgitation might exist for years with a complete absence of symptoms, even though the patient led an active life. The atheromatous cases were by far the most numerous and serious, and presented the following distinctions: (1) The disease was essentially a degeneration and arose in middle life, rarely before the age of thirty-five years, except when syphilis was the main cause; (2) the arteries were always involved to a considerable extent; (3) the heart muscle was rarely sound; (4) the disease was almost always progressive, and (5) it affected the male much more frequently than the female. Of the atheromatous cases there were four chief subdivisions, according to the mode of production: (1) The syphilitic, arising generally between the ages of thirty and fifty years, affecting sometimes mainly the aorta and branches, and sometimes mainly the valves, difficult to distinguish from fusiform aneurism, and rapidly progressive; (2) those arising from laborious work in strong, muscular men, generally between the ages of forty and fifty years; (3) the arterio-sclerotic, arising between the ages of fifty and sixty-five years in the gouty and in men who habitually ate and drank too much, especially when combined with hard mental work; and (4) cases arising from "old age," about seventy years. No general rule could be laid down for all cases as regarded the use of digitalis. It was most useful when there was consecutive mitral disease

with dropsy, next in the rheumatic cases and those arising from laborious work; the latter could often be enabled to continue their work by daily doses of digitalis. The chief cause of failure of compensation was degeneration of the ventricle from fibroid change, the prognosis of which depended mainly upon the degree of occlusion of the coronary arteries. When the fibroid change was advanced digitalis had little tonic stimulating effect upon the heart, and not only failed to do good, but did positive harm, because it still caused tonic contraction of the small arteries and increased the work of the failing heart. Digitalis was of great use in failure of compensation from temporary causes. It generally did harm in the syphilitic, the arteriosclerotic, and the aged cases.—*Lancet*, March 13, p. 741.

Diuretic Treatment of Renal Dropsy.—Dr. Nestor Tirard (*British Medical Journal*, March 20th), in a lecture on this subject, states: "It may be well to remind you that Manquat classified diuretics as follows: 1. Mechanical diuretics, with the subdivisions (*a*) cardio-vascular diuretic, (*b*) aqueous diuretics. 2. Renal diuretics, subdividing into (*a*) functional epithelial diuretics, (*b*) irritant epithelial diuretics. You will see from this classification that digitalis and diuretin, salicylate of theobromine and sodium, probably belong to different groups. Digitalis stands as a 'cardio-vascular diuretic,' which will act partly by increasing the blood pressure generally, and partly by increasing the speed of the flow of blood through the glomeruli; in fact, digitalis is to be grouped together with convallaria, squills, ergot, strophanthus, and caffeine. Of the 'aqueous diuretics' in the above classification, we made use both of Imperial drink and of milk; and these act by increasing the volume of the blood, and by thus directly raising the arterial tension. All classifications of remedies are necessarily imperfect. Some of the 'aqueous diuretics,' notably milk, might with equal propriety fall into the second group of 'renal' diuretics, which act directly on the renal epithelium. Huchard has grouped together the indications for diuretic medication, as set forth by various authors, in the following way: 1, To maintain the action of the kidney; 2, to evacuate fluid effusions; 3, to soothe and diminish irritation of the genito-urinary organs; 4, to modify the urinary excretion, to prevent urinary calculi; 5, to exert a derivative action through the renal passages; 6, to hasten elimination of toxic substances from the organism; 7, to free the blood of morbid matters which are capable of elimination by the kidneys. With cases of acute dropsy, such as occur subsequently to scarlet fever, you well know that our practice is to stimulate the action of the skin so far as possible by the employment of diaphoretics, or by using the hot-air bath or the wet pack; and while we endeavor in this way to relieve strain upon the engorged vessels of the glomeruli, we almost as a matter of routine administer hydragogue purgatives, by means of which we hope, by reducing the volume of blood within the vessels lining the intestine, to exert an absorbent action through the vessels of the remoter tissues. There are few facts in medicine which appear to be more conclusively proved than that the total quantity of fluid circulating within the blood-vessels always tends to remain the same, so that when the vessels are depleted at one part of the body the loss is replaced by absorption from other parts."

Remarks on Arthritic Gout.—Dr. Wade (*British Medical Journal*, February 27th) says: "The neurosis is the primary and essential element. If a sensory nerve is attacked, we get pain and tenderness; if a vasomotor one, we get redness and swelling; if the nutritive nerve of a joint, we get changes in the joint, one result of which may be a deposit of urates. I submit from this that this theory, more completely than any other, brings into line the various manifestations of gout. But it may be asked how it is that one toxin (uric acid) affects now an external, now an internal, sensory nerve; now a motor, now a vasomotor, now a trophic nerve, now an excretory one. This raises an important question, on which Dr. Ewart says: 'We still hesitate, then, to admit without further investigation that gout is primarily dependent upon uric acid as a cause, or that uric acid necessarily exerts any exclusive influence on the production of the phenomena of goutiness.' Dr. Ewart's hesitation is shared by many. It is enhanced in my mind by the fact that different toxins have an elective affinity for different nerve tracts. Conversely we perhaps may infer that affections of different nerve tracts imply different toxins. That such may be the case in gout receives strong support from the ingenious and laborious researches of Dr. Haig. This uncompromising advocate of the uric-acid theory claims to have proved that other bodies chemically allied to, but not identical with, uric acid resemble it in their action upon the human body. This, then, is a matter which, like the state of the local nerves, deserves a much more critical investigation than either has as yet received."

Amœboid Bodies in the Blood of Vaccinated Monkeys and Children and in that of Cases of Variola.—As the result of an experimental study, Surgeon Walter Reed, U. S. A. (*Journal of Experimental Medicine*, vol. ii., No. 5, September 18, 1897, p. 515), has been able to confirm the observation that small granular amœboid bodies are present in the blood of vaccinated children and calves, and in that from cases of variola during the stage of fever. Nuclei in any of these bodies could not be positively made out. Similar granular amœboid bodies, having a diameter about one-third that of a red blood cell, were found also in the blood of monkeys during the active stage of vaccination, disappearing with the decline of the local inflammation. A body of like appearance, granulation, and size was occasionally found in the normal blood of monkeys and children. Pale amœboid bodies containing a few dark pigment-like granules were found in the blood from cases of variola and in that of a variolated monkey. Bodies of like appearance were occasionally found in the blood of vaccinated children and monkeys.

The Spinal Lesions of Progressive Pernicious Anæmia and of the Secondary Anæmias of Adults.—Lenoble reports a fatal case of progressive pernicious anæmia, attended by hemorrhage into the spinal cord; and also one of anæmia secondary to pregnancy, in which no spinal lesion could be detected. From a study of the literature, he expresses the opinion that both forms of disease may be attended by spinal lesions varying from hemorrhage to extensive areas of sclerosis occupying a large portion of the white fibres; the gray matter also may be more or less profoundly involved up to a disappearance of various groups of ganglion cells. The lesions may, upon the one hand, be unattended by any physical evidence of their existence, or, on the other hand, they may be attended by symptoms attributable to irritation of the cord or even of true paralysis, in accordance with the extent and distribution of the lesions. These alterations appear to be especially physical, the poison of pernicious anæmia acting upon the elements from which the red blood corpuscles are derived, the hæmatoblasts. In the symptomatic anæmias, a similar mechanism may give rise to hemorrhage consecutive to the auto-intoxication that constitutes a part of the clinical syndrome.—*Revue de Médecine*, June 10, 1897.

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NATIONAL QUARANTINE.

THE inefficiency of independent local quarantines in the yellow-fever districts demonstrates in a striking way the need for a national system which shall comprise all others and direct all others. The practical sanitarian need only study the present situation in all its details of senseless and conflicting restrictions, to be convinced of the fact that quarantine as at present carried on has been an utter failure. The lack of systematic direction by centralized power is strikingly shown by the inconsistent and ill-timed actions of the health boards and municipal governments of the different localities in the stricken districts. Not only has each State a health law of its own, but each city presumes to dictate by means of shotgun methods who shall enter or leave a given place, and in many instances the panic-stricken citizens have practically resorted to mob rule in holding up railroad trains, interfering with traffic, arresting government experts, hindering food supplies, and attacking temporary hospitals. It is quite true that the various State health boards specially interested in the present means of protection have done their best to establish some uniform system of quarantine and have held conferences to that end, but behind all seeming agreement on mooted points rest their obligations in maintaining the legal rights of their respective States. Therein in fact is the principal difficulty in coming to an understanding as to what may be done for several States as a consistent whole and in the common interests of wide ranges of territory.

In the various national health bills that have heretofore been framed, the intentions have been very clearly expressed not to interfere with the rights of any State in the codification or enforcement of its own laws. The leading ideas were uniformity in quarantine regulations, and such assistance from a centralized power as might be necessary in times of great emergency to enforce consistent and concerted action among different States.

Some attempt at nationa. control has been made during the past few years by enlarging the powers of the Marine Hospital department, but, while due credit is to be accorded to the Supervising Surgeon-General and his alert staff, it has become more and more evident that something more is needed to give due scope and efficiency to a model, far-reaching, and thoroughly practical national law. We must needs have some such enactment ere long. Every time we have a practical object lesson in the shape of an epidemic the real necessity for such a measure becomes more and more manifest. Just now the subject forces itself on our attention, and we duly note current facts as contributing to the history of a discussion in which every sanitarian in the country should be duly interested.

MODERN ATHLETICS AND HEALTH.

ARE athletics as now carried on conducive to health? is a question often asked, and some curiosity is evinced as to what point of barbarity they will attain ere public sentiment revolts against their methods. There is an ever-growing tendency among sensible and thoughtful men to deplore the manner in which our modern sports and games are conducted. The spirit of emulation is an excellent quality, but even that may be carried too far; and when, as not infrequently happens, limbs are broken and fatal casualties occur in what are supposed to be friendly football games between boys at school or university, it is time that the situation should be reviewed dispassionately. As with the mode of playing football, so it is with the methods ruling the conduct of modern athletics generally. The system is not only not beneficial but is prejudicial to health. In the journals of England a heated discussion is now being waged with regard to this much-vexed question. Letters are being written and opinions aired by all sorts and conditions of men, and from these it would appear that the conclusions arrived at are unfavorable to the view of the healthfulness of modern athletic training. The *British Medical Journal* has taken up the subject, and says: "We quite admit that many athletes are extraordinarily healthy fellows, but that does not touch the question. None but strong and healthy men are likely to enter on or at any rate to persevere in athletic pursuits, and the question really is not, Do some of them remain healthy? but, Do they remain as healthy when they devote themselves to the one object of developing muscle as they, the same people, would if they led an ordinary outdoor life, eating ordinary food and taking a reasonable amount of exercise without any attempt at interfering with their weight or increasing their muscles? The key to the answer lies in the fact that health depends on the integrity of the digestive and assimilative organs, and that perfection of muscle is quite a secondary consideration. . . . Notwithstanding, then, the array of vigorous and hearty middle-aged and even elderly men who have survived the ordeal, we cannot shut our eyes to the fact that the record breaking which is now the aim of every self-respecting athlete is productive of such an amount of strain, especially to the vascular system, as when oft repeated must do harm. The athlete is often healthy, but is so in spite of rather than by virtue of his athleticism."

These are true words, and apply probably even more directly to American athletes and to the American system of training than to athletes of England who follow

the system in vogue there. The course of training at universities in this country is much more severe than in England. However, there is small room for doubt that in both countries athletics, and more particularly among amateurs, is carried to excess. Of course if a man is a professional and gains his livelihood by the exercise of his thews and sinews, he must expect to run some risks, but with those who hope in after-life to work at a profession or trade it is foolish in the extreme to mortgage their future by injuring their health when at school or college. Moderation is good, excess is bad.

HIRED EXPERT TESTIMONY.

The sensational trial of Luetgert throws its glary sidelights on the anatomical experts who are disputing over the identity of the bones found in the sausage vat. The public is being amused by the flat contradictions of alleged scientists regarding certain points which distinguish the bones of a woman from those of a hog. What a credit to anatomy such a lamentable possibility of radical disagreement entails! It is such spectacles in court that show the utter fallacy of hired expert testimony. How much better would it be for the court to appoint an impartial commission of skilled anatomists, which could decide once for all without the disgraceful wrangle and without the temptation for disagreement which the mere payment of a nominal fee would appear to invite!

"THE URIC-ACID DIATHESIS."

Dr. Haig has imparted a good deal of breezy freshness into the dry "uric-acid diathesis" question, and his theory as to the cause of uric acid in the body is worthy of much consideration. Nevertheless it can hardly be said that his researches, valuable and interesting as they are, have finally settled the point in dispute. In fact, those holding his ideas on the subject are in the minority. In the *Edinburgh Medical Journal* for July is printed a paper which Dr. Haig read before the Medical Society of London in November last, and in which his views are clearly and concisely set forth. He begins by saying: "It has been taught for many years that uric acid given to mammals appears in the urine as urea. If this is so, then it is impossible to increase the uric acid in a man's body and blood by administering it in his food. Thus almost the only way in which a man can come to have excess of this substance in his body and blood is by excessive formation. That some have such excessive formation and suffer from excessive uric acid as the result of it, is the belief of those who write about the 'uric-acid diathesis.'" Dr. Haig then states that as the result of investigations he found that uric acid did get into the blood and eventually into the urine, and that from further investigations he has completely convinced himself that to speak of "a uric-acid diathesis" is altogether misleading. He thinks the excess of uric acid in the body and all the diseases to which it gives rise can be quite as well accounted for by the gradual accumulation of the quantities daily swallowed in the food. When a diet in every respect free from all uric acid has been tried, and when the urine of the individual who has thus been dieted has been found quite free from uric acid, then Dr. Haig's assumption undoubtedly will be accepted; but as yet the theory needs support.

News of the Week.

Dr. H. Davison Schwarschild announces that he has assumed the name of Dr. H. Davison Saril, by virtue of an order of the supreme court.

Prof. Adami, of McGill University, Montreal, has accepted the invitation of the University Medical College to deliver a course of lectures on general pathology. The course began on Friday, October 8th.

St. Mark's Hospital Alumni Association. — The graduates of St. Mark's Hospital have formed an alumni association. Meetings will be held monthly at the hospital. The officers are Dr. L. F. Garrigues, *President;* Dr. Martin J. Schuh, *Secretary;* Dr. Casper Stock, *Treasurer.*

The American Laryngological, Rhinological, and Otological Society.—The fourth annual meeting of this society will be held in Pittsburg, Pa., on May 11 and 12, 1898. The president is Dr. William H. Daly, of Pittsburg, Pa.; and the secretary, Dr. Robert C. Myles, 46 West Thirty-eighth Street, New York City.

A State Medical Examination in England.—Mr. Victor Horsley is a candidate for the vacancy in the General Medical Council. At a recent meeting of medical men he delivered an address, in which he declared in favor of what he called the one portal system—that is, a single State examination instead of the dozen or more conducted by various corporations and schools, on which the authorities at present are empowered to grant medical diplomas.

Opposition to the Establishment of a Sanatorium.—The New York State board of health recently asked the attorney-general to give an opinion as to whether a local board of health has the right to prevent the establishment within its jurisdiction of a sanatorium for the treatment of pulmonary tuberculosis. A physician of this city had made application to the village authorities of Liberty, in Sullivan County, for permission to establish one. The application was refused on the ground that its existence would be a menace to the general health of the village. He appealed to the State board of health for the annulment of the decision of the local board. In response to this request, Attorney-General Hancock has written an opinion, in which he says that "the members of the State board of health are sufficiently familiar with the disease called tuberculosis to advise whether such a resolution as has been adopted is reasonable or proper. In my opinion the mere fact that this disease is com-

municable under certain circumstances would not justify an ordinance or regulation preventing the establishment of a properly regulated sanatorium within the corporate limits of the village."

A Modern Epidemic of Mediæval Type.—A striking proof that the great plagues of antiquity and the middle ages are kept away only by modern sanitary measures is furnished by the epidemic of typhoid fever now raging at Maidstone in England. In this town of thirty-two thousand souls there are more than thirteen hundred cases of typhoid fever, the greater proportion of them among the well-to-do. The streets are nearly deserted, the shops are closed, the church bells are silent. The origin of the epidemic is most evident, and the presence of the disease is a disgrace to the sanitary authorities. Ninety-six per cent. of all the cases have been traced to one water supply, which receives the drainage from a field where there was an encampment of hop pickers. The first cases of the fever occurred just two weeks after the hop pickers arrived from London. These people were huddled together like sheep and lived under frightfully insanitary conditions, more like swine than human beings. The attention of the authorities has been called to this state of affairs in previous years during the hop-picking season, but they did nothing to avert the danger.

The Surgeon-General of the Navy.—The President has appointed Dr. Newton C. Bates surgeon-general and chief of the bureau of medicine and surgery of the navy, to succeed Surgeon-General Tryon. Dr. Bates is an old friend of Mr. McKinley, and has been his family physician since the inauguration.

American Medical Association of Colored Physicians.—The second biennial session of the American Medical Association of Colored Physicians will be held at Nashville, Tenn., October 15th and 16th. A number of papers has been promised by the leading colored physicians of the North and South.

Obituary Notes.—Dr. James T. Sothoran, of Washington, died in that city on September 27th, aged fifty-five. He was a native of Maryland, but had resided in the District of Columbia since early youth. During the civil war he served as a medical cadet in one of the army hospitals at Washington. He was a graduate of the medical department of the University of Georgetown in 1865.—Dr. William P. Jones, of Nashville, died in that city on September 25th, aged seventy-eight years. He was a native of Adair County, Ky., and had been a resident of Tennessee for nearly fifty years. Dr. Jones had been postmaster of Nashville and president of the Nashville Medical College. He was a graduate of the Medical College of Ohio in 1854.—Dr. Samuel J. Craig, who was attached to the Ward's Island Hospital, died September 30th, at the home of his father in Williamsburg, of typhoid fever. He was twenty-six years old, and graduated three years ago from the College of Physicians and Surgeons in this city.—Dr. Charles T. Ryan, of this city, died on October 1st, aged fifty years. He was a graduate of Bellevue Medical College, but never practised medicine.—Dr. Robert N. Flagg, of Yonkers, died in this city on September 30th, from injuries received by jumping out of a window while insane. He had been ill for some time, but was thought to be better, and had been married only a short time before his death.—Dr. Joseph J. Sweet, Jr., of Albany, died in the City Hospital there on October 3d. He was born in New Hampshire in 1865, and was graduated from the Albany Medical College in 1894.

The Health of New York State.—According to the bulletin of the State board of health for August, the total number of deaths during the month was 10,084, which is 2,300 less than in August, 1896, and is almost 500 less than the average for August for the last ten years. Last year there were 1,125 deaths from sunstroke during the month of August, but very few during the same month this year. In the cities of New York and Brooklyn there were 1,750 fewer deaths than in the corresponding month last year. The death rate for the month was 18.75, against 23.25 last year.

Hotel Suicides.—On the last day of September there were seven attempts at suicide in different hotels in this city, all of which were successful. Six persons found death by inhalation of illuminating gas, and one died by jumping from a window.

The Plague in Bombay is rapidly assuming its former proportions. During the last week of September there were sixty deaths from that disease in the city of Bombay, and many more in the presidency. The plague has reappeared in Kurrachee and is spreading to other towns, having already invaded Sholapur.

Dr. A. E. Sansom, president of the Medical Society of London, well known to Americans through his writings on diseases of the circulatory system, has been elected an honorary member of the Therapeutical Society of Moscow.

Dr. Eng, a Chinese lady, said to be a graduate of the Women's Medical College in Philadelphia, has been appointed physician to the women of the household of Li Hung Chang. She has also been appointed, with Miss Wang, a delegate from China to the Women's Congress which is to be held in London in 1898.

Dr. William L. Rodman, of Louisville, has been called to the chair of the principles and practice of surgery and clinical surgery in the Medico-Chirurgical College of Philadelphia. He will deliver a course of lectures, didactic and clinical, between October 1, 1897, and January 1, 1898, and will then resume his work in the Kentucky School of Medicine, where he has held the chair of surgery for several years.

Professor Virchow and the Lady Doctors.—After the scientific proceedings of the International Medical Congress at Moscow had been brought to a close, a deputation of Russian lady doctors waited on Prof. Rudolf Virchow, who received them in the apartments assigned to him by the Czar in the Kremlin. The

spokeswoman of the deputation thanked the great pathologist in the name of her professional sisters for his championship of the cause of the medical education of women. Professor Virchow, in returning thanks, spoke highly of the ability shown by Russian female students of medicine, and expressed the opinion that the Medical Institute for Women, recently opened in St. Petersburg, had a future of usefulness before it. He invited the Russian lady doctors to make free use of his Anatomico-Pathological Institute if they ever had occasion to visit Berlin.—*British Medical Journal.*

Dispensary Abuse in Philadelphia.—The managers of the Presbyterian Hospital in Philadelphia, in conjunction with the medical staff, have instituted an inquiry into the extent of the abuse of its privileges by those who are able to pay. The result of a careful investigation shows that about twenty per cent. of those who are treated freely in the out-patient department are not proper subjects for charity; about half of these are willing to pay moderate fees, but apply because their friends are treated gratuitously and successfully; they have no family physician. They have no incentive to seek medical attention outside when it is so easy to get advice free of charge in institutions. A plan of personal visitation will be adopted, by which an effort will be made to give services only to those who are really unable to pay for medical attendance; thus the needy poor will receive more satisfactory treatment and the objects for which the founders and contributors of such an institution maintain it will be conserved. Co-operation by other hospitals will help to remedy a great evil.—*International Medical Magazine.*

Dr. Alarik Frithiof Holmgren, professor of physiology at the University of Upsala, died recently at the age of sixty-five years. He graduated in medicine in 1861, and was called to the chair of physiology by his alma mater in 1864. He was best known abroad perhaps by his labors in relation to color blindness, and the worsted test for color perception is known as Holmgren's test. He was founder and editor of the *Skandinavian Archives of Physiology*, and was president of the International Physiological Congress.

A Well-Equipped Medical School.—Among the million or more medical colleges in this great country there is one with thirty-eight professors, twenty-three assistant professors and instructors, and fifty-one students. This gives one professor, assistant professor, or instructor to each student, with ten left over. It is suggested that a new medical journal be started, to give the idle ten something to do.

War by Anæsthesia.—A Russian chemist is reported by the *British and Colonial Druggist* to have discovered a substance with most powerful anæsthetic properties, which exerts its influence over a wide area even when greatly diluted with air. It is proposed to determine whether it will not be possible to inclose the anæsthetic in bombs, which could be thrown into an enemy's ranks and there exploded, thus anæsthetizing large bodies of troops and rendering them an easy prey. This would give a new application to the phrase, "putting one's adversary to sleep."

A Quarrel of Kneipp's Successors.—Dr. Baumgarten and Father Reile are engaged in a sharp struggle to determine which shall be the successor of the late Father Kneipp in the management of the water-cure establishments at Woerishofen. The newspapers, inhabitants, and patients are taking sides in the quarrel, and a manifesto signed by two hundred patients has just been published against Father Reile and in support of Baumgarten.

A Suit against Montreal.—A bicyclist, while riding his wheel on one of the public streets of Montreal, fell and was severely injured. He attributes his fall to the bad condition of the roads, and thinks the city can be made by law to keep good roads, since it forces all wheelmen to pay a tax for the privilege of riding on them. He sues for $5,000 damages.

Ferràn's Anti-Cholera Injections.—Dr. Ferrán, of Barcelona, recently sent a communication to the Paris Academy of Medicine, in which he seeks to establish his claim of priority in the treatment of cholera by anticholeraic injections, as practised by him in Spain in 1885. It was objected, however, that the results of these injections were not always as favorable as Ferrán claimed; indeed, the treatment was said to have been so injurious that it was formally forbidden by the Spanish government. Furthermore, Ferrán refused in 1885 to give up the formula of the composition of his vaccine, and still persists in this refusal. Under these conditions the academy has declared that it can neither give any decision as to the curative virtues of a preparation of which it knows nothing, nor give any support to Dr. Ferrán in his claim for priority.

A Leper Hospital in Iceland.—The Odd Fellows in Denmark have recently raised by subscription about $30,000 to build a hospital for lepers in Iceland. The city of Reykjavik has presented for the site the peninsula Langarnaes, which is about two miles out of town, and all running-expenses are to be borne by the government of Iceland. A law has recently been passed by the Althing empowering the health authorities in the island to compel the isolation of patients wherever such a precautionary measure seems to be necessary. The erection of the hospital is the direct outcome of an investigation by Dr. Edward Ehlers of leprosy in Iceland, which showed that the disease is steadily on the increase while little has been done hitherto to prevent its spread.

End of the Small-pox in Montreal.—The health authorities of Montreal have declared that the small epidemic of small-pox, from which the city has suffered for some time, is now over, there having been no cases there for upward of three weeks.

Trichinous Pork in Germany.—A man in Cologne was recently detected selling trichinous pork, and when brought up for trial said the hams and sides of bacon were of American origin and in their original packages, but the evidence at the trial disproved this. All the trichinous hams, fourteen hundred and ninety altogether, had been imported from Servia.

Reviews and Notices.

THE AMERICAN TEXT-BOOK OF OPERATIVE DENTISTRY. In contributions by eminent American Authorities. Edited by EDWARD C. KIRK, D.D.S., Professor of Clinical Dentistry, University of Pennsylvania, Department of Dentistry. Philadelphia: Lea Brothers & Co 1897.

ONE whose knowledge of dentistry was obtained only a few years ago but who has not kept thoroughly in touch with the rapid advances in this branch of medical science would be astonished on opening this work to see what has been accomplished in the past decade; almost a new science has been created. Dentistry is sometimes regarded as a special branch of surgery, but in reality it is a profession in itself, divided into almost as many specialties as is the profession of medicine. Because of this high specialization the preparation of this work has been intrusted to many hands, the writers, in addition to the editor Dr. Kirk, being Drs. R. R. Andrews, H. H. Burchard, C. S. Case, W. E. Christensen, D. M. Clapp, M. H. Cryer E. T. Darby, C. L. Goddard, L. H. Guilford, Louis Jack, L. Ottofy, C. N. Pierce, J. D. Thomas, and A. H. Thompson.

The work is divided into three parts, dealing respectively with (1) dental anatomy, histology, and embryology; (2) operative dentistry; and (3) dental orthopædics, including orthodontia and the modification of facial contours. The subject of prosthetic dentistry, including crown and bridge work, is touched upon only incidentally, the reader being referred to a companion volume for the discussion of this interesting subject. The volume, while intended primarily, of course, for the use of practising dentists, will be found of great interest and utility to physicians as well, not only because an intelligent conception of this cognate science is an accomplishment, but also because physicians are often called upon to do more or less dental work, and in any event should be able to recognize the nature of buccal disorders and to decide which belong properly within the domain of the dental surgeon. The book is profusely illustrated, handsomely printed, and well bound.

ENCYKLOPAEDIE DER THERAPIE. Herausgegeben von OSCAR LIEBREICH, Dr. Med., Geheimer Medicinalrath, o.ö. Professor der Heilmittellehre an der Friedrich-Wilhelms-Universitat, unter Mitwirkung von MARTIN MENDELSOHN, Dr. Med., Privatdocent der inneren Medicin an der Friedrich-Wilhelms-Universität, und ARTHUR WÜRZBURG, Dr. Med., Kgl. Sanitätsrath, Bibliothekar im Kaiserlichen Gesundheitsamte. Zweiter Band, II. Abtheilung, I. Lieferung. Berlin: August Hirschwald 1897.

THIS first section of the second part of the second volume of this excellent cyclopedia of therapeutics carries the work as far as Gly. Among the more important titles are flatulence, foreign bodies, furuncle, bile, gall-bladder, galvanocautery, gangrene, gastritis, secret remedies, brain, apoplexy, brain surgery, cerebral meninges, mental diseases, articular rheumatism, gout, facial atrophy, œdema of the glottis, glycerin, licorice, and glossitis. The high standard of this valuable work is fully maintained in the present fasciculus.

A HANDBOOK OF MEDICAL CLIMATOLOGY. Embodying its Principles and Therapeutic Application, with Scientific Data of the Chief Health Resorts of the World. By S. EDWIN SOLLY, M.D., M.R.C.S., late President of the American Climatological Association. Illustrated in black and colors. Philadelphia: Lea Brothers & Co. 1897.

THIS is an attempt, and a fairly successful one, to meet the want, which has long been felt, of an authoritative work on climatotherapy. The work is divided into three parts, the first dealing broadly with climatology in general and medical climatotherapy in particular; the second treating of climatotheraphy, strictly speaking; and the third describing special climates and individual health resorts. All parts of the world are considered, and the principal resorts of Europe in especial are described as regards the indications which they offer in the management of individuals, yet naturally the resorts in the United States receive particular attention and are described at greatest length. The author, as might be expected, betrays an enthusiastic admiration of the climate of Colorado, which is not shared by all who have experienced its rigors. Yet his praise is innocent enough, and the reader can temper it sufficiently by noting the temperature statistics. The book is provided with a number of charts showing elevation, rainfall for different seasons, etc. We can safely recommend Dr. Solly's work to all who need a book of reference on climatotherapy, and this means all practising physicians.

THE POCKET THERAPIST. A Concise Manual of Modern Treatment for Students and Junior Practitioners. (Arranged alphabetically for ready reference.) By THOS. STRETCH DOWSE, M.D., F.R.C.P. Ed. Bristol: John Wright & Co. 1897.

THIS is a useful little work which contains many a hint as to treatment that may serve one in good stead when worried by an obstinate case. The author has not jumbled together a mass of prescriptions for every imaginable malady, but suggests usually one line of treatment for each disease, recommending in many cases that which he has found by practical experience to be of greatest value.

THE DISEASES OF WOMEN. A Handbook for Students and Practitioners. By J. BLAND SUTTON, F.R.C.S. Eng., Surgeon to the Chelsea Hospital for Women, Assistant Surgeon, Middlesex Hospital, London; and ARTHUR E. GILES, M.D., B.Sc., F.R.C.S. Edin., Assistant Surgeon, Chelsea Hospital for Women, London. With 115 illustrations. Philadelphia: W. B. Saunders. 1897.

THIS is a handy volume of small size. The entire subject of gynæcology is satisfactorily covered in the four hundred and thirty pages, though necessarily the different topics are treated with considerable brevity and conciseness of language. The binding is poorly done, many of the pages having become loose during the reading of the book by the reviewer.

THE OPHTHALMOSCOPE. A Manual for Students. By GUSTAVUS HARTRIDGE, F.R.C.S., Surgeon to the Royal Westminster Ophthalmic Hospital, Ophthalmic Surgeon to St. Bartholomew's Hospital, Chatham, etc. Third Edition. Philadelphia: P. Blakiston, Son & Co. 1897.

THESE instructions in the use of the ophthalmoscope are exceedingly clear and understandable, and any one who might find it necessary to learn how to use this really indispensable instrument, and had not the advantage of a teacher, could almost certainly teach himself by means of this book. The comprehension of the text is greatly facilitated by the illustrations, of which there are over seventy, some of them colored.

NOTES ON PATHOLOGY. For Students' Use. By W. A. EVANS, B.Sc., M.D., Professor of Pathology in the Medical School in the University of Illinois, Professor of Pathology in the Milwaukee Medical College, Pathologist to the Columbus Medical Laboratory, etc. Chicago: The W. T. Keener Company. 1897.

THESE "notes" are well and systematically arranged; probably after the order of the author's lectures, and so will serve admirably for the use of those who have the privilege of sitting under his instruction. But other students may profit by them as well, and can take their own notes when the lecturer expresses his facts in another way. To facilitate this extra note taking, the book is so printed that every other page is blank. The book is of a handy size to be carried to the lecture room.

A TEXT-BOOK OF DISEASES OF WOMEN. By CHARLES B. PENROSE, M.D., Ph.D., Professor of Gynæcology in the University of Pennsylvania, Surgeon to the Gynecean Hospital, Philadelphia. Illustrated. Philadelphia: W. B. Saunders. 1897.

THE appearance of a new work on gynæcology at this time does not strike us as in response to an urgent demand from a profession thirsting for knowledge on an obscure subject. This book, however, possesses the advantage of having been written professedly for the student, and may possibly therefore be of service to the practitioner who grudges the time wasted in reading details of anatomy and physiology. Dr.

Penrose refers his readers to the ordinary anatomical text-books if they lack the necessary familiarity with these elements. In discussing treatment, the author recommends usually but one method for each individual disease, thereby avoiding creating confusion in the mind of the student or young practitioner who turns to the work for instruction. The illustrations are fairly artistic and are for the most part helpful.

CONVERGENT STRABISMUS AND ITS TREATMENT. By EDWIN HOLTHOUSE, M.A., F.R.C.S., Surgeon to the Western Ophthalmic Hospital. Philadelphia: P. Blakiston, Son & Co. 1897.

THIS is an essay based upon a careful study of the cases of squint coming under treatment during a period of about two years in one of the classes at the Royal London Ophthalmic Hospital. The author shows quite conclusively that strabismus is not such a threshed-out subject as it is generally supposed to be, for he advances much that is novel in this study, and makes suggestions that may well serve as a basis for other and further investigations in this interesting field.

CRIME AND CRIMINALS. By J. SANDERSON CHRISTISON, M.D., formerly of the New York City Asylums for the Insane, Blackwell's Island and Ward's Island, etc. Chicago: The W. T. Keener Company. 1897.

DR. CHRISTISON may well pray to be saved from his friends, for he states in his preface that it was they who urged him to publish in book form a series of articles contributed to the Chicago *Tribune*. Separately the sketches of types of criminals might have served to amuse the readers of a Sunday edition, but collectively they lack unity, weight, and all the qualities necessary to make a useful treatise on criminal anthropology or any other subject.

DIE GESCHICHTLICHE ENTWICKELUNG DER SOGENANNTEN HIPPOKRATISCHEN MEDICIN IM LICHTE DER NEUESTEN FORSCHUNG. Eine geschichtlich-medicinische Studie. Von DR. MED. FRANZ SPAET. Berlin: S. Karger. 1897.

THIS is an interesting study, by a man who knows his subject, of the teachings of Hippocrates and, incidentally, of their influence upon the development of scientific medicine of the present day. The brochure is a valuable addition to the literature of historical medicine.

THE EDINBURGH MEDICAL JOURNAL. Edited by G. A. GIBSON, M.D., F.R.C.P. Ed. New Series, Vol. I. Edinburgh and London: Young J. Pentland. 1897.

THIS bound volume of the first of the new series of this old established journal is one which the new editor may well regard with pride. It is filled with articles of permanent value, written by well-known authorities, and is profusely and excellently illustrated.

DIFFERENTIAL DIAGNOSIS AND TREATMENT OF COMA. Embracing Points in the Lectures of, and Revised by, A. P. GRINNELL, M.D., Medical Department, University of Vermont. Arranged by GEORGE A. HUNTLEY, M.D., Burlington, Vt.

THIS is a well-arranged table of the chief points in the differential diagnosis of the various forms of coma. Ambulance surgeons and police surgeons, the former especially, might avoid many serious and humiliating blunders if they would make themselves thoroughly familiar with the symptoms of the different states of unconsciousness as arranged in this chart.

DISEASES OF THE LIVER, GALL BLADDER, AND BILIARY SYSTEM. Their Pathology, Diagnosis, and Surgical Treatment. By H. J. WARING, M.S., B.Sc. Lond., F.R.C.S. New York: The Macmillan Company. 1897.

AFTER a concise description of the anatomy and physiology of the liver, the author describes in an exhaustive and thorough way all the diseases of this organ and its attachments. Waring does not recognize a "hæmatogenic" jaundice, and is herein in harmony with most recent writers; for it has been conclusively proved that if the liver be extirpated, or rendered functionless by isolation, no accumulation of biliary constituents results. The section on symptomatology and diagnosis of "abscess of the liver" is one of especial merit by reason of the clearness by which the author depicts the characteristic signs by which the existence of this condition can be recognized. The operative treatment in affections of the liver and gall bladder is given full weight and is minutely described. As a whole the book can be highly recommended and the reader will greatly profit by its perusal.

BULLETIN OF THE HARVARD MEDICAL ALUMNI ASSOCIATION. No. 10. Catalogue. Boston. 1897.

THIS number is given up almost wholly to the local lists of members, etc., including an alphabetical list of members

ILLUSTRATED SKIN DISEASES. An Atlas and Text-Book, with Special Reference to Modern Diagnosis and the Most Approved Methods of Treatment. By WILLIAM S. GOTTHEIL, M.D., Professor of Skin and Venereal Diseases at the New York School of Clinical Medicine, etc. New York: E. B. Treat & Co. 1897. Portfolios 7, 8, and 9.

THE uncolored pictures of this atlas are the best, and in saying this we would not convey the impression that they are above the average. Indeed, unless the label were attached, difficulty would at times be found in telling whether an eruption were papular or pustular, and the old lady with furunculosis of the face might as well have been said to have one of a half-dozen affections. The tints of the lesions, of the surrounding healthy skin, of the hairy portion, and of the background do not show sufficient contrast, and it is difficult to tell in some of the lithographs whether the blueness of the skin is a pathologic or an artistic effect. There have been so many skin atlases produced of late that one scarcely sees what field can be filled by works other than those of exceptional merit of production. The text is good.

EXCRETORY IRRITATION AND THE ACTION OF CERTAIN INTERNAL REMEDIES ON THE SKIN. By DAVID WALSH, M.D. Ed., Physician to the Western Skin Hospital, London, W. London: Baillière, Tindall & Cox. 1897.

THIS is a little work of sixty odd pages, neatly bound in red, comprising an inaugural thesis and a paper read at the London Congress of Dermatology. The theory is maintained that certain eruptions are due to direct irritation of excretory glands in the skin, and that if the theory is correct their internal disorders must often depend upon a like cause. On page 61, where Dr. Duhring of New York is referred to, the author probably means Dr. Duhring of Philadelphia.

OM ENDOKARDITI, DENS PATHOLOGISKE ANATOMI OG ÆTIOLOGI. Af FRANCIS HARBITZ, 1ste Assistant ved Rigshospitalets Pathologisk-Anatomiske Institut. Kristiania: Steenske Bogtrykkeri. 1897.

THIS work contains the results of the author's studies during a period of three years in the Pathological Institute in the public hospital at Christiania. He divides the cases into two classes, according as the endocarditis is manifestly of infectious origin or as a careful study fails to demonstrate any such pathogenesis. The book is a valuable addition to the world's literature of this interesting subject.

LE TRAITEMENT DU MAL DE POTT. Par le DR. A. CHIPAULT. Paris: Masson et Cie. 1897.

THE author of this brochure has recently revived the ancient method of forcibly straightening out the kyphotic spine in Pott's disease, and here describes it, as well as his method of apophyseal ligatures. The book is one which orthopædic surgeons will read with interest, as it is, we believe, the first presentation in connected and systematic form of the therapeutic measures so ably advocated by Dr. Chipault.

FORMULAIRE DES MÉDICAMENTS NOUVEAUX POUR 1897. Par H. BOCQUILLON-LIMOUSIN, Pharmacien de Première Classe, Lauréat, Medaille d'Or de l'École de Pharmacie, Membre des Sociétés de Pharmacie et de Therapeutique. Avec une Introduction par HENRI HUCHARD, Membre de l'Académie de Médecine, Médecin de l'Hôpital Necker. Paris. Librairie J.-B. Baillière et Fils. 1897.

THIS 1897 edition of the "Formulary" is an improvement in some respects over the last. In others it is not. Almost

everything new in the way of methods, modes of administration of remedies, was given in the former volume. New remedies, good and bad, have been especially considered in the present work. So many drugs still in their experimental stage find a place here that it is only those who have much time to devote to their study who will care to read the book through.

PERIODISCHE DEPRESSIONSZUSTÄNDE UND IHRE PATHOGENESIS. Von PROF. C. LANGE in Kopenhagen. Deutsch von Dr. HANS KURELLA. Hamburg: Leopold Voss. 1896.

THIS little work treats of the blues in a scientific way, and elevates the condition to the dignity of an actual disease. The author shows that periodical mental depression, while resembling in some respects a mild form of melancholia, is yet far removed and easily differentiable from it. The cause he finds to reside in the action of uric acid upon the nervous centres, and deduces from this pathogenesis a rational therapy.

SOME ASPECTS OF INFANTILE SYPHILIS, BEING THE HUNTERIAN LECTURES DELIVERED AT THE ROYAL COLLEGE OF SURGEONS IN 1896. By J. A. COUTTS, M.B. Cantab., M.R.C.P., formerly Professor at the College, Physician to the East London Hospital for Children. London: Rivington, Percival & Co. 1897.

A LITTLE book of one hundred and thirty pages, just large enough to take in the pocket for an hour's journey. The text is large and pleasing to the eye, and the subject matter is pleasantly put.

THE RETROSPECT OF PRACTICAL MEDICINE AND SURGERY. Being a Half-Yearly Journal, Edited by JAMES BRAITHWAITE, M.D. Lond., Obstetric Physician and Surgeon to the Leeds General Infirmary; Assisted by E. F. TREVELYAN, M.D. Lond., B.Sc., M.R.C.P. Volume CXIV. New York: G. P. Putnam's Sons. January, 1897.

THE "Retrospect" maintains its general average of excellence, and covers in a brief way the literature of the half-year in an essentially practical manner. The index, covering several volumes, gives facility for looking up quickly any given subject.

AUTOSCOPY OF THE LARYNX AND THE TRACHEA. Direct Examination without Mirror. By ALFRED KIRSTEIN, M.D., Berlin. Authorized Translation (Altered, Enlarged, and Revised by the Author) by MAX THORNER, A.M., M.D., Cincinnati, Ohio, Professor of Clinical Laryngology and Otology, Cincinnati College of Medicine and Surgery. Philadelphia: The F. A. Davis Company. 1897.

THE aim of this little work is to show how the air passages can be directly examined and treatment applied without the use of complicated instruments. It is the author's aim to add to prevailing methods rather than to supplant them.

The illustrations add much to the ready understanding of the methods of direct inspection of the larynx and trachea by pressure upon the tongue. The translation has been well done.

A PICTORIAL ATLAS OF SKIN DISEASES AND SYPHILITIC AFFECTIONS. From the Museum of the St. Louis Hospital, Paris. Edited by J. J. PRINGLE, M.B., F.R.C.P. Parts VIII. and IX. London. The Rebman Publishing Company, Ltd.; Philadelphia: W. B. Saunders. 1897.

THE illustrations in these two numbers are in the same class as those which have previously appeared. That of pustular scabies is very true to life, while the several pictures of chilblain lupus give a good idea of this rather unusual condition. The woodcut pictures accompanying Jacquet's article on epithelioma arising from lupus tissue, as well as the colored plate, show what fearful ravages this malignant disease can make in the region of the face. There is a very fair picture of lichen planus, but not of a strictly typical case.

Comparatively, we cannot see wherein this work possesses advantage over the large and very complete atlases of Morrow and of Taylor, so recently published in this country. It would almost seem as if medical-book publishers were, some of them, overreaching themselves in crowding upon the profession such a multiplicity of books upon the same subject. This, however, is their affair, and our part is only to advise our subscribers that it is well to exercise caution in buying books, however good, when they may have already in their libraries others which are not excelled.

MEDICAL AND SURGICAL REPORT OF THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK. Volume II. January, 1897. Edited by ANDREW J. MCCOSH, M.D., and WALTER B. JAMES, M.D. New York: Trow Directory Printing Company.

BESIDES the usual number of interesting reports of cases and operations, the present volume is well illustrated with views of the hospital operating-rooms, etc., from photographs by Dr. Stevens. A well-illustrated article on renal tuberculosis, by F. Tilden Brown, deserves mention. Drs. McCosh and James are to be congratulated on the appearance of the second volume.

INTERNATIONAL CLINICS: A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment. By Professors and Lecturers in the Leading Medical Colleges of the United States, Germany, Austria, France, Great Britain, and Canada. Edited by JUDSON DALAND, M.D., University of Pennsylvania, Philadelphia; Instructor in Clinical Medicine and Lecturer on Physical Diagnosis in the University of Pennsylvania, Assistant Physician to the Hospital of the University of Pennsylvania; J. MITCHELL BRUCE, M.D., F.R.C.P., London, England. Physician to and Lecturer on the Principles and Practice of Medicine in the Charing Cross Hospital; DAVID W. FINLAY, M.D., F.R.C.P., London, England; Professor of Practice of Medicine in the University of Aberdeen, Physician to and Lecturer on Clinical Medicine in the Aberdeen Royal Infirmary. Volume I. Seventh Series. Philadelphia; J. B. Lippincott Company. 1897.

THIS very praiseworthy publication comes with fresh welcome to the library table. The lectures are, as usual, of a bright and instructive nature, and all show evidence of care in preparation. Dr. Daland, the able editor, selects his contributors with much judgment, and the list comprises well-known names.

There are in the present volume forty-three articles, covering the various branches of medicine, and written mostly by specialists in the particular subject discussed. England, France, Germany, the United States, and often other countries are represented. The illustrations are well made, and the volume, as a whole, is produced with careful attention to detail.

Habitual Constipation.—The causes of habitual constipation are: Heredity; the habit of suppressing the desire; unsuitable diet—too abundant, deficient in water, too easily absorbed, or insufficient in variety; sedentary habits (although obstinate habitual constipation may occur even in those who lead an active life); disturbances in the circulation (heart disease, mechanical pressure, pregnancy); displacement of the bowel; intestinal adhesions. The treatment is given as follows: (1) dietetic, (2) physico-mechanical, (3) medicinal. In the first method such foods should be given as are known to increase peristalsis. The "physico-mechanical" includes suitable massage (often of great value), electricity, and enemata. The disadvantage of enemata is that ultimately small quantities of fluid do not suffice, and large quantities overdistend the intestine and become useless. Regular attempts at defecation with slight pressure are recommended. Medicinal treatment is discussed under two groups, mild and more powerful purgatives. An efficient rhubarb preparation is very useful. Calomel is very useful in children. Castor oil is unsuitable for constant use. Large injections of olive oil are of value. *Berlin. Klinik.*

Clinical Department.

REPORT OF A CASE OF FRACTURE AT THE BASE OF THE SKULL, WITH A PECULIAR HISTORY.

By L. W. ATLEE, M.D., U.S.N.

H. G——, white, native of England, aged seventy years, at present a pensioner of the United States; former occupation, sailor. He was brought to this hospital on December 2, 1896, at 3:45 P.M., in the police-patrol wagon, with a history of having been picked up bleeding profusely from the left ear. On admission he showed evidences of alcoholism; bleeding had stopped. He was placed in bed and bromide of potassium was administered, other treatment being expectant.

December 3d, examination revealed contusion of the lateral occipital and mastoid region on the left side. The patient complained of constant pain in the head, and could not lie with the occipital region on the pillow. It was difficult to arouse him, but he was rational when spoken to loudly. Urine and fæces were passed.

December 4th, he was transferred to the care of another surgeon.

"December 5th, patient was rather restless yesterday, getting up and wandering about the building; there is some mental impairment. His replies to questions are irrational; he is easily confused, does not recognize his surroundings or attendants. He admits that he has headache, although he does not complain; is rather drowsy and spends most of the time in sleeping. The bowels were well opened by repeated doses of magnesium sulphate. He is rather brighter to-day, more quiet. There is no muscular impairment. Pupils normal. Tongue slightly coated. Pulse good, rather full, regular. No fever. Marks of contusion about left ear and occipital region of scalp. Treatment: Rest in bed; potassium bromide, gr. xx., four times a day. Ice bag to head. Milk diet.

"December 6th, better; more quiet and rational. Mind, however, not entirely clear. Bromide continued.

"December 8th, improving slowly; mind still clouded. Treatment continued.

"December 14th, improving slowly; is strong physically, but the mind is still impaired. Still has some headache. Treatment continued.

"December 16th, about the same. Mind continues impaired. His talk is rambling and foolish. Last night he got up in the nurse's absence, and was found wandering about the building. Appetite and digestion good. Bowels regular. Spends the greater part of the time in sleep. When closely questioned he says he has headache, but he does not complain unless questioned. No signs of contusion about the scalp except slight discoloration behind the left ear. Bromide continued. He was placed in small ward with two other patients, and the doors and windows were secured so that he could not wander about.

"December 23d, there is very little if any mental impairment. Is up and about under charge of attendant. General condition good. Bromide continued.

"December 31st, mental condition slightly improved. Is regaining memory and is now conscious of his whereabouts. Medicine stopped. To-day placed in general ward.

"January 4th, mental condition greatly improved; is rational and conscious of his surroundings, but memory is still impaired. General condition good."

January 5th he was discharged, having been under treatment thirty-three days. An interval of two months passed, during which he attracted no special notice in the place he lived, being able to take care of himself, though his associates remarked about him that he was never "quite the same" as before the accident.

On March 9, 1897, he was brought to this hospital in a small pushcart, with a history of having been found lying unconscious on the sidewalk in the street. Being a very small man, not more than five feet in height, he was taken up in the arms of one of the nurses and carried into the ward. A thick dark stream of blood was oozing from the left external auditory meatus and running down his cheek, collar, and coat. He was unconscious, there was a strong odor of alcohol about his breath. Pulse, 64, regular; respiration, 18. Pupils normal, reacting slightly to light stimulus. There was no perceptible mark of injury to the head. As he was being undressed he partially regained consciousness, and, looking from one to the other of the people about his bed, he said very distinctly, "I am a poor old sailorman, and wouldn't harm any one." As soon as his clothes were removed he was placed in bed with the head slightly elevated. By this time, some ten minutes after his admission, he could be aroused by a loud voice, but he began slowly to pass into a deeply comatose condition. His pulse and breathing became slow and irregular; the pupils were somewhat contracted, not reacting to light, but were even. The blood continued oozing slowly from the left ear. About 3.30 P.M. swelling and bogginess were perceptible about the left mastoid and occipital regions. At 4 P.M. he began to gasp and choke as if some foreign body had gotten in the pharynx, and ejected from his mouth and throat a mass that might equal six or seven ounces (of blood clots) The ear still continued to ooze, and at intervals of about three-quarters of an hour he ejected quantities of clotted blood. At 9 P.M. he ceased to breathe.

Necropsy, performed seventeen hours after death: On reflexing the scalp the parts about the left mastoid and occipital regions were seen to be infiltrated with dark semifluid blood. On removing this there was plainly seen a horizontal fracture in the mastoid portion of the temporal bone, extending backward horizontally through the occipital bone almost to its centre. The skull cap was removed after being carefully sawed through, and the dura mater raised. The whole left hemisphere was covered by a thick, well-formed clot, thickest over the petrous portion of the temporal bone, leaving a marked depression in the brain substance when it was removed. The brain was now lifted out and the dura mater removed from the fossæ; then, by introducing the handle of the scalpel into the external fracture in the mastoid and making gentle prying movements, the fracture could be traced by the blood caused to well up along its track, which passed horizontally backward across the occipital bone to near the protuberance, and forward across the middle fossa through the petrous portion of the temporal bone, through the greater wing of the sphenoid to somewhere in the neighborhood of the foramen ovale.

Remarks: We have here a case involving some especial points of interest. In the first place it is fairly reasonable to conclude that there was fracture at the base of the skull on the first admission, though hemorrhage from the ear alone after injury to the head is not necessarily surely symptomatic of fracture, unless it is prolonged for several days. The ear bleeding, in conjunction with the swelling, coming on some hours after the injury, the pain and mental condition described in the history of the case, tend strongly to this conclusion. Adding to this the fact that the man is of short, slight build, and also the statements of those who saw him fall as he was walking on the pavement before his first admission, and considering

the extent of the injury shown at the necropsy, there must have been a fracture already existing at the time of his second fall. In the "International Encyclopædia of Surgery,"[1] edited by John Ashhurst, Jr., M.D., it is stated that "even months or years after a fracture at the base no attempt at union may be found, while in other cases the union may be merely by fibrous tissue or partly a thin plate of bone, partly membrane."

The immediate effects of fractures of the skull are the same as those from a solution of continuity in any bone, viz., rupture of blood-vessels, of the sinus of the diploë, of the middle meningeal artery, effusion of blood, separation or tearing of the pericranium and of the dura matér—phenomena that, owing to the nature of the parts where they have occurred, take on a most serious character, and become not so much complications as new diseases, much more disquieting than the lesion which they have followed—such as compression of the brain substance by blood, pus, fragments of bone, or wounds of the brain itself by spiculæ of bone; and there is also the probability of meningitis or encephalitis arising subsequently.

In this case, unfortunately, the idea of examining the vessels about the seat of fracture that had given rise to the hemorrhage did not suggest itself until the dura mater had been disturbed, but the immediate cause of death was the large effusion on the brain substance.

In these cases absolute rest is recommended as treatment, to prevent injury to the adjoining parts by the movement communicated to the fractured bone, and secondarily to ward off the possibility of inflammation of the brain or its membrane.

From the greatly lessened danger of wound infection in the present state of asepticism and our advanced knowledge in brain surgery, the use of the trephine for the relief of pressure from hemorrhage following a fracture is suggested as a surgical procedure which in such cases might be practicable for good. In the first half of the present century effusion following fracture was given among the causes calling for the use of that instrument.[2] But later it was discontinued by the experience particularly of Desault, who found it unsuccessful; and in Nélaton's "Pathologie Chirurgicale," Paris, 1847, tome ii., p. 597 ("Affections Traumatiques de la Tête"), the author states that of sixteen trephinings for traumatic effusions not one was successful. On the same page, however, he gives the following advice: "This operation is only rationally indicated in the cases in which a wound of the scalp exists with the fracture and the hemiplegia indicates the existence of an effusion at the seat of fracture. In these cases the air can reach the seat of fracture, and the trephine adds but little to the already existing dangers." Now our improved aseptic surgical technique should make this view have much less weight than at the time this advice was written.

As to the extent of operative interference that may sometimes be undertaken with a successful result in these injuries, and even in the days when asepticism played but a small rôle, the following case is quoted from the above-mentioned classical work of Boyer, p. 71, vol. v.: "Dionis relates in his 'Cours d'Opérations' that a man, falling from his horse, struck his head on the pavement and remained unconscious. The surgeon found on the frontal bone, which was fractured, a wound which he dilated sufficiently to apply the trephine. This operation, performed the day after the fall, produced no change in the sick man's condition, who still remained unconscious. Three days after this a swelling appeared on the occipital bone. Dionis opened this and discovered a fracture by contrecoup in this bone. A trephine was applied in this neighborhood, and a great deal of blood came out from the two openings in the cranium, which brought about a perfect recovery."

We might conclude these remarks with the advice of the famous French surgeon to his class: "Above all, gentlemen, do no harm."

[1] Vol. v., p. 37.

[2] See "Traité des Maladies Chirurgicales et les Opérations qui leur Conviennent," by Boyer, Paris, 1834, tome v., p. 75.

EXFOLIATION OF THE MUCOUS MEMBRANE OF THE ŒSOPHAGUS AND PART OF THE STOMACH IN A COMPLETE CAST AFTER CORROSIVE POISONING.

By J. C. BROWN, M.D.,

[illegible], PA.

On the 27th day of April, 1897, I was called out in the country about four miles. I found on my arrival, about 5 P.M., a Mr. B——, thirty-two years old, about six feet in height, strong and robust. He had a rather anxious expression and was unable to speak above a loud whisper, but said he had no pain to speak of. His temperature was 100° F.; pulse, 110.

Upon opening the mouth I found the mucous membrane falling in shreds from every part of the mouth and pharynx, excepting about an inch of the anterior part of the tongue and about the same of the anterior part of the roof of the mouth.

He told me that on the previous day about 10 A.M., while walking along the road, he found a bottle containing what he supposed to be whiskey and drank it; that he immediately experienced a burning sensation in the mouth and throat, and was taken intensely sick at his stomach; that he went into a barn, where he remained until the next morning, and that he vomited and retched nearly all of the remainder of that day and all night, being unable to swallow anything after he had taken the contents of the bottle; that he came to a hotel in Smethport in the morning about 6 A.M. and went to bed, where he remained until about noon; that he then got up and walked home, a distance of about two miles over a steep hill, and that he stopped on the way at springs and tried to drink but could not swallow a drop.

Now, of course, seeing the condition of the mouth, I knew that if the material which caused it was also taken into the stomach there must be a great deal of destruction of mucous membrane, but I had only his word for it, and did not know but he might be mistaken as to swallowing it; besides, the symptoms did not indicate the same condition extending into the stomach; therefore I could say nothing as to prognosis.

I left a mouth wash containing tannic acid and antiseptics, also an antiseptic solution to use with the atomizer. I ordered milk and white of egg alternated with extract of beef by enema once in four or five hours and rubbing with alcohol three or four times daily, and said I would see him the following day if I did not hear from them. The next day I received word that he was somewhat better and had been able to swallow some water.

On the 29th I was called and found that at the suggestion of his mother he had swallowed two teaspoonfuls of kerosene oil, which produced a great deal of nausea and vomiting; otherwise he was about the same as when last seen.

He continued in about this condition, the corroded portions of the mouth, of course, turning somewhat dark by the mouth wash, temperature ranging between 99° and 102° F., pulse between 80 and 120, spitting up a great deal of purulent material, sometimes mixed with blood, until the 7th of April, when from 2 A.M. until 5:30 A.M. he had very profuse hemorrhage, vomiting nearly a pint of blood every half-hour, so the nurses

said, until I saw him about 5:30 A.M. and gave him a hypodermic of one-fourth of a grain of morphine sulphate and one-thirtieth of a grain of strychnine nitrate, which seemed to control the hemorrhage pretty well. He had another hypodermic about 11 A.M.; there was not much hemorrhage during the day.

About 5 P.M. of the same day I called, and before I got into the house the patient's brother came to me, somewhat excited, and said that his brother had just vomited something very peculiar. He brought it to me, and at first sight I thought it was a blood clot, but after washing it I found it to be the mucous membrane and submucous tissue of the œsophagus and stomach, and it was afterward examined by Dr. H. U. Williams, pathologist in the University of Buffalo, and found to contain also a part of the muscular coat of the œsophagus. The œsophageal portion was in perfect shape with the exception of a few small holes which might have been made in the effort to expel it, which it was said was quite difficult.

The stomach portion was torn somewhat in strips, due perhaps to a more pronounced effect of the corrosive agent. The whole was about sixteen inches long. It can be seen in the museum of the University of Buffalo. After the vomiting of this membrane the hemorrhage continued very profuse for thirty-six hours and then stopped; there was no hemorrhage afterward. He could swallow after this, but we did not allow him to do so for three days, and then began by letting him swallow a few teaspoonfuls of chicken soup, then milk, and milk and brandy in small quantities, gradually increasing until on the fifteenth he was taking about a quart of milk in twenty-four hours beside some toast and one or two raw eggs, and of course all this time we kept up the enemata of milk and extract of beef, which, excepting once or twice, were well retained.

On the 18th of May we took him to the Buffalo General Hospital, where he was seen by Dr. Allen A. Jones. We brought him back the next day, he standing the ride very well, and he continued about the same until May 30th. I will say here that I was satisfied that the food which he was taking by the stomach was not being digested and I found afterward that it was simply passed on into the intestines, where it was stored for a time and then passed per rectum in about the same condition in which he took it. His brother said that at one time four or five quarts passed per rectum in an undigested condition. You will ask, why was anything given by the stomach? Simply because he craved it and retained it without distress, and, as death was inevitable, I thought we might just as well give it to him.

On the 30th of May I tried to introduce a tube into the stomach. I could get it down to within three or four inches of the stomach but no farther. I tried again on the following day with the same result, showing that contraction had already taken place at that point, and, as we must expect in such cases, I found afterward that it had contracted the whole length of the œsophagus.

After my visit on the 31st of May I did not see him again until the 10th of June, but heard from him frequently. I learned from his brother that on the 1st of June he began vomiting shreds of a brownish material, of very foul odor. This continued for two or three days, followed by a yellowish material still more foul smelling than the other, and lasted for a few days. I can form no opinion as to what this material was, as I have only the nurse's description of it. At this time the taking of food by the stomach had been stopped. He continued in this condition, gradually getting weaker, vomiting and retching a great deal, until he died on the 24th of June.

I was not allowed the opportunity of making a post-mortem, which would have been most interesting. The length of time which had elapsed after he had swallowed the material and his inability, feigned or otherwise, to tell us what he did with the bottle prevented our finding out just what the corrosive was.

Now, of course, corrosive poisoning is not an uncommon occurrence, but the interesting points to me are: What corrosive would bring about the separation of those structures to such a depth; and why did not death occur from hemorrhage during or after the separation of those membranes? Again, how was he able to take such a large amount of material into the stomach without distress?

I forgot to mention that while he could perform the act of swallowing satisfactorily from the time he vomited the cast up to within two weeks of his death, fluids nearly always produced coughing, owing, I think, to the partial destruction of the epiglottis allowing some of the fluid to trickle into the larynx. I should have made an effort to keep the œsophagus open had I not been satisfied that the stomach was also destroyed, as far as its digestive function was concerned.

Perhaps it would not be out of place to state that this patient suffered a great deal with hiccough, and I found that it could be stopped nearly always by pressing the tongue, as in an examination of the pharynx, and holding it down twenty or thirty seconds; then it would be sometimes an hour and sometimes several hours before another paroxysm.

TWO COMPLICATED ABDOMINAL HYSTERECTOMIES.[1]

BY AUGUSTIN H. GOELET, M.D.,

NEW YORK,

PROFESSOR OF GYNÆCOLOGY IN THE NEW YORK SCHOOL OF CLINICAL MEDICINE.

These cases are particularly interesting on account of the difficulties encountered in removing the specimens here presented.

The first patient, Miss F——, aged twenty-three years, was referred to me by Dr. S. P. Cahen, of this city, under whose care she had been for several years, during which time she had a severe and prolonged attack of pelvic peritonitis following a short time after dilatation and curettage for dysmenorrhœa. When she first came under my observation in November last she had a daily temperature ranging from 100° to 104° F., which she had been having for a month or more, and she was emaciated and suffered constant pain. At that time it was impossible to make a satisfactory examination, but the whole pelvis appeared to be a mass of exudation, including the whole pelvic contents. She was put upon daily applications of faradization and immediately experienced relief. After a few weeks the temperature returned to the normal point and she had no further exacerbations. At this time examination showed that much of the exudation had been absorbed and the uterus, which was at first fixed, was somewhat movable and it could be outlined. On the left there was a mass of exudation sensitive to touch. On the right, where the exudation had to a great extent disappeared, neither the ovary nor the tube could be made out. The specimen shows them glued to the front of the fundus.

The condition at this time pointed strongly to the necessity for an abdominal operation and the subsequent treatment was instituted with that end in view. The faradization was continued three or four times each week and she was put upon tonics and a nutri-

[1] Presented at the May meeting of the New York Medico-Surgical Society.

tious diet. She improved steadily and soon began to feel that she could resume her duties.

She entered my sanatorium April 5th, and on the 6th the operation was performed. On opening the abdomen marked congestion of the peritoneal vessels was noticed and the intestines were adherent everywhere to the lower region of the abdominal wall, to the sides of the pelvis, and to the uterus and bladder. These were separated with great difficulty, particularly those posterior to the uterus, and those binding the sigmoid flexure to the mass on the left of the uterus. In separating the adhesions at this point the gut was opened, but it was promptly closed by Lembert sutures. Subsequently an abscess was broken into, which proved to be an ovarian abscess. This constituted the mass on the left, surrounded by a thick wall of exudation.

The tube and ovary on the right, as the specimen shows, were folded over on the front of the fundus and were fastened firmly there by dense adhesions. Several small cysts in this mass were ruptured in separating the adherent loops of intestines. At once it was seen that removal of the uterus with both masses was imperative.

To shorten the operation, which had already consumed considerable time, supravaginal amputation was done and the cervix left. The pelvis was flushed with normal salt solution, which was permitted to remain on closing the abdomen. Something over two hours was consumed in completing the operation, and the patient was gotten to bed in a fairly good condition. The highest temperature for the first four days was 100° F. On the morning of the fifth day the temperature was 99° F., but the dressing was found to be soiled by pus which was oozing from the lower angle of the abdominal wound. An opening was made in the posterior cul-de-sac of the vagina and a considerable amount of pus was evacuated. A drainage tube was inserted through the vaginal incision, and the lower angle of the abdominal wound was opened and a drainage tube inserted into the pelvis. Through-and-through irrigation with bichloride solution was thoroughly done. The temperature at once dropped to 98° F.

General sepsis was at this time manifest, but she improved very much for the first few days after this. On the third day after, however (the eighth day after the operation), she had a sharp chill and the temperature jumped up to 105° F. She continued to sink from overwhelming sepsis in spite of good drainage and repeated irrigation, and died April 19th, thirteen days after the operation.

The autopsy showed that the abdominal wound was healed except at the lower angle where the drainage tube was inserted; the pelvic roof was also healed, as had the wound in the intestine, but a perforation of the gut was found a short distance from the rent. This probably occurred because of some thin point in the wall of the gut, left where the adhesions were separated.

The other patient, Miss R——, aged forty-four years, was referred to me by Dr. Grace Pulver, of Torrington, Conn. In December she had a pelvic peritonitis and again in February of this year she had another attack. Following this there was an intermittent bloody discharge from the uterus, which at times amounted to a sharp hemorrhage. During this time she had acute exacerbations of fever, and later the discharge became offensive. March 17th of this year she entered my sanatorium and two days later an examination was made under anæsthesia. The uterus was partially fixed and to the left there was a mass involving the tube and ovary on that side. On the right the appendages appeared to be normal. A thorough curettage was done and the scrapings were preserved for microscopical examination. The uterus was soft and easily dilatable, and the endometrium was broken down and spongy.

She improved very much after the curettage, the bleeding ceased, and there was no return of the increased temperature from which she had been suffering for so long a time previously. But the microscopical examination showed that the uterus was the seat of adeno-carcinoma and a hysterectomy was therefore decided upon.

The operation was done April 7th. On opening the abdomen the intestines were found to be adherent everywhere to the pelvic organs. The adhesions to the uterus and bladder were easily separated, but those binding the intestines to the mass involving the left broad ligament were very firm and unyielding. A small abscess in the mass was invaded in the process of enucleation, but with care infection of the peritoneum was avoided The mass, which was soft and friable in places, was firmly attached to the left posterior wall of the pelvis in close proximity to the ureter, and was with difficulty removed. After getting it free from the pelvic wall the uterus was removed in the following manner, viz.: the left uterine artery was tied and divided after incising the peritoneal covering of the uterus in front and behind and stripping it down. The cervix was then separated from the vagina at the cervico-vaginal fold all around; then the right uterine artery was clamped and divided between the clamp and the uterus; next the round ligament with its vessel was clamped and divided close to the uterus; and finally the right ovarian artery was clamped and divided and the uterus with the mass was lifted out. This left a clear field for tying off the vessels on the right. The vaginal vault and pelvic roof were closed by a continuous suture of fine chromicized catgut and no drainage was employed.

The patient was lowered from the Trendelenburg posture, and the pelvic cavity was flushed with warm decinormal salt solution and the abdomen closed. The operation consumed something more than an hour.

The highest temperature recorded after the operation was 100° F., on the fifth day. The abdominal sutures were removed on the fourteenth day. The patient has made an uneventful recovery without a single complication.

The question may be raised why the vaginal route was not utilized for removing these two uteri, since it has many points of advantage over the abdominal route in certain cases. In the first case a hysterectomy was not thought to be necessary until the abdomen was opened, and, could it have been decided before, the adhesions to the bowels were too extensive and firm to admit of a safe and satisfactory vaginal hysterectomy. In such cases, even if the organ and diseased appendages can be gotten away safely through the vagina, the greater liability to fresh adhesions to the bladder and stumps of the broad ligaments would offer a strong argument against it. I have been obliged to open the abdomen several times to do away with adhesions following vaginal hysterectomy, which were causing most intense suffering. I believe that adhesions occur more frequently after vaginal than after abdominal hysterectomy, because the pelvic vault is not closed perfectly, and frequently extensive raw surfaces are left exposed to contact with the intestines which prolapse into the empty pelvis.

In the second case there was involvement of the broad ligament on the left, which pointed strongly to cancer and more perfect removal could be accomplished through the abdomen.

1 West Seventy-first Street.

Before operation a good night's sleep is of the greatest value to both patient and operator.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, September 27, 1897.

LANDON CARTER GRAY, M.D., PRESIDENT.

Nominations.—*President*, Drs. Henry Dwight Chapin and A. M. Jacobus; *First Vice-President*, Drs. J. Riddle Goffe, Wickes Washburne, and N. E. Brill; *Second Vice-President*, Drs. R. P. Lincoln and B. F. Curtis; *Secretary*, Dr. Charles H. Avery; *Assistant Secretary*, Dr. W. E. Bullard; *Treasurer*, Dr. John S. Warren; *Censors*, Drs. H. L. Collyer, F. M. Crandall, E. Fraenkel, M. J. Burstein, Whitehead Gilfillan, L. C. Gray, W. L. Carr, F. H. Daniels, R. A. Murray (declined), W. Stevens, S. D. Powell, and J. L. Barton.

Certain Sources of Neurosis in Woman.—DR. EGBERT H. GRANDIN read a paper with this title. The term "neurosis," he said, was of necessity a very vague one, and often was a mere cloak for ignorance. This ignorance was sometimes due to faulty examination, and sometimes to the fact that a specialist had been consulted who had confined his search to the narrow limits of his particular branch. The following cases were cited by way of illustration:

Fissure at Neck of Bladder.—A married woman came to him with the statement that sexual intercourse was impossible. The woman was intensely neurotic, and she complained of pain in nearly every portion of the body. Digital examination showed the pelvic organs apparently normal; there was not even a prolapse of the ovaries, as had been suspected. On examination of the neck of the bladder a fissure was found. Dilatation and the application of phenic acid cured the case.

Adhesions of Clitoris.—It should be remembered that the clitoris exerts a powerful influence in the production of various neuroses. Many a case of nymphomania and masturbation would find its explanation in adhesions of the clitoris. For example, a lady of thirty-five had consulted him for the relief of an intolerable pruritus of the vagina. Sugar was absent from the urine, and many remedies had been tried in vain. The prepuce of the clitoris was firmly adherent, and there was a collection of smegma. Removal of these adhesions effected a prompt cure.

Anal Fissure.—The speaker said that he was inclined to think that the rôle of the sphincter ani was not appreciated so fully as it should be as a factor in disease. Fissure of the anus was a common cause of reflex irritation; hence the rectum and anus, as well as the vagina and pelvis, should be subjected to careful scrutiny. For instance, an intensely neurotic lady had consulted him after two years of married life, because of menorrhagia and intense dyspareunia. The spasm of the hymen was so great that the vaginal examination could be made only under anæsthesia. Inspection of the rectum showed a deep ulcer. The sphincter ani was dilated and the ulcer cauterized. She made a rapid recovery.

Coccygodynia. The coccyx is a relatively frequent source of neurosis, because of the liability of the coccyx to be injured, not only during labor but by falls on the back. Fracture of the coccyx, even though caries does not result, often causes pressure on the nerve filaments, and hence reflex irritation. In seven cases he had removed the coccyx because of actual disease or because a fracture accounted for reflex nervous phenomena not otherwise explained. In every instance the operation had brought the desired relief. In the operation for the extirpation of the coccyx, he would insist that drainage was unnecessary, assertions to the contrary notwithstanding. After the removal of the bone, with a large curved Hagedorn needle the suture could be made to travel entirely around the wound, which could thus be easily and completely closed.

Diseased Uterine Appendages.—The speaker then took up the consideration of the part played in the production of neuroses by disease of the tubes and ovaries. He remarked incidentally that he looked upon menstruation as the most obscure of all the feminine neuroses. A woman of about thirty-five had been brought to him by her husband from a retreat for the insane, where she had been placed by a neurologist. She exhibited deep melancholia, erotomania, and suicidal tendencies. Examination showed perimetritis and endometritis, and the husband was told that these findings did not necessarily account for her condition. Nevertheless, the appendages were removed by laparotomy, and the woman was completely cured, although they were not markedly diseased. This was an example of empirical operating. Another patient, suffering from hystero-epilepsy, had such violent attacks that anæsthesia was necessary to control them. It was ascertained that these attacks occurred chiefly at the menstrual period; hence in an empirical way the removal of the appendages was advised. The operation was performed about three years ago. After the operation the attacks diminished in frequency and severity, and there had been no attack for the last two years. The organs were found to be infantile in type. The next case was cited as an example of the failures following empirical operating. The patient, a woman of thirty, married to a man of fifty, suffered from hystero-epilepsy. Examination showed the appendages to be markedly enlarged but freely movable. There was no evidence of increase of the symptoms at the menstrual periods. The operation was requested, on the ground that everything else had failed. It was performed, and the attacks diminished for a few months; then a pseudo-menstrual flux appeared and the attacks returned as before. The case was unquestionably one of essential epilepsy, and the result was what was to be expected. In conclusion, the reader of the paper entered a plea for a more careful examination of the body as a whole, before concentrating the attention on one set of special organs.

DR. ROBERT A. MURRAY congratulated the reader of the paper on having presented so many facts in proof of the frequency of faulty diagnoses. He could cite from his own experience many similar examples, all of which only served to emphasize the tendency to overlook minor abnormalites while searching for grave pathological lesions.

DR. H. N. VINEBERG said that he was surprised that in the first case reported the neck of the bladder had been examined without the existence of symptoms pointing to some affection there, for certainly this would not be generally done by the practitioner. He was inclined to be sceptical regarding the part played by clitoridal adhesions in the production of neuroses—at least, the tendency was to overdo this matter and too hastily conclude that these were responsible for the symptoms present. The majority of cases with reflex nervous symptoms would be made worse by the removal of the tubes and ovaries, unless there was evidence of a distinctly pathological state of these organs. When such a condition existed and it was considered justifiable to operate, the uterus as well as the tubes and ovaries should be removed. Regarding incomplete sexual commerce, he said that it was often observed in married women who had borne a number of children that they began to suffer from various neurotic symptoms. Inquiry would frequently elicit the fact that the woman made no effort to prevent conception but that the husband practised "withdrawal."

Dr. C. A. Von Ramdohr said that laceration of the cervix not infrequently gave rise to epilepsy. He had seen a number of cases in which the simple closure of the everted cervix cured an epilepsy which had not been diagnosticated as hystero-epilepsy until after a thorough examination. He also referred to those neuroses occurring during confinement, in which there was no obliteration of the cervix, and in which the cause was to be found in a fissure of the urethra, anus, or vulva, or possibly in an abnormality of the coccyx.

True Epilepsy Never Cured by Operations.—Dr. Louis Faugères Bishop said that epilepsy was a disease of the motor cells of the brain—a fact which should be borne in mind in all efforts to cure it by attacking certain regions of the body. He did not think true epilepsy had ever been cured by operations or by local means. Postoperative neurasthenia was a very common condition, and should receive thoughtful consideration by the surgeon before he decided too hastily to operate upon neurotic individuals.

Dr. H. L. Collyer said that he had seen three cases presenting no bladder symptoms, and yet examination readily revealed fissure of the vesical neck. As to adhesions of the clitoris, it should be remembered that there was hardly one woman in a hundred who did not have such adhesions. The effect was similar to that observed in the male from similar adhesions. The great sensitiveness of the clitoris was well shown by the struggling produced by an attempt to separate the adhesions unless the patient was very deeply anæsthetized.

Dr. W. M. Leszynsky referred to the removal of the healthy ovaries for the cure of epilepsy or insanity. He had written an article upon this subject some ten or twelve years ago, and hence was greatly astonished very recently to find two cases in which such an operation had been performed. The practice, in his opinion, was not only not justifiable, but was positively criminal.

Neurologists Sceptical about Pelvic Disease Causing Epilepsy.—Dr. L. C. Gray said that he fully believed, with the reader of the paper, that a neurosis was a very indefinite thing, with the exception of epilepsy. Epilepsy had a certain definite group of symptoms which marked it as something apart, although we knew very little of the causes of it in the so-called idiopathic variety. All the vague nervous symptoms occurring so frequently in women from disease of the pelvic viscera could hardly be called a neurosis, in the meaning that we could always recognize the cause by the symptoms. It had always been his custom to assume that a case of true epilepsy—an absolute loss of consciousness, with or without clonic and tonic convulsions—could not be caused by disease of any of the pelvic viscera, simply because there had been no proof adduced that such a cause could bring about such an effect. Future study might bring forward such proof. Neurologists were becoming more and more sceptical regarding epilepsy resulting from disease of the pelvic viscera. But there were many forms of neurasthenia, and many more or less vague neuralgias, together with the manifold phenomena of hysteria, in which the cause could be found in some disturbance of the pelvic viscera. In every case in which a positive diagnosis of epilepsy could not be made, it was well to have the patient examined by a competent gynæcologist. He was sorry to say that he had himself repeatedly treated without success cases which were afterward promptly cured by appropriate treatment directed to the pelvic organs. As to the removal of the ovaries and Fallopian tubes in hysterical and epileptic cases, he had never yet seen it do more than temporary good, provided, of course, the tubes and ovaries were healthy. He recalled one case in which a prominent gynæcologist of this city had removed one ovary because of vomiting. This had given relief for a time, but the vomiting had returned, and he had then removed the other ovary. Again there had been relief for a few months, and on the return of the vomiting the gynæcologist had once more operated, separating some adhesions. When the patient had again relapsed, she had been referred to him. She was a perfectly typical case of hysteria, and, although she asserted that she vomited constantly and had been unable to retain food for weeks, he did not believe her. She was followed, and was seen to walk through the street complacently eating peanuts.

Dr. Grandin, in closing the discussion, said that he was not prepared to say that in the first case cited there had been no bladder symptoms, but if they had existed they had been masked by the uterine symptoms. If more general practitioners looked to the clitoris, even at birth, it was not improbable that fewer cases would go to the neurologist or to the gynæcologist in later life. He was thoroughly convinced that adherent prepuce of the clitoris was responsible for many nervous manifestations in women, which would even simulate actual disease of the uterus, tubes, or ovaries. He could have cited at least fifteen or twenty such cases from his records. He was firmly convinced that at the birth of the female infant, the physician should look out for preputial adhesions of the clitoris, even as it was the custom now for the careful physician to look for similar trouble in the male infant.

Retrodeviations of the Uterus.—Dr. Eugene Coleman Savidge read this paper, and called attention to the fact that all pelvic suppurations were excluded from consideration. He said that this malady, called after one of its most prominent symptoms, was one of the most common of female ills. It was always a symptom of enfeebled muscular power, and almost always an accompaniment of downward displacement of the abdominal viscera. It was evident, therefore, that it should not be treated as an isolated mechanical condition. As to its frequency, several authors had asserted that about twenty per cent. of women suffered from it. It was found in two hundred and forty out of one thousand cases coming to him for gynæcological treatment. In about eighty or ninety per cent. of the cases the displacement could not be permanently reduced. The treatment should be directed to the relief of the congestion and strengthening the muscular power. When vitality and muscular power failed, there would be a return of the congestion and also of the former symptoms. In a case of non-adherent and uncomplicated retrodeviation, the surgeon would do an Alexander's operation. In a paper read by Dr. George M. Edebohls before the Geneva congress, it was stated that out of one hundred and fifteen Alexander operations, seventy-seven had been "anatomical successes;" the remaining thirty-eight cases showed an instructive list of hernias, failures, and mishaps of various kinds. As about twenty-five cases of movable kidney developed after the operation, it would now be in order to suggest that the next modification of the Alexander operation should be the sewing of the kidney to the abdominal wall. The author's views of the conditions underlying retrodeviation of the uterus may be briefly stated as follows: (1) Passive congestion and an engorged venous system lead to renal and arterial changes which materially shorten life; (2) enfeebled muscle is readily stretched; (3) in addition to the columnar base of the vagina, the uterus has eight ligaments for its support, and these ligaments depend for much of their power upon the muscular fibres from the muscular coat of the uterus, and these fibres partake of the health of the uterus; and (4) general muscular and vital debility bring about passive congestion—in a word, the subject may be said

to be comprised in the reciprocal relation of congestion and muscular debility. In addition to the time-honored routine treatment, the speaker said, markedly beneficial results would follow the persistent use of diuretics, combined with iron and digitalis. Outdoor exercise and daily massage and baths were all of service. After two or three months of such treatment, all the symptoms usually disappeared, but the patient should be told that the same causes would bring about a return of the symptoms.

Uterine Fixation, Not Displacement, the Chief Factor.—Dr. W. Gill Wylie said that about fifteen years ago he had made a careful study of the dynamics of the pelvis, with very much the same results as had been given in the paper. He was of the opinion that many of the cases under consideration were the result of imperfect development, and that too much attention had been given to the mere mechanical displacement. He had never opened the abdomen for the purpose of correcting the uterine displacement, although he had devised an operation for shortening the round ligaments in cases in which the abdomen had been opened for some other reason. He had never been able to convince himself that it was right to fix the uterus to the abdominal wall. It was not the mechanical displacement, but the fixation of the uterus, which gave rise to the troublesome symptoms.

Every Displacement does Not Demand Treatment.—Dr. Paul F. Mundé said that the subject had been presented in a very novel and original manner, and the author's facile pen had almost convinced him that he really meant all that he had said. The author had ridiculed the methods of the gynæcologist and the abdominal surgeon, and had even made it appear that the gynæcologist knew very little about medicine. He agreed thoroughly with him when he mentioned methods of prevention, but he wished him to state how he was going to carry out these methods. It was right in theory, but impossible in practice. For example, as a prevention of subinvolution he had himself many years ago recommended that every parturient woman should have a pessary introduced before she was allowed to get out of bed. It was a nuisance, of course, but so was a crutch; yet it was useful and at times desirable. He would like to put himself on record once more as saying that he did not think that every displacement of the uterus produced symptoms or required treatment. In many cases he was sure that the backache complained of was not dependent upon the retrodisplacement, but upon the uterine catarrh and chronic congestion, with the consequent dragging upon the ligaments. Nevertheless, he believed that a retrodeviation of a major degree should be remedied when detected, because sooner or later it would produce unpleasant symptoms. He would even apply this rule to some young single women.

Nothing New in the Paper, and Its Teaching Dangerous.—Dr. George M. Edebohls said that such a paper as this certainly did no good, and might be productive of a good deal of harm. There was absolutely nothing new in the paper, although the facts had been presented in a very felicitous manner. It left us where we were ten or fifteen years ago. Prevention was, of course, most desirable if practicable, but it could be carried out only within narrow limits. Even if some women were restored to good health, there was still a class of cases which must be put under what the author had very happily termed "recurring treatment." The speaker said that one of his recent papers had been referred to by the author, but it had been apparently misquoted, for out of the one hundred and fifteen cases there were, if his memory served him, at least one hundred and five satisfactory anatomical cures, and in these cases his observations had extended over an average period of sixteen months.

Dr. Vineberg protested against the criticisms made in the paper concerning the operative work of modern gynæcologists. Either the reader of the paper was not serious, or else he was not sincere. It seemed to him that the keynote of the whole paper was intended to be renal insufficiency. As to the part played by the general health, he would say that, although he was visiting physician to a home for chronic invalids, he found very little occasion to treat uterine displacements among the inmates. It was a mistake to suppose that renal insufficiency, heart disease, or lung disease would produce marked disease or displacement of the uterus. He thoroughly indorsed the statement made by Dr. Mundé, that when there was marked retrodisplacement it was pretty sure in time to cause trouble.

Dr. Julius Rosenberg said that the symptoms of which the patients complained often persisted after the correction of the displacement. In a small percentage of cases operations were necessary, but this percentage was growing steadily smaller.

Dr. Savidge, in closing the discussion, said that he did not in any way give renal insufficiency as a cause of retroversion, nor was he a disparager of the Alexander operation. He had in his hand the paper of Dr. Edebohls, and thought he had quoted the figures correctly. In proof of this, he proceeded to read the results from the tables there given.

Therapeutic Hints.

Hypodermic Purgative.—

℞ Caffeine and chloral ..... āā gr. viiss.
Water ..... ℥ lxxv.
M. Inject fifteen minims.

—Ewald, *Journal de Médecine de Paris.*

Cough Mixtures.—Dr. James K. Crook says that the following formulas have been thoroughly tested in both hospital and private practice and render good service in suitable cases. For irritative coughs:

℞ Phenacetin ..... gr. xx.–xl.
Ext. glycyrrhizæ ..... gr. xx.
Sacch. albi ..... ʒ ij.
Fiat pulvis, in chartulas 20 dividendus. S. One to be taken at one, two, or three hour intervals.

For the same of more obstinate character:

℞ Phenacetin ..... gr. l.
Ext. glycyrrhizæ ..... gr. xx.
Codeinæ sulphatis ..... gr. ij.–iv.
Sacch. albi ..... ʒ ij.
Fiat pulvis, in chartulas 20 dividendus. S. One to be taken every two, three, or four hours.

℞ Ammonii carbonatis ..... ʒ ij.
Acidi salicylici ..... ʒ iiss.
Aquæ cinnamomi ..... āā ʒ ij.
M. S. Teaspoonful in a little water every three hours

—Henry R. Slack.

Carcinoma.—Although local treatment is useless in carcinoma, in cases of doubt, as when there is ulceration or fissure, the following ointment is useful. If healing does not take place in two weeks operate, as carcinoma never heals in this way.

℞ Balsam. peruvian. ..... āā ʒ i.
Unguent. hydrargyri nitratis ..... āā ʒ i.
Petrolati ..... ʒ i.
M

—J. H. Hearn.

Use of the Stomach Tube.—Dr. Murdoch (*New York Medical Journal*, vol. lxv., No. 3) says the tube should be used: 1. For diagnostic purposes. An hour after a test meal the contents of the stomach are with-

drawn by the tube and examined for hydrochloric and other acids, peptone, etc. 2. To empty the stomach in poisoning except when due to caustic alkalies, because of the danger of perforation. 3. For lavage. In stagnation of food in the stomach, in accumulations of large amounts of mucus, and sometimes in simple glandular atony with lack of hydrochloric acid. Its best results are obtained in dilatation of the stomach by cleansing the mucous membrane of stale food and mucus, and restoring the vitality of the secretory glands. It should not be used in acute and semi-chronic gastric disturbances, and is positively contra-indicated in: 1, thoracic aneurism; 2, serious cardiac disease; 3, recent bleeding from any part; 4, great debility or advanced age; 5, gastric ulcer.

Tapeworm.—

℞ Olei terebinthinæ,
Oleoresinæ filicis maris.....āā ʒ vi.
Mucilag. acaciæ..... ʒ ij.
M. ft. emulsion. S. Day before treatment, a milk or thin-soup diet, and one drachm of compound jalap powder. The emulsion is taken the following morning, fasting, and a half-hour later a dose of castor oil.

—F. A. A. Smith.

Expectorant.—

℞ Ext. glycyrrhizæ..... gr. xx.
Phenacetin ..... gr. xx.–xl.
Ammonii muriatis..... ʒ i.–ij.
Sacch. albi ..... ʒ ij.
M. et in chart. 20 dividendus. S. One powder to be taken in a little water every two, three, or four hours.

Purgative Pill.—

℞ Podophyllin,
Leptandrin,
Ext. colocynth. comp. .....āā ʒ i.
Ol. menth. pip..... gtt. vi.
M. ft. pil. No. 60. S. One for a laxative; two for a purgative, and three for a drastic effect.

—D. E. Ruff.

Antineuralgia Pill.—

℞ Strychninæ sulph ..... gr. i.
Quininæ sulph..... ʒ i.
Ferri redacti ..... gr. xv.
Ext. gentianæ..... ʒ ss.
M. ft. pil. No. 60. S. One three times a day.

This is especially good for facial and stomach neuralgias. If there is a marked malarial element present, add arsenious acid, five grains, to the formula.—D. E. Ruff.

Garfield Tea.—The "Standard Formulary" gives the following as the approximate composition of "Garfield tea":

℞ Triticum..... ʒ i.
Liverwort ..... ʒ i.
Senna ..... ʒ viii.

Pulmonary Tuberculosis.—

℞ Creosote (beechwood)..... gr. 374
Camphor..... gr. 225
Aristol..... gr. 150
Eucalyptol ..... gr. 450
Sterilized neat's-foot oil..... ʒ 8
M. S. To be used as a hypodermic injection.

Each cubic centimetre of this solution contains a grain and a half of creosote, six-tenths of a grain of aristol, and three-quarters of a grain of eucalyptol.—Gilbert, *Pract. Drug. and Review of Reviews.*

Hæmatophilia.—All the observations which have been made upon the nature, history, and progress of this disease may be resolved into two essential and congenital conditions: an abnormal vitality of the blood, and a delicate construction of the capillaries. The circumstances of the disease appear to support the following propositions: 1. Its intermitting character. 2. The strong action of the arterial system, as shown by the mental excitement before the attack. 3. The immunity from excessive hemorrhage, even after wounds, in the intervals between the attacks. 4. The rare occurrence of bleedings in persons who have some steady outlet, as hemorrhoids. 5. The facility with which bleedings are sometimes prevented or arrested by means which lower the vitality of the blood, as diarrhœa or smart purging, etc. 6. The readiness with which ecchymoses form under the skin, from very trifling injuries.—Hopkins, *Occidental Medical Times*, March, 1897.

Vulvar Vegetations.—An active application is the following:

℞ Powdered savin,
Iodoform,
Salicylic acid.....āā equal parts.
M.

—Lutaud.

Nephritis.—

℞ Ergotini..... 5 gm.
Ac. gall..... 8 gm.
Extr. et pulv. rad. rhatan. q.s. ut ft. pil. nr. viginti.
S. Take one pill four times a day.

℞ Ergotini..... 2 gm.
Ac. gall..... 4 gm.
Saccharini ..... 0.05 cgm.
Muc. gumm. arab..... 200 gm.
M. S. Teaspoonful twice a day.

—Pulvirenti.

The Therapeutical Action of the Cold Bath in Typhoid Fever.—Drs. Robin and Binet (*Archives Générales de Médecine*, November, 1896) report after careful chemical investigations that the cold bath increases the amount of air inspired and expired and increases the amount of carbonic-acid gas excreted and the amount of oxygen absorbed. They conclude: 1. That in typhoid fever there is an exaggerated loss of nutrition, and large quantities of waste products as well as of ptomains invade the tissues, and are not excreted as fast as they are formed. These products are not split up, owing to the decreased absorption of oxygen. 2. That our aim in such cases should be to increase oxidation. 3. That cold baths have a remarkable oxidizing power. 4. That they increase the respiratory processes, but above all they increase the total amount of oxygen taken in and increase its absorption. 5. That the respiratory change does not begin to take place until half an hour after the bath and reaches its maximum at the end of an hour. 6. That the duration of the process cannot be sharply fixed. 7. That if the bath does not reduce the temperature it does not produce the above-mentioned change. The cold bath by diminishing the temperature lessens the increased tissue destruction and the production of toxins. Increased oxidation transforms the bacterial toxins into harmless, easily eliminable, soluble products. The cold bath raises the arterial tension and increases the heart action, from which causes diuresis recurs and the products of tissue change are more easily carried off. These effects are all due to a reflex action from the nervous system.

Hints for Patients on Sea Voyages.—Dr. George Walter Barber (*The British Medical Journal*, December 19, 1896) gives some good advice for patients sent away for the benefit of their health. In the first place a crowded ship should be avoided and an entire cabin should be secured, especially for phthisical patients. The cabin should be amidship, where the motion and vibration of the ship are least felt. The patient should wear a cummerbund over his pajamas, as the neglect of this precaution frequently leads to severe abdominal pain and diarrhœa, and often colitis, owing to the free perspiration which occurs in the tropics being checked by a stream of cold air from an open

port, etc. The patient should never sleep on deck, and as soon as he arrives in the tropics he should wear a solar tope as a protection against sunstroke, sun headache, and thermic fever. The patient should be told to keep on deck as much as possible, but should not sit under a single awning, which allows the sun's rays to penetrate. Clothing should be suited to the varying climates. All alcoholic subjects should be put under the ship's surgeon at the beginning of the voyage, as he is then able to make sure that they get no liquor. The morning bath should be taken warm by malarial subjects and those who are very delicate. Very strict orders should be given as to diet, most persons eating too much and exercising too little. Dr. Barber recommends the following for seasickness:

℞ Chloroformi purif. . . . . ℥ij
Tr. nuc. vom . . . . . ♏i.
Tr. lavand. . . . . ♏x.
Aq. . . . . ad ℥ i.

M. ft. mist. S. To be well shaken, and taken every hour until the nausea is relieved; liquor morphinæ acetatis, ♏ v., if there is much pain.

Alcohol is unnecessary in most cases; milk and soda, beef tea, or beef jelly should be given in small quantities at short intervals. A letter describing the case should be given the patient, which may be handed to the ship's surgeon if his services are required.

Surgical Suggestions.

Osteotomy of the Femur.—In the treatment of tuberculous disease of the hip in its early stages Dr. R. F. Tobin (*British Medical Journal*, April 24th) gives the following summary of his views: 1. That no treatment better than rest, combined with constitutional remedies, is known for tuberculous disease of the hip. 2. That a large proportion of cases of this disease, especially those in which flexion has occurred, go on to suppuration, and that one of the chief causes of their doing so is the difficulty of giving the joint rest. 3. That much of this difficulty lies in the fact that the position of greatest ease for the tuberculous hip-joint is one in which it is very awkward for the patient to carry the limb, very difficult for the surgeon to fix it, and therefore one in which the joint is constantly exposed to disturbance. 4. That it is possible, and in many cases advisable, to remove this difficulty by such an osteotomy of the femur as will allow the limb to be put straight, while the upper of the fragments retains "the natural position of rest." 5. That the operation also does good in some cases by relieving tension in the bone. 6. That an osteotomy of the femur when done in this respect is not so formidable an undertaking as it is under ordinary circumstances, for it is not the division of the bone that is formidable in this operation, but the constrained position in splints and the long period of rest required for union. Now since these latter incidents are a great gain for the tuberculous joint, they must be put to the credit of the operation, thus leaving very little to be entered on the debit side.

Treatment of Fractures.—Dr. Davis concludes an article in the *Annals of Surgery* as follows: 1. It is my belief that massage and passive motion are not used to the extent that they should be in the treatment of fractures. 2. That immobility of the fractured ends favors quick union with little deformity. 3. That there are some cases in which, owing either to peculiarities of the fracture or to the impaired constitution of the individual, the tendency to the formation of callus is marked. Motion in these tends to the formation of exuberant callus and deformity. 4. That there are others in which union is unduly delayed; disturbance of the fractured ends in these hinders union. 5. That it is wise to wait until the fractured parts are glued together, usually eight or ten days, before attempting any except the lightest massage, and any extensive passive motion after that time should be used carefully but diligently. 6. That passive motion and massage when first attempted should be of the most gentle character, and not so violent as to disturb the relation of the broken bones. 7. That any marked pain and inflammatory reaction following passive motion and massage are evidence that it has been too violent. 8. That the limb should receive massage and manipulation at each inspection or change of dressing, often daily. 9. That in some cases it is advisable to administer such massage as is possible without removing the splints. 10. The persistent stiffness, particularly in fractures or injuries of the wrist, is often due to a rheumatoid affection locating itself in the injured region. Massage is valuable in the treatment of such. 11. That massage should be given to that part of a limb beyond the seat of fracture, to preserve it in a normal condition. 12. That such dressings and methods of treatment should be adopted as will allow of the greatest use of massage and passive and active movements consistent with proper retention of the fragments.

Empyema of the Antrum.—In discussing a new operation for the cure of obstinate instances of disease of the antrum of Highmore, Dr. H. A. Lothrop (*Boston Medical and Surgical Journal*, May 13th) presents the following conclusions: That the relation of the openings of the accessory nasal cavities is not constant, and that fluid may gravitate from one to another according to the position of the head. That the antrum is a reservoir for pus, of primary or secondary origin. That many cases of empyema of the antrum are never cured; therefore further efforts are needed, which must be in the line of surgery. That the more radical operation with the idea of drainage have relieved cases hitherto incurable. That there are important objections to a large canine or alveolar opening with the idea of establishing permanent drainage. That permanent nasal drainage is less objectionable than oral drainage. That the removal of the lower half of the naso-antral wall prevents further pus retention and thereby allows the antral mucous membrane to resume a healthy condition. That the operation suggested is of short duration and not severe, although most radical. That, by this procedure, the antral cavity is rendered easily accessible to frequent irrigations by the patient and to local applications and occasional inspection by the surgeon.

Sprains of the Ankle-Joint.—As a result of massage in the treatment of twelve hundred and thirty-one cases of sprain of this joint, these deductions are made: 1. Prevent swelling or rapidly disperse it if present. 2. Prevent pain or quickly remove it when due, as it must be, to tension. 3. Prevent stiffness or overcome it when already present from disuse. 4. Prevent the sense of weakness and restore the part to its original vigor and strength. 5. Reduce the time of treatment from weeks to a corresponding number of days. 6. Permit the immediate use of the injured member.—Drs. Van Arsdale and Gallant.

The first strip for a sprain of the external malleolus is applied, beginning just above the ankle on the unaffected side of the foot, and ending on the affected side about half the way up the calf. This strip is usually alongside the tendo Achillis and makes firm support under the heel. The second strip starts on the inner side of the unaffected part of the foot, near the ball of the toe, comes around over the back of the heel, and ends about the base of the little toe. It

crosses the first one just above the border of the heel. The third strip overlaps the first half-way, the fourth the second, and so on until the part sprained is fully covered by this criss-cross strapping. A cheese-cloth bandage is applied more with the idea of securing close adhesion of the plaster and is removed within twenty-four hours. As soon as the dressing is completed the stocking and boot should be applied. The patient is now ready to begin walking, and this should be insisted upon in the presence of the surgeon. Direct him, for instance, to walk about the room eight or ten times. At the end of a week it is well to remove the strips and reapply in the same manner as above. Two or three such dressings suffice to complete the cure.—DENNIS' "Surgery," vol. ii., p. 362.

Correspondence.

OUR PARIS LETTER.

(From our Special Correspondent.)

HEALTH OF PARIS—EXOPHTHALMIC GOITRE—ITS BEST TREATMENT—THOMSEN'S DISEASE—A BACKERS' NEEDLE INSTEAD OF FORCEPS, ETC.

PARIS, September 25, 1897.

THE cold weather of the last week has been making itself felt not only by bringing back to Paris members of the faculty and general practitioners as well, but also in an increase in the number of cases of colds, laryngitis and bronchitis, and even pneumonia. Nevertheless, the health *résumé* of the week, according to the *Bulletin Hebdomadaire de Statistique Municipale*, is satisfactory. During the week from the 5th to the 12th of September there were 735 deaths instead of 830, the mean of the September weeks. The zymotic diseases are but little prevalent, causing 8 deaths, to wit: typhoid fever, 4, instead of 11—the average; measles, 1, instead of 7—average; whooping-cough, 2, instead of 5—average; and diphtheria, 1, instead of 10—average. Paris is absolutely free from small-pox, and no one has died in the week referred to of scarlet fever. Although there has been a slight increase in the number of cases of inflammatory diseases of the respiratory organs, it is still below the average; there were 55 deaths from these, instead of 51 as in the preceding week, and instead of 67, the average of the season. On the other hand, there has been a decrease in the number of deaths from pulmonary phthisis—147 instead of 173, the average.

The Academy of Medicine met on the 11th inst., and listened to a very important communication on the dangers of operations on exophthalmic goitre, by Dr. Poncet, professor of the surgical clinic at the Faculty of Medicine of Lyons.

Here is his opinion: "In all cases of true Basedow's disease, try at first internal medications, and continue their use even if the amelioration is slow. In cases belonging to the poorer classes, in those that go rapidly into cachexia or relapse after a momentary amelioration by medical treatment, advise an operation as soon as the functional troubles interfere with the acts of every-day life and before the general condition is too much altered, but warn the patient that there are risks to run.

"If the tumor is of medium volume, remove it by massive enucleation or by partial thyroidectomy. If it is larger and very vascular, give preference to exothyropexia in spite of the perhaps more numerous chances of failure. It will be time enough to have recourse to a secondary excision of the goitre when the partial thrombosis of its vessels caused by exposure to the air shall have diminished the operative difficulties and the chances of intoxication. Some surgeons, among others Kocher and Rydygier more especially, have strongly recommended the ligature of the thyroid arteries as an innocent and efficacious therapeutic measure in the treatment of exophthalmic goitre.

"My own personal experience in the treatment of the different forms of goitre is that the continued current gives by far the best results, and oftenest brings about a complete cure; and I have completely resorbed by its use a simple hyperplasia of the thyroid body as large as a good-sized hen's egg. In the treatment of a case of exophthalmic goitre I reduced the growth by at least one-third. In this case the galvanic current was supplemented by the faradic current. Both were applied as follows: Five minutes on the goitre, by placing the large positive pole on the seventh cervical vertebra and the small negative one on the tumor itself; then five minutes by placing the positive pole with a small tampon below the thyroid body and the negative pole above it; then five minutes with one pole either side of the growth. These applications were followed by five minutes' faradization of the sympathetic—three minutes on the heart and one on each of the eyes, the positive pole always being placed on the seventh cervical vertebra, excepting for the tumor itself and of course the two sympathetics."

A disease about which but little is known beyond the general description in some of the more recent works on the pathology of the nervous system is Thomsen's disease. It is a myotonia, and this is the characteristic of the disease—a special muscular contraction, produced at the beginning of a voluntary movement or change of direction of a given movement, its intensity and duration varying in proportion to the importance of the effort, but remaining absolutely painless. As regards frequency, these motor troubles affect chiefly the lower limbs, more rarely the arms and preferably the hands, then the back of the neck, the face, the body, the pharynx, the tongue, etc. The relaxation of the muscle or muscles affected is more or less slow, according as the effort was greater or less.

I have had quite recently a case of this, in which both the lower limbs were affected. The patient at the beginning of his walk would be suddenly taken with an inability to proceed. His legs refused to move; there was an absence of all pain or numbness, such as we often see in some forms of paralysis. The inability was the only symptom, and this passed off in a few seconds. The muscular contraction was scarcely perceptible, but general—the kind of contraction that takes place in rigor mortis but more rapid, all the groups of muscles seeming to become contracted at once, if contraction there was—a kind of nailing to the ground. This affection, which is often congenital, may also be acquired. Hereditary alcoholism is a productive soil for it. The case referred to was symptomatic—that is, Thomsen's disease was associated with a uric-acid diathesis and rheumatoid arthritis, the patient's nerve centres being irritated and poisoned by uric acid. But as a general rule an organic disease of the nervous system lies at the bottom. Dr. Kornholb, in his thesis, 1897, has thrown considerable light on this obscure affection, and from observations taken in the service of Professor Raymond finds that the principal causes are spinal sclerosis, epilepsy, syphilis, polyneuritis, with muscular atrophy and meningomyelitis.

As regards treatment, that rests entirely upon the *indicatio causalis*. As, however, the circulation is almost always involved, massage, electricity, and douches to the spine are our best remedies. As regards internal medicines, hyoscyamine, arsenic, and Indian hemp may be given with advantage. Personally I find strychnine the most valuable remedy, in doses of one-one-hundred-and-twentieth of a grain twice daily with meals, and continued for three weeks.

Paris is to have another sensational trial. The

court is now taking cognizance of an affair the main features of which are as follows: The wife of a *pâtissier* being in labor, a doctor was called, who, not being able to deliver the woman with a faulty forceps, asked the husband to assist him. The latter brought a box of tools, in which was found a packers' needle. This, it appears, was used to pierce the cranium of the child, which was afterward taken away in pieces. Shortly after the woman was taken with fever and delirium, followed soon by death. Dr. Socquet, the legal medical expert, demonstrated that the woman had died not as a consequence of the delivery, but by the perforations that had been made in different places in the intestines, bladder, and peritoneum.

HYGIENE IN THE BARBER SHOP.

To the Editor of the Medical Record.

Sir: Without trespassing too largely upon your correspondence department, I would like a word bearing upon "Aseptic Barbering," as mentioned by you editorially in the last issue. In my communication to the Medical Record two weeks ago upon "A School for Favus Children," I failed to bring out the point that the majority of the male subjects of favus resort to the barber shop for their hair cutting. During the past five months, out of a total of nearly three thousand skin cases I have seen eighty odd subjects of favus, the great majority of whom I have questioned regarding their habits in this respect, and have found that almost without exception the barber's services are sought and freely received.

The hair is usually cut with the patent clipper. It was only yesterday that a man of twenty-one years, whose disease had existed from childhood, informed me that he went regularly to the barber, who cut his hair without protest, although abundant yellow crusts were present at the time. I always make it a point to instruct such patients in regard to the danger, and tell them to have their hair cutting done at home. Having failed to secure proper co-operation in several instances, I now have the hair of favus patients at the Good Samaritan cut at the institution as part of the routine treatment.

In regard to the relative frequency of the affection in the district in which this institution is located, I may say that in the last report of the American Dermatological Association there are but thirty-five instances given for the year, out of a total of over eleven thousand cases, and the general record from 1887 to 1893 gave for the whole country but three hundred and seventy-three cases out of over ninety-one thousand. It is safe to predict that unless proper steps are taken, the disproportion will not always continue to exist. Charles W. Allen, M.D.

[redacted]

THE PREVALENCE OF TAPEWORM.

[redacted]

Sir: Regarding Dr. E. C. Chamberlin's article on tapeworm in your issue of August 28th, I think his statistics are not borne out by common experience. During my residence of three years in Watertown (population thirty-five hundred), I have had four cases of tapeworm, all in men, ages from twenty-two to thirty-five years; occupations, two butchers, one shoemaker, one railroadman.

My friend, Dr. H. M. Finmond, residing here since 1890, has had six cases, only one of which occurred in a female.

From what I know of physicians in the neighboring towns, their experience is very similar.

George G. Saxe, M.D.

[redacted]

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 2, 1897:

	Cases.	Deaths.
Tuberculosis	153	111
Typhoid fever	27	4
Scarlet fever	12	5
Cerebro-spinal meningitis	0	1
Measles	53	1
Diphtheria	131	17
Laryngeal diphtheria (croup)	4	2

Are the Bodily Organs Friends or Enemies?—In answering this question most physiologists would probably say, "Friends; for they act together for the support of the whole organism." M. J. Kunstler takes another view. He tells us that they are enemies, or perhaps rather rivals; for an advantage given to one invariably results in its outstripping the others, to their injury (*Literary Digest*). It is not very long since general biology, he says, in some of its parts, was based on certain theories, mostly philosophical, that ruled supreme over our conceptions of the living organism. Such is without doubt the theoretical view, often advanced, but dating back as far as Aristotle, according to which the different parts of a being form a harmonious whole, in which they all aid each other, in a manner, and complete one another, so that they work together, each in its own way and for the best advantage, to the common good of the whole. An organism would then be comparable to a society wisely constituted of bodies of workers, who labor together in such wise as to protect the whole body from injurious outside influences. This specious and seductive manner of treatment can be refuted only by a somewhat rigorous scientific analysis. Far from giving mutual aid, the different parts of the bodies of living beings seem, on the contrary, to be in perpetual strife with one another. Every development of one of them has for correlative result a diminution of importance in the others. In other words, every part that increases determines the enfeeblement of the other parts.

. . Not only do the organs fight each other, but all other parts do the like, whatever they may be. For example, there is conflict among the tissues, even among the elements of the same tissue. The evolution of the feebler ones is diminished or arrested: they are pitilessly sacrificed to the good of the strong, which thus become more flourishing. Things seem to take place as if living organisms possessed only one determinate amount of evolutive power. If, by means of some artifice, this force of development is taken from an organ or a part, the other organs are more or less completely brought to a standstill, or they may even retrograde. These facts, taken together, lead the mind quite naturally to a comparison with what we see every day in regard to patrimonial succession. In the case in which one of the children of the same family is favored in the partition of the father's estate, the share of the others is by the same fact diminished by that amount. Kunstler has this to say about the effects of exercise: In moderate amounts, exercise has a favorable effect, and facilitates the progress of the organism, while a continual excess of it brings injury. Every degree of exercise cannot be considered of use to the development of the organs that are subjected to it, any more than to the organism as a whole. The well-known example of a certain

fencing-master whose continued professional exercise brought on symptoms of atrophy is a case in point. But without considering extremes, exercise even in relatively moderate amounts can produce undesirable effects, if it is too exclusive and too continued. By a kind of balancing of the organic energy, if one part is specially trained the neighboring organs cease to act, in greater or less degree, and this part becomes relatively preponderant, to the detriment of the others. Besides, it is well known that as a general rule men with powerful muscular and organic development are often not those that present the most intellectual habit of mind. This extreme application of the principle of the balance of organs has even been the object of popular consecration, if we may be allowed to recall the fact that when, in colloquial language, a man is called "fat" or "heavy," it is never taken as evidence of his intelligence. . . . The process that has been indicated has also a general signification and, besides exercise, a multitude of causes can conspire to hasten the development of the bodily elements. All the agents of excitation, such, for example, as alcoholic drinks, physical or intellectual fatigue, grief, all excesses, act thus, and make us "live faster." Trees taken from Europe to Algeria come in a half-dozen years, under the influence of the permanent excitation due to the high temperature of the African climate, to the same stage of development that they would reach in double the time in a temperate region. But then, having used up their whole vital energy, they die. Their leaves have scarcely fallen in autumn when they are replaced by a new growth; they are the seat of an intense life that uses them up quickly. So, also, great workers become weak and feeble before their time. The ephemeral successes of great bicycle racers are striking examples from daily life. M. Kunstler believes that this lack of vitality, due to the abnormal development of one part or faculty, is inheritable, and hence has its effect on the history of the human race. For instance, he points out that city children, compared with those of the country, are more precocious, but have less vitality, owing to maturity hastened by the excitement of city life for generations. He applies his rule also to the cases of certain families or of precocious children in the same family, and finds that everywhere, whether in the individual, the family, or the race, overdevelopment in one part or faculty, instead of helping on the others, invariably retards them.

Ought Physicians to Write Poetry?—A volume of Dr. Frederick Peterson's poems was recently produced in a courtroom where he was giving expert testimony in a murder trial, presumably in order to detract from the value of his testimony. *Leslie's Weekly* makes the following comment: "Whenever a medical man writes poetry it is viewed with some suspicion; the example of Dr. Oliver Wendell Holmes to the contrary notwithstanding. But Dr. Peterson, like Dr. Weir Mitchell, has wooed the muse to some purpose, and his verses are distinctly good. The volume in question was the second he has produced, each of them containing a number of charming lyrics and some clever translations from the Swedish."—*Boston Medical and Surgical Journal.*

The Yukon Fever versus the Medical Fever.—It may be asked by many a young man just now whether he should go to the Yukon or to a medical college. So far as the *Review* is concerned it would not seriously advise either course to glory, a fortune, or the grave. If, however, some youths, ambitious for fortune or fame are determined to go to one or the other of the above places, then really the balance of argument lies in favor of the Yukon. By going to the latter place one will make something soon or lose everything in the attempt. Of two forms of death, it would appear that being frozen is full as easy as the gradual one of starving to death by the slow academical method of attending a medical college. What though fifty per cent. should meet with death by freezing or speedy starvation in the search for gold in the Klondyke, would not the results in the end be better than that ninety per cent. should meet with disappointment in the search for gold after spending many years in the study of medicine? If either form of fever is to attack young men, we think the prognosis is decidedly in favor of the Yukon type, as compared with the medical-school type. The latter is a very lingering disease.—*Canadian Medical Review.*

A Give-Away of the Doctor.—The most curiously decorated graves in the world, perhaps, are the negro graves in Zululand. Some of these mounds are garnished with the bottles of medicine used by the departed in their final illness, and the duration of the malady and skill of the physician are indicated in a measure by the number of bottles.

Duke Carl of Bavaria, the oculist, has performed nearly three thousand operations for cataract. Every one of these operations has been performed between the hours of six and eight in the morning, as the Duke declares his nerves are strongest at this early hour and his hand most steady.

The Plague in China.—A Chinese paper estimates that the victims of the plague in Foochow this year will not fall far short of forty thousand.

Business Improving.—The physicians of Kearney, Neb., recently challenged the lawyers of that place to a friendly game of ball, and the members of the bar hurled the challenge back in their teeth, stating that they were too busy at present settling up the estates left by the doctors' patients.—*Medical Herald.*

Children and Poisonous Flowers and Plants.—Buttercups and daisies are generally associated in one's mind with Wordsworth, children, and Arcadian simplicity. It is difficult to conceive of anything hurtful or dangerous in connection with the pretty little yellow flower, but unfortunately it is not always the most modest and retiring plants or flowers that are the least harmful, for example, the deadly nightshade (Atropa belladonna). Not that the buttercup can vie with the deadly nightshade in poisonous qualities, and still when consumed in sufficient quantities it will cause death. A proof of this has lately been afforded in England in the case of a boy who after eating some buttercups died within a few hours with all the symptoms of irritant poisoning. The buttercup belongs to the ranunculaceæ, and nearly all the members of this group possess poisonous qualities, chiefly of an irritant nature, though in a few narcotic principles are to be found. Every year some children lose their lives by eating poisonous seeds or flowers, and care should be taken to exclude from gardens or parks where children play, plants or shrubs of a poisonous nature, as deadly nightshade, laburnun, and yew. Fortunately buttercups, though nice to look at, do not as a rule tempt children to eat them wholesale, otherwise the mortality from this cause would be much greater than it is at present—*Pediatrics.*

Tears are Good for Woman, says Dr. Campbell, in *The Hospital.* The beneficial effect of a good cry to a woman, he asserts, is partly due to the increased depth of respiration and the improvement in the often languid circulation thereby induced, but to a large extent it is the result of the muscular exercise in

volved, by which the general vascular tension, and especially the blood pressure in the brain, is much reduced. The profuse flow of tears no doubt also acts strongly on the cerebral circulation in still further reducing tension. The sobbing movements, again, have a good influence upon the venous circulation in the abdominal and pelvic viscera, while the exhaustion produced tends to cause sleep, and thus to give the nervous system its best chance of recuperation.

Arterio-Sclerosis.—M. Huchard, in his treatise on diseases of the heart, says that arterio-sclerosis is peculiarly the disease of physicians, politicians, and financiers, their liability to which is largely due to their practising professions in which emotion is often intensified and which involve great liability to overwork. In addition, doctors have to experience unavoidable irregularities in hours and sometimes continuous periods of work without rest. The single means of arresting and avoiding these consequences is by a diminution of anxiety and an avoidance of overwork, with measures taken as far as possible for repair of the wasted tissues.

Bacteriology in Japan.—Nothing in these days is more wonderful than the extraordinary progress made by Japan in almost every branch of civilization. Not only has she modelled her government upon the best civilized examples, drilled and armed her army, and built and armed her navy on the most approved European plans, but she also has taken a high place in scientific and medical research. Her system of medicine has been completely revolutionized, and especially in so far as the bacteriological element is concerned. Dr. Kitasato is probably one of the foremost living bacteriologists, and an interesting account of some of his work is given in *Science* for August 27th, by another Japanese, Dr. Nakagawa, a graduate of Princeton University. To a private citizen, Mr. Fakasawa, the credit is due of building at his own expense a laboratory for Dr. Kitasato and initiating in Japan the teaching of bacteriology. Subsequently the imperial government built and endowed the "Institute for Infectious Diseases," at Tokio, which is under the direction of Dr. Kitasato, and where he conducts his investigations. Perhaps the most instructive part of these researches is that which relates to the "bacillus pestis." In respect to this germ, Dr. Nakagawa says: "The discovery of the plague bacilli is too well known to need mentioning in this connection, were it not for the fact that it seems to be utterly unknown to the world that the bacillus claimed to be the specific germ of the plague by Dr. Yersin is absolutely different from that described by Dr. Kitasato. Dr. Kitasato's bacilli are almost exactly like those of chicken cholera (in shape), *i.e.*, each bacillus presents the appearance of a pair of diplococci, and is, as a rule, considerably smaller than Dr. Yersin's bacillus. Kitasato's bacilli can be stained according to Gram's method, while the other is decolorized by the regular procedure. Kitasato's bacillus is surrounded by a distinct capsule, which is wanting with Yersin's. Moreover, Kitasato's bacilli are motile, but Yersin's are not. There are at present two distinct bacilli held to be the etiological factor of the disease in question. It is to be hoped that the members of the commission sent out to Bombay will help to clear up the confusion." The "Institute for Infectious Diseases" appears to be an establishment complete in all its details, and is fitted up throughout with the latest up-to-date scientific appliances. The library contains most works on infectious diseases, bacteriology, and hygiene, and is supplied with medical periodicals in the English, French, German, Italian, and Japanese languages. The clinical department has beds for fifty patients, and all contagious diseases are admitted, with the exception of cholera and small-pox. It is stated that one hundred and eighty cases of leprosy have been treated in the out-patient department with Kitasato's recently discovered remedy for that disease, in four instances with complete success. A full report of "leprine," the name given to the new remedy, will shortly be published. Japan must be congratulated on the possession of such an institution as the one just briefly described. In bacteriological investigation she has taken the lead of nations far older in civilization and richer in resources.

Fasting and Infection.—The effect of fasting upon the power of the system to resist infection from microbian toxins has been investigated by MM. I. Teissier and L. Guinard, and they find it a strengthening one. Animals which had been kept fasting held out against inoculation much better than the control animals, and the resisting power seemed to increase with the length of the fast.

A Hospital for Consumptives in Paris.—Madame Boucicaut, widow of the founder of the Bon Marché, has left the bulk of her fortune to the Assistance Publique de Paris, a department which supervises the public charitable institutions of the city. Among the sufferers from various diseases who will benefit from this legacy are the consumptives. A building constructed on the most approved system and located in an ideal situation has just been completed. Although the building is large, it contains but one hundred and sixty beds. The treatment will be conducted on the open-air plan, and the greatest attention will be paid to antiseptic principles. This establishment should prove a great boon to the poor of Paris, among whom tuberculosis is common and whose conditions of life are favorable to the contracting of the disease.

Health Reports.—The following statistics concerning yellow fever, small-pox, and plague, have, been received in the office of the United States Marine Hospital service during the week ended October 2, 1897:

YELLOW FEVER—UNITED STATES.

		Cases.	Deaths.
Alabama, Mobile	September 24th to October 1st	40	6
Louisiana, New Orleans	September 25th to October 1st	160	15
Mississippi, Edwards	September 25th to October 1st	126	4
Edwards	September 25th to October 1st	117	3
Mt. Helena	September 25th to October 1st	4	
Ocean Springs	September 25th to October 1st	5	1
Pearlington	September 24th	1	
Scranton	September 26th to 27th	11	

YELLOW FEVER—FOREIGN.

Brazil, Rio de Janeiro	August 21st to 28th		
Cuba, Cardenas	September 4th to 11th		1
Cienfuegos	September 4th to 11th		18
Havana	September 11th to 18th		23
Matanzas	September 8th to 14th		2
U. S. of Colombia, Panama	September 14th to 17th	2	
India, Bombay	August 14th to 31st	193	
Calcutta	August 5th to 21st		6
Madras	August 21st to 28th		7
Singapore	July 1st to 31st		1
Japan, Kanagawa	August 29th to September 2d	1	
Osaka and Hiogo	August 21st to 28th	1	
Tokio	August 24th to September 2d	14	1

PLAGUE—FOREIGN.

India, Bombay	August 17th to 24th		15

SMALL-POX—UNITED STATES.

Birmingham, Ala.	September 18th to 25th	2	

SMALL-POX—FOREIGN.

Athens, Greece	July 1st to 31st	4	
Glasgow, Scotland	September 4th to 11th		1
Alexandria, Egypt	July 31st to August 13th		4
Havana, Cuba	September 18th to 25th		1
Rio de Janeiro, Brazil	August 21st to 28th	9	
Buenos Ayres	August 29th to September 4th		1
Cadiz, Spain	July 31st to August 14th		8
Hong Kong, China	August 1st to 14th		4
Patras, Greece	August 15th to September 11th		3
Madrid, Spain	September 1st to 8th		2
Warsaw, Russia	August 28th to September 11th		15
St. Petersburg, Russia	September 4th to 11th	4	
Madras, India	August 21st to 28th		
Calcutta, India	August 14th to 21st		1
Bombay, India	August 29th to 31st		5
Penang, Federated Malay States	September 4th to 11th		2

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Original Articles.

A PLEA FOR THERAPEUTIC CONSERVATISM.[1]

BY SETH A. MERENESS, M.D.,

CARLISLE, N. Y.

THE extraordinary progress made in certain departments of medical science during the present century, and especially its latter half, sometimes makes it appear as if the physician has at last reached *terra firma* in the treatment of disease. In histology and physiology, pathology and diagnosis, and in surgery and bacteriology the progress has certainly been great and most satisfactory.

Physiological chemistry and experimental pharmacology have also made rapid strides and the physiological action of many substances used in the treatment of disease is now definitely known.

But in spite of all this advancement of our knowledge of the human economy in health and disease, and of the materials used to allay suffering or bring about a restoration to the normal, it is not certain that we are better able to combat individual disease with pharmaceutical remedies than were the physicians of two and indeed twenty centuries ago.

The average duration of life is undoubtedly longer now than formerly, but when the prevention of infectious and often malignant diseases by vaccination or hygienic measures is taken into account, together with the better general knowledge of how to live and avoid disease, it is very probable that were it not for these conditions human mortality would be as great, if not greater, now than in times past.

Ever since the beginning of the Christian era and even long before, if we may credit our medical historians, there has been a continual change in medical theory and practice.[2] Methods which are deemed well-nigh infallible in one generation are supplanted by others in the next, and by the third generation the old method is mentioned as being not only unscientific and useless, but exceedingly injurious. Sometimes after a period of obscurity an old method is again taken up and lauded, to be soon criticised, condemned, and retired. One has only to read over the list of the various therapeutic sects to be made sceptical. If therapeutics rests on a scientific foundation, why this endless array of contradictions? We have only one scientific anatomy and physiology, one chemistry, and one bacteriology; why then a dozen or more sects in theoretical and practical therapeutics? Obviously, its theories and their application rest on insecure scientific foundations. By this it is not intended to discredit the really scientific knowledge of the physiological action of pharmaceutical or natural compounds on the animal economy, but only the utility of the administration of such in many pathological conditions.

The almost universal acceptance of cellular pathology as established and persistently advocated by Virchow[1] and others, in the middle of the present century, opened a new field of inquiry and has been the means of explaining satisfactorily many of the phenomena of vital organization.

Before this the fundamental anatomical processes of organic growth, tissue destruction and repair, or degeneration and regeneration, were explained by the most diverse hypotheses, many of which were more remarkable for their dogmatic incongruities than for their scientific explanations.

But that attribute or essence of living organisms which distinguishes them from inorganic substances is not more definitely known now than in times past. It still remains the sphinx of biology, and the cellular pathology no more explains the nature of the fundamental vital principle than did the ancient humoral, and its bitter antagonist, solidar pathology, or the iatro-mechanical theory of more recent times.

During all the centuries of which we have a record of medical science there has been the belief that there was a specific something which distinguished living from dead material; which caused, under certain conditions, organic substances to live, grow, and reproduce themselves; and a deterioration or loss of which brought about changes and eventually a return to inorganic compounds. Of these material changes cellular pathology has taught us much; but of the primitive causes of the changes almost nothing.

The ultimate analysis of natural phenomena leads to the acceptance of two primary factors, viz., matter and motion, and as a hypothesis it has been assumed that from the interaction of these the various kinds of matter and manifestations of force have been caused.

The application of force to matter may change the latter, as is shown by subjecting various substances to the action of heat, light, or electricity, whence changes in volume and in consistency, and even new chemical combinations, occur.

Again, daily experiences in mechanics and the arts demonstrate the convertibility of one force into some other. Mechanical motion may be converted into heat or electricity and *vice versa*, while heat and electricity may be converted into light and chemical action. From this it may be considered that mechanical force, heat, electricity, light, and chemism are, as Tyndal[2] expresses it, but modes of motion and may be transformed the one into another. According to this view, the rapidity and amplitude of molecular motion determine the varieties of force which are only to be differentiated by the phenomena resulting from their action on matter.

The changes which in this way lead to varieties of structure are still material and inorganic. That is, they do not present the characteristic biological phenomena common to living organisms. Indeed all the known kinds of matter and the varieties of physical force may be present, but the selective ability of liv-

[1] Read at the annual meeting of the Schoharie County Medical Society, June 1, 1897.

[2] Daremberg, Ch.: "Histoire des Sciences Médicales," Paris, 1870. Tome I., "Depuis les temps historiques jusqu'à Harvey;" Tome II., "Depuis Harvey jusqu'au XIXme siècle."

Bouchut, E.: "Histoire de la Médecine et des Doctrines Médicales." Tome I. et II., Paris, 1873.

Haeser: "Lehrbuch der Geschichte der Medicin und der epidemischen Krankheiten," 2 Bd., 3 Auf., 1875–1882.

[1] "Die Cellular-Pathologie," 4 Auf., 1871.

[2] "Heat as a Mode of Motion," London, 1863, and "Contributions to Molecular Physics," 1872.

ing organisms to maintain themselves for a definite time, to transform spontaneously one motion into another, and then to perpetuate themselves is wanting. Here is the necessary missing link between inorganic and living organic phenomena. Is this missing link matter or motion? If material, what is it? And if force, how does it differ from the other modes of motion, and can it be transformed into the others or *vice versa*?

These are questions the answers to which underlie the whole groundwork of biological and consequently medical science, and until they are definitely and correctly answered exact knowledge of organic phenomena cannot obtain.

That this missing link is not matter seems to be demonstrated by the capability of living organisms to maintain themselves, increase in volume, and perform their functions by transforming inorganic materials; and when because of natural limitation or on account of environment the living functions cease, organic substances become changed into inorganic. Besides, to consider vital phenomena as being caused by a specific material substance necessitates the hypothesis that either a material substance can cease to exist, or can continue to exist without its characteristic attributes, either of which the law of persistence of matter and its attributes disposes of at once.

Excluding a material substance as the cause of vitality, there are but two alternatives: either to believe the cause to be immaterial and supranatural, or to admit a primitive or modified specific force. The first, while possible, has nothing but belief to defend it, and can never be expected to be proven or disproven on scientific grounds. The second explains much and is supported by analogies if by nothing more.

How the first vital phenomena occurred is not, probably never will be, known, but once grant its occurrence and the way for hypotheses is clear.

Scientists tell us that the vegetal cell through the agency of solar force assimilates inorganic matter and transforms it into organic, and that, too, without change, other than molecular, of the elementary materials. The inorganic elements, oxygen, nitrogen, carbon, or whatever they may be, remain the same in the living structure as in the inorganic, only their relations to each other change, either as to quantity or the relative position of their molecules. During this transformation a portion of the solar force is stored up in the organic substances, which is again liberated when the cell is destroyed or undergoes retrogressive changes.

Aside from the peculiar property possessed by a living cell to assume automatically a definite structure and to transmit this capability to its offspring, there is very little in vital phenomena which does not appear to be governed by the laws of inorganic nature.

But this property is now, as it has been for centuries, so characteristic and inexplicable that it has been accepted as a distinct entity and designated by various names, of which vitality and vital force are representative. It has never been demonstrated, however, that vital force is primitive or specific, and its acceptance as such is purely hypothetical. Indeed, there is much to justify the belief that vital force, if there is really such, is simply another mode of motion, capable of being transformed into other forces but never destroyed, and able to alter the properties but not the essence of inorganic elementary substances.

Perhaps the future may show that what we call vitality is neither specific matter nor force, but the resultant of the interaction of both, under certain conditions now entirely unknown.

What we do know, however, is that this vitality, be it what it may, is a [illegible] for the assimilation of inorganic materials, the maintenance of life, and the occurrence of reproduction.

One of the great merits of the cellular pathology is that it necessitated a careful, scientific examination of what is now accepted as the foundation of organic structures, viz., the cell. Whether with or without a membrane the essential material is its protoplasm, which, according to Huxley,[1] may be considered as a type of all primitive living substance.

This almost homogeneous organic compound has above all other characteristics one in particular, and that is instability. Being of a most complex structure, not only from its containing several elements but from its multiple molecular combinations, it is not at all strange that the compound is so unstable. Moreover, when it is considered that in chemical unions the rearrangement of even one molecular group produces a substance with entirely different characteristics, it is easy to conceive that even an elementary organism may present millions of changes, and while all the time retaining a typical structure the individual is never twice alike during its existence.

Herbert Spencer[2] maintains that the higher the organization of matter the more unstable the resulting substance becomes, since there is always a tendency to equilibration. In living organic substances the vital principle strives to bring the organic unit to a definite structure and maintain it, while the environment constantly endeavors to reduce it to a more simple structure, even to its primitive inorganic constituents.

To remain in a condition in which the protoplasmic mass can perform its functions normally—that is, in health—is the constant automatic aim of every biological unit, otherwise an enduring condition of vitality would be impossible. In order that an organic unit may preserve its vitality and perform its functions, force must be constantly expended. The assimilated material with its stored-up solar energy is of service only so long as the reorganization of its molecules develops force.

The principal physical function of an elementary organism is to decompose various substances and to change potential into kinetic energy, or *vice versa*, and this decomposition produces various modifications of motion, as heat, chemical action, and changes in polarity for the lower organisms, while in the higher, in addition to these, there is developed muscular contractility and perhaps even cerebration. When protoplasm can no longer make use of its potential or has used what is available, its own molecular structure probably changes to a more elementary condition in order to evolve more force, resist external and internal harmful influences, and to maintain a suitable temperature. This phenomenon continues until the living protoplasm loses its essential characteristics and is no longer capable of producing vital phenomena, in other words the protoplasm is dead.

Vitality is then only a relative term and expresses the degree of organization necessary to life, which is probably not the same for all living material. Hence molecular complexity varies, and, while its falling below a certain grade causes impairment of function and death, its development is limited only by the original vital intensity and the possibilities which the environment allows.

Health and disease are also only relative terms, the one signifying the condition of an organism when it is able to maintain a degree of organization necessary to produce normal functions, and the other expresses the condition when organization and consequently function are below the normal. The dividing line, if there is one, is entirely unknown for the lower organisms. For complex organisms, however, the disturbance of a collective function may very properly be termed dis-

[1] "The Physical Basis of Life," London, 1868.
[2] "Principles of Biology," vol. i., London, 1864.

ease, although the constituent cells of the organ causing the function are in various conditions, some normal, others living but feeble, while others are *hors de combat*.

The most characteristic physical phenomena of living protoplasm is its reaction to external antagonistic influences. This presents itself to our senses by certain movements, contractility, and the general property of protoplasm to recognize injurious contacts is termed irritability; and this irritability is the most apparent and reliable index we have of cellular vitality.

From its physical manifestations it is possible to learn in a restricted sense the behavior of a cell in its environment and to note the effect of the latter on its vital phenomena. According to Engelmann[1] the application of force from without under certain conditions constantly causes the irritability of living protoplasm to manifest itself; whether the force be mechanical motion, heat, electricity, light, or chemical action, the result appears to be the same except as to intensity. When very feeble force is applied the reaction is so mild that it cannot always be recognized, but we are not to suppose from this that no molecular changes have taken place. When a sufficiently strong force is applied protoplasm quickly manifests its irritability by contracting, which in itself must demand a liberation of energy, and molecular changes probably succeed each other more rapidly than under normal conditions.

The length of time for which protoplasm continues to manifest its irritability depends on the intensity of the irritant and the amount of potential possessed by the cell. Contractility ceases at once under intense stimulus, but may appear again after a variable time if the irritation is not too intense or too long applied. Under moderate irritation the power of contracting remains for a relatively longer time and finally is lost, but is regained after a period of rest.

Very strong stimuli seem to arrest the movements of protoplasm at once, evidently because of the molecular changes induced by the irritant directly and not indirectly by the organism in defence of its existence. Certain substances without any apparent manifestation of force also cause the phenomena of protoplasmic irritability to appear, and this is notable of the irritant poisons. Their application causes at first increase of motion and later paralysis. The duration and extent of the one, as well as the time necessary to produce the other, are determined by the concentration of the poison and its specific power of producing vital reaction. The explanation of the action of irritant poisons is not so satisfactory as that of the application of force. Since, however, living protoplasm normally requires a nearly neutral environment, it is quite obvious that certain inorganic poisons, such as the mineral acids and the alkalies, owe their harmful action to the property of rendering the surrounding media either acid or alkaline.

Other poisons and especially the alkaloids are, as Kühne[2] showed many years since of veratrum, able to produce a very intense irritation, even when applied in neutral solution. But these poisonous alkaloids are highly complex organic compounds, and for this reason may have a specific action which easily disintegrates the molecular combinations of the more highly organized protoplasm. Again, it may be believed that the more complex the molecular arrangement the higher the function produced. For this reason the protoplasm of the highest order would be utilized in carrying on the nervous function. When from the presence of poisons like the acro-narcotics the arrangement of the molecular groups is simplified and the cells are no longer capable of continuing their highly specialized nervous function, it is still possible for the cells to retain their vitality and continue their nutritive functions.

From the facts recorded by many painstaking investigators of physiological and pathological cellular phenomena, notably Ch. Robin,[1] Ziegler,[2] and O. Hertwig,[3] it may be said in general that the application of any of the various forces as well as certain poisonous materials agree in so far as they all cause at first acceleration of protoplasmic movements, then inhibition, and finally paralysis. The cell increases in size, its contents become clouded and opaque, and its functions are at first impaired, later destroyed. In fact these conditions are very similar to those that obtain in acute inflammatory processes, especially of the spinal cord when the neural cells are undergoing a process of acute degeneration.

There would be no life were it not for the automatic capability of an organism so to arrange its structure as best to antagonize harmful influences of its surroundings. The observations of Darwin[4] alone, which, however, have been supplemented by scores of other scientists, leave no doubt as to the variation of type which follows a modification of environment. Not only do plants and the higher animals become changed, but also the lower orders.

Thus Maupas[5] has shown that certain salt-water infusoria when removed to fresh water died at once. However, when the change was made gradually, the organism not only lived but lost entirely its salt-water characteristics and became like the analogous fresh-water varieties. When the animal was returned to salt water its former characteristics returned. Here is seen an attempt, and a successful one, of a living organism so to change its structure as to be able not only to resist external influences, but also to assimilate material which it had been unused to and thus maintain itself in its new surroundings.

This selective capability of vital maintenance in the sense of causing recovery from disease has been believed and maintained from comparatively ancient times and constitutes the much used but sometimes little heeded *vis medicatrix naturæ*. That the human economy possesses the power of resisting influences antagonistic to life, and is able when these influences are not too harmful or long continued to perform its normal functions, is certainly not to be doubted, even if the cause and *rationale* of the phenomena are but imperfectly or not at all known.

Can these harmful influences be modified or neutralized by means that are under human control? Or can the living protoplasm be aided in its resistance to destructive environing forces? If the answer to either or both is in the affirmative, then therapeutic measures are of service; if in the negative, they will have no practical value except that of causing a temporary relief from disagreeable symptoms.

Certainly the application of hygienic measures securing satisfactory nourishment and assisting the economy in excreting poisonous materials has been of inestimable service, and without doubt has been the means of restoring to health or prolonging the life of myriads. A criticism of these measures, when their

[1] "Verhalten des Protoplasma gegen künstliche Reize." Hermann's "Handbuch der Physiologie," Band i., S. [illegible]

[2] "Untersuchung über das Protoplasma und die Contraktilität," Leipzig, 1864.

[1] "Anatomie et Physiologie Cellulaires ou des Cellules Animals et Végétales, du Protoplasmas et des éléments Normaux et Pathologiques qui en Dérivent," Paris, 1873.

[2] "Allgemeine pathologische Anatomie," Bd. i., 7 Auf., 1892.

[3] "Die Zelle und die Gewebe. Grundzüge der allgemeinen Anatomie und Physiologie." Bd. xi., S. 296, 1892.

[4] "Variation of Animals and Plants under Domestication," 1868.

[5] "Recherches Expérimentales sur la Multiplication des Infusoires Ciliés." Archives de Zoologie Expérimentale et Générale, ser. ii., tome vi., p. 165 *et seq.*, 1888.

application is judiciously accomplished, would be a most thankless task.

But can the administration of substances, many of which are never normally present in the economy, aid the natural processes in their struggle to overcome disease? Perhaps nearly all physicians would answer this in the affirmative, and yet not a few of the more conservative would impose restrictions—in the affirmative because theoretically at least it would seem possible to supply the cellular structure with materials the absence or deficiency of which prevented the necessary normal metabolic changes; and with restrictions because many of the commonly used pharmaceutical compounds are irritant poisons, the beneficial action of which is still problematical.

Of those substances which *a priori* might be expected to increase the efficiency of cellular metabolism a number are prominent, viz., iron, calcium, phosphorus, potassium, magnesium, and sulphur, mostly in combination with oxygen or as substitute compounds in the various acids. All of these elements are normally present and are necessary to organic tissues. The amount of most of these necessary mineral substances is comparatively small, and, since the vegetal process has already combined them and stored them in or around the cell, it is a question whether they may be of service except when the food is deficient in these elements.

Again the various ferments as found in the gastric, hepatic, and intestinal secretions, which are necessary to change the food into cell pabulum, may be furnished in too small quantities or be of impaired quality. Under such conditions the administration of these ferments, as elaborated by normal organs, should be of service. Also to prevent the accumulation of certain unknown toxic substances the administration of the various internal secretions of certain glands, as the thyroid and suprarenals, seems to be indicated.

All of these measures under proper circumstances are no doubt of the utmost importance to the diseased organism. Experimentally, physiologically, and empirically they have, according to our most competent investigators, caused a restoration to health sooner than would have obtained without them, or have brought about a normal condition when it could not have been expected from the *vis medicatrix naturæ* under hygienic and nutritive measures alone.

These therapeutic measures, however, constitute only a part, and in acute diseases a very small part of those usually recommended, and are generally used to restore the tissues to their normal nutritive states or functional activity rather than to combat individual symptoms.

In the acute diseases, which for the most part, thanks to bacteriology, are now universally believed to be due to living organisms, the administration of remedies has quite a different object in view, and it is in this domain of therapeutics that the writer would plead for more conservatism in the use of pharmaceutical remedies.

The treatment of many acute diseases, notably the specific pulmonary and enteric inflammations and the exanthemata, with many physicians resolves itself into combating symptoms which are unpleasant to the patient or are considered dangerous to the economy. To subdue pain, reduce the temperature, and inhibit or paralyze cardiac action are the main ends sought through the use of drugs; and it might seem on superficial inquiry that, since various symptoms are not present in the healthy human subject, all that is necessary is to cause their disappearance and you have the patient in a condition of health. But from a standpoint of empiricism, as well as experimentally, it is known that the removal of symptoms does not at all constitute a *restitutio ad integrum*. In fact pain, pyrexia, and increased pulse rate are universally known to be only a result of disease and not a cause. When certain living organisms, such as bacteria, remain long in contact with the tissues a reaction occurs, just the same as when a force is applied. Whether the growth of these cellular organisms would alone cause this reaction is not known, since it is impossible to isolate living bacteria from their poisonous excretions for any considerable length of time. However, those which do not elaborate toxic substances may remain long in the tissues without causing manifestations of irritability, although their growth may affect the tissues by withdrawing nourishment.

Bacteria cause disease then directly by disturbing nutrition, true parasitism, and indirectly by toxins which they produce. Thus, true parasitism tends to weaken cellular vitality by withdrawing necessary nutrient materials, while the poisons elaborated irritate the protoplasm, causing increased molecular changes and a more or less rapidly progressive degeneration.

If the pathogenic bacteria were able to develop continually there could be but one termination of all infectious diseases, and that a fatal one. However, as has been stated, when living organisms liberate force to antagonize untoward influences, changes take place which simplify or reduce the molecular structure of protoplasm, and thus it happens that there is formed at last an end product which is still nitrogenous and of complex structure, but not sufficiently so to carry on vital functions. Wherever there is life there will be found as a necessary accompaniment these end products, which not only are of no further use but act as an irritant poison on the economy which produced them. Thus there are produced in the animal economy urea and allied compounds, while the vegetal cellular process gives as end products many nitrogenous substances, some of which are highly poisonous, as the various alkaloids, while living bacteria produce substances which are not yet well known but which are nitrogenous and chemically similar to the crystalloids and colloids produced by animal and vegetal organisms.

Fortunately the living cell is able to excrete these poisonous products and thus free itself from their deleterious action, and this happens in all living organisms but in various ways; for, while animals have a definite excretory apparatus, plants have not, and because of this the poisonous products of vegetal metabolism can be excreted by the cell but cannot be further disposed of except by storing them where they cannot come in contact with the living protoplasm. Many end products from urea of the animal tissues are not only chemically analogous to strychnine, morphine, and other alkaloids and to the bacterial toxins, but have in many instances a similar physiological action. Again, these poisons not only produce characteristic phenomena when administered to an animal but affect all living organisms to a greater or less extent. As is well known, the poisonous alkaloids are not only capable of destroying animal life but are able to destroy the vitality of the plant which originated them, and, as Marcacci[1] has shown, are especially harmful to the developing plant. Urea and allied substances are toxic to the human economy and also to the vegetal when applied in a concentrated solution, as every well-informed agriculturist knows, while the poisonous action of certain vegetable alkaloids as well as bacterial toxins on the animal organism is beyond dispute.

The reaction of the animal economy to these various poisons differs according to the nature of the animal and its environment, the quantity and concentration of the poisons, and finally its specific nature.

[1] "L'azione degli alcaloidi nel regno vegetale e animale." Annali di Chim. ed di Farmacol., 1887, p. 3 *et seq.*

But in general tissue metabolism, body temperature, and blood circulation are increased, while muscular and nervous energy is decreased.

While it is not impossible that the increased tissue metabolism is the principal if not the sole cause of the other phenomena, it can be exactly determined only by quantitive estimation of the products of retrograde tissue changes, which under the various means of excretion and the difficulty of collecting the products is almost impossible. And even more difficult is the precise quantitative determination of the nutritive states and the dissipation of energy.

The physician, then, as a general index of the intensity of the morbid process, relies on various symptoms, of which pain as the psychical expression of protoplasmic irritation, fever the result of increased heat production or diminished radiation, and abnormal cardiac action from irritation of the cardiac motor ganglia or the vasomotor nervous system, as well as the disturbed inhibitory action of the pneumogastric, are the most conspicuous.

Very often indeed the combating of these symptoms seems to be the sole aim of pharmacological therapeusis, and it must be admitted that not infrequently the object is accomplished.

Thus the administration in physiological doses of the vegetable narcotics, opium, hyoscyamus, and cannabis indica, certainly can very often prevent the patient from being conscious of pain; aconite, veratrum, digitalis, and many others reduce the pulse rate; while kairine, thalline, and quinine, as well as many modern phenol derivatives certainly reduce the body temperature. But is it not to be questioned whether all these really assist the economy in its struggle with disease? And may not the very physiological or pathological action which causes the improvement in or removal of the symptoms be inimical to normal vital functions?

An infectious disease may be recovered from only through limitation of the growth of bacteria which produce it. Two factors may serve to accomplish this. First bacteria can live and remain normal only in suitable culture media, and since the peculiar pabulum necessary to nourish them is limited in quantity it occurs that when this is exhausted nutrition is impossible, and development and vitality cease. In the second place the poisons excreted by the bacteria serve to restrict their growth and destroy them. It is not known to what extent each of these factors contributes toward recovery. But theoretically it would seem that the first means is alone to be trusted, since the animal economy may be able to dispense with a part of its organic material which contributed to the nourishment of the parasite without much permanent harm, while the second factor may not only kill the bacteria but the patient, as the results of a famous modern toxin remedy seem conclusively to have shown.

Life has often been maintained for years under the most excruciating pain without apparent physical deterioration, as cases of neuralgias and other chronic nervous diseases testify.

Again, there are those who without apparent disability have a high pulse rate during their entire life, while cases of tachycardia are occasionally met with in which a pulse rate of 140–200 per minute for several days or weeks not only does not cause death but does not seem to disturb very much the patient's general health except as to nervous phenomena.

In the same way a moderate rise of temperature, according to Cantani,[1] has been endured for months without death, and healthy animals have been subjected to a temperature considerably higher than normal for months without causing untoward results, as has been shown by Naunyn.[1]

Also the observations of Tait,[2] Bryant,[3] Unverricht,[4] and many others, show that often patients with a temperature as high as 43° or 44° (109°–111° F.) have been met with and have recovered.

These facts serve only to show that these various symptoms may exist for a long time and be very severe without a fatal result, and that too often when but little medicine was administered.

Again, every physician is familiar with the fact that the danger to life is not at all proportionate to the severity of the symptoms. It is not the pneumonias with the highest fever and very severe pains that are most fatal, as the mortality from this disease in the aged, with whom all the symptoms are usually mild, shows, or the infectious processes with the highest temperature and pulse rate, as pyæmia and certain mixed infections testify.

It has never been demonstrated that combating symptoms ever of itself has caused a cure, in the sense of complete restoration to the normal, or has even assisted the natural forces, since there are no statistics, at least none that the writer has knowledge of, covering a long period and including a large number of cases in which acute diseases have been treated by hygienic measures alone. Certainly a large proportion of patients, in fact a majority, recover after the administration, even in considerable quantities, of poisonous drugs, but whether because of their action or in spite of it has never been proven. And it is not less certain that in many even grave cases recovery ensues without the use of pharmaceutical remedies, as the recoveries in many hydropathic and hygienic institutions show.

Our text-books and teachers of therapeutics are mainly responsible for the propagation of symptomatic medication. The student is often informed that when a patient presents such and such symptoms an active attempt should be made at once to remove them. "Administer aconite, gelsemium, and morphine," says one. "This will bring about relief from pain, a reduction of the pulse rate, and lowering of temperature." "But," says another, "I get better results from veratrum, hyoscyamus, and belladonna." After these remedies have been diligently administered, perhaps recovery has not taken place, but the rise in temperature and other symptoms have become still more serious. "Now choose among a dozen, antipyrin, acetanilid, thallin, or kairin, according to circumstances; and perhaps very large doses of quinine will be more efficacious and less harmful." After a time in consequence of the disease, perhaps aided by drugs, the heart action becomes very weak and rapid. "Now is the time to administer digitalis, strophanthus, caffeine, strychnine, and alcoholic stimulants," says the therapeutist, "if you hope for recovery." And yet in spite of all this the patient does not recover. "Well, you accomplished all that was possible in the present state of our knowledge," he continues, and proceeds with other symptomatic indications and the drugs necessary to annihilate them.

When recovery takes place the novice has, or thinks he has, *prima-facie* evidence that the various drugs caused a cure, and so continues perhaps from day to day to attribute all recoveries to his narcotics, antipyretics, cardiac depressants, stimulants, *et id genus*

[1] "Ueber Antipyrese," Verhandl. d. x. internat. Congr., Berlin, 1890.

[1] "Kritisches und Experimentelles zur Lehre vom Fieber und von der Kaltwasserbehandlung." Archiv für exper. Path. und Pharm., Bd. 18.

[2] "Two Instances of Remarkable Elevation of Temperature." Lancet, July, 1884.

[3] "One Hundred Cases of Hyperpyrexia." Guy's Hospital Reports, vol. l., p. 385.

[4] "Ueber das Fieber." Sammlung klin. Vorträge (Volkmann), N. F., No. 159, 1896.

omne; and when a fatal result follows their use believes that it might have been because a wrong selection was made, or that no system of treatment would have been of service.

The science of pharmacological therapeutics, as applied to acute diseases, is very often expounded in an oracular manner and, now as for centuries past, rests on almost no other foundation than empiricism and pure dogma. *Contraria contrariibus curantur*, one of the oldest and most universally accepted of these dogmas, has certainly been a sheet anchor. But even this cannot be true for diseases which are caused by micro-organisms, if the real cause is considered, since the various alkaloidal remedies used are similar to the toxins in almost every particular. Moreover the supposed physiological antagonism between certain alkaloids has received but scant support in the last few years, and even if true cannot aid in making an exact therapeusis until the specific action of the various toxins has been determined and substances can be found which will not antagonize the symptoms produced by the toxin, but will destroy its harmful influence on the vital units.

The discovery of phagocytosis and of means whereby it may be artificially produced, and the results of recent serum therapy, have invigorated the old doctrine of the *vis medicatrix naturæ;* while experiments on the living animal are showing more and more clearly not only the inadequacy of symptomatic therapeusis to bring about a restoration to the normal, but also the possible dangers which can be caused by the administration of poisonous alkaloids and the recently discovered antipyretics.

Authorities such as Binz,[1] Rossbach,[2] and Rosenthal [3] have shown conclusively that protoplasm cannot produce normal manifestations of energy when acted on by the poisonous alkaloids. And others, as Robin,[4] Kast,[5] and many more, have found that the normal tissue metabolism cannot continue under the influence of various modern antipyretics.

Perhaps the time will come when our text-books on therapeutics will devote most of their space to the consideration of causal and not symptomatic indications, and therapeutic specialists will be unnecessary. When the student learns from his pharmacology the doses, physiological action, and manner of elimination of drugs, and from biology the exact nature of organs and functions, he will no longer need a dogmatic opinion as to the indications for the administration of drugs. Then, too, he may be taught to look at disease from a causal point of view, and learn that it requires more scientific attainment to know when not to administer a drug than it does to treat symptoms. And long before this takes place let it be hoped that the therapeutic *vade mecum* in which the student has only to look in the index for the name of a disease and on referring to it find from one to ten poisonous drugs indicated as a regular treatment, will have become a thing of the past. Drugs without doubt have been of very great benefit to mankind and will continue to be more and more of real service, but it should be remembered that they are able to cause harm as well as good; that the indications for their use, especially in acute infectious diseases, rest for the most part on unproven dogmas: and that when the indications for the use of a drug are doubtful or wanting, it had better be withheld. In all cases the antagonism between living material and irritating surroundings should be borne in mind, and an attempt made to keep the cellular vitality and energy at its most efficient point by supplying proper materials for nourishment, pure air, and water, to assist the chemico-vital processes, and finally to assist the excretory organs in the removal of the poisonous products of animal and vegetal cellular metabolism. And in the mean time the ancient meaningless *contraria contrariibus curantur*, as well as its more modern fanciful opposite, *similia similibus curantur*, will receive due honors if they are laid away with other famous mediæval curiosities, such as the problem of circular quadratics and the philosopher's stone.

[1] "Ueber die Einwirkung des Chinin auf Protoplasmaerregung." Arch. für microscop. Anatomie, Bd. iii., S. 383, 1867.

[2] "Ueber die Einwirkung der Alcaloide auf die organischen Substrate des Thierkörpers." Würzb. med.-phys. Verhandl., iii., p. 346, 1873.

[3] "Ueber die Wirkung des Chinolins." Deutsches Archiv f. klin. Med., Bd. xlii., S. 206.

[4] "L'Antipyrine, son Action sur la Nutrition." Gaz. Méd. de Paris," No. 50, 1887.

[5] "Ueber den Werth der arzneilichen Antipyretica." Verhandl des Kongresses für innere Medicin, Wiesbaden, 1890.

THE EARS OF GRASSHOPPERS, FLIES, AND BEETLES.

BY JAMES WEIR, JR., M.D.,

By far the larger number of entomologists locate the auditory organs of insects in their antennæ. I have only to mention the names of such men as Kirby, Spence, Burmeister, Hicks, Wolff, Newport, Oken, Strauss, Durkheim, and Carus, who advance this opinion, to show what a formidable array of talent maintains it. Yet my observations lead me to believe otherwise, though these authorities are in part correct.

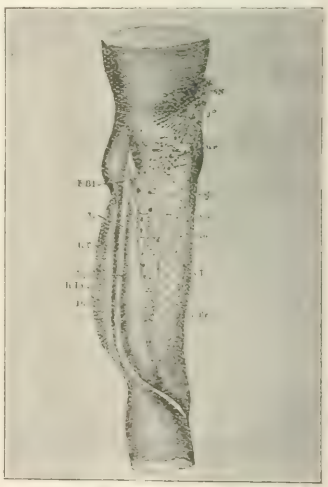

FIG. 1. [illegible]

As far as Lepidoptera are concerned and certain of Hemiptera, they are right—the antennæ in these creatures are the seat of the organs of audition. But in Orthoptera, in most of Coleoptera, in Hymenoptera, in Diptera, and in certain bugs (Hemiptera), they are located elsewhere. The habit that almost all insects have of retracting their antennæ when alarmed by noise or otherwise has done much to advance and strengthen the opinion that these appendages are the seat of insect ears; yet I am confident that in nine cases out of ten the antennæ are retracted through fear of injury to them, and not through any impression made on them by sound. The antennæ are the most exposed and least protected of any of the appendages

or members of the insect body; hence their retraction by insects when alarmed is an instinctively protective action. They shelter them as much as possible in order to keep them from being injured. Again, although the antennæ of most insects are provided with numerous sensitive hairs or setæ, we have no right to assume that these hairs are auditory; no "auditory rods," otoliths, etc., are to be found generally in antennæ, yet there are exceptional instances. Leydig found auditory rods in the antennæ of *Dytiscus marginalis* (Furneaux) (giant water beetle), and I myself have observed them in Corydalus cornutus (its larva is the well-known "dobson" of anglers) and other neuropterous insects. I am inclined to believe that the entire order of Neuroptera has antennal ears, and should therefore in this respect be classed with Lepidoptera.

FIG. 2.—Ear of Horsefly (after Lowne, modified by the author)

In grasshoppers and crickets the ears are situated in the anterior pairs of legs. If the tibia of a grasshopper's anterior leg be examined, two (one before and one behind) shining, oval, membranous discs, surrounded by a marginal ridge, will be at once observed. These are the tympana or ear drums of the ear of that leg. Where the trachea or air tube enters the tibia it becomes enlarged and divides into two channels; these two channels unite again lower down in the shaft of the tibia. The tracheæ of non-stridulating grylli are much smaller than those of sound-producing grasshoppers. The same may be said of the tibial air tubes of the so-called dumb crickets. In grasshoppers and crickets the ear drums lie bathed in air on both sides—the open air on the external side and the air of the air tube or trachea on the inside. Lubbock calls attention to the fact that "the trachea acts like the Eustachian tube in our own ear; it maintains an equilibrium of pressure on each side of the tympanum, and enables it freely to transmit atmospheric vibrations."

In grasshoppers the auditory nerve, after entering the tibia, divides into two branches, one forming the supratympanal ganglion, the other descending to the tympanum and forming a ganglion known as Siebold's organ. This last-mentioned ganglion is strikingly like the organ of Corti in our own ear, and undoubtedly serves a like purpose in the phenomenon of audition. The organ of Corti is composed of some four thousand delicate vesicles, graduated in size, each one of which vibrates in unison with some particular number of sound vibrations. The organ of Siebold in the grasshopper's ear begins with vesicles, of which a few of the first are nearly equal in size; these vesicles then regularly diminish in size to the end of the series. Each of these vesicles contains an auditory rod, and is in communication with the auditory nerve through a delicate nerve fibril. I have observed that each of these nerve fibrils swells into a minute ganglion immediately after leaving its particular vesicle; the function of these ganglia is, I take it, to strengthen and reinforce nerve energy. No other observer mentions these ganglia, as far as I have been able to determine; they may have been absent, however, in the specimens studied by others, yet in the specimens studied by myself—the "red-legged locust" (*Melanoplus femur-rubrum*, Comstock) and the "meadow grasshopper" (Xiphidium)—they were always present.

That grasshoppers, locusts, and crickets can hear, no one who has observed these creatures during the mating-season will for one instant deny; they hear readily and well, for in most of them the sense of hearing is remarkably acute.

Immediately behind the wings of flies two curious knobbed organs are to be observed; these are considered to be rudimentary hinder wings by entomologists, and are called the halteres. Bolles Lee and others of the French scientists call them *les balanciers*. This latter name I consider the correct one, for these organs unquestionably preside over alate equilibrium; they are true balancers. I do not propose to enter into any discussion as to whether these organs are rudimentary wings or not; suffice it to say that they appear to me to be organs fully developed and amply sufficient to serve the purposes for which they were created. Whether or not, in the process of evolution, there has occurred a change of function, is a point which will not be discussed in this paper. As they now exist, I deem them to be the auditory organs of Diptera (flies, gnats, etc.).

The semicircular canals are, to a great extent if not entirely, the seat of equilibration in man. Any derangement or disease of these canals interferes with equilibration; this is well shown in Ménière's disease, in which there is always marked disturbance of the equilibrating function.

If the balancers of a horsefly (*Tabanus atratus*, Comstock) be removed, the insect at once loses its equilibrium; it cannot direct its flight, but plunges headlong to the ground. The same can be said of Chrysops niger—in fact, of the entire family of Tabanidæ, of the gall gnat (*Diplosis resinicola*, Comstock), and of the March flies (Bibionidæ). These widely differing flies constitute the material from which I have derived my data; I will venture to assert, however, without fear of contradiction, that what has been said about the flies mentioned above is equally true of all flies.

FIG. 3. Head of Gnat, showing Auditory Hairs (after Johnson).

When the knobbed ends of the balancers of the horsefly (*Tabanus atratus*, Comstock) are examined with the microscope, the cuticle will be found to be set with minute hairs or setæ; some of these hairs penetrate both cuticle and hypoderm, are hollow, and receive into their hollows delicate nerve fibrils. These nerve fibrils pass inward toward the centre, and enter ganglia, which in turn are in immediate connection with the great nerves of the balancers. There is but one nerve in the insect's body that is larger than the balancer nerve, and that is the optic nerve; hence it is

natural to infer that the balancer nerve leads to some special-sense centre. This centre, in my opinion, is unquestionably the seat of the auditory function. It has been demonstrated beyond doubt that analogous hollow hairs or setæ are prominent factors of audition in many animals, notably crustaceans, such as the lobster, the crab and the crayfish, and many of the insect family; hence it is logically correct to conclude that the hollow hairs on the balancers of flies are likewise auditory hairs. Moreover, there are grouped about the bases of these knobbed organs certain rows of vesicles, which contain auditory rods almost identical in appearance with the auditory rods of the grasshopper. I have determined that in the horsefly (*Tabanus atratus*) there are six rows of these vesicles, and that they are of graduated sizes. There are in the knobs of the balancers minute spiracles, through which air passes into the large vesicular cells which make up the greater portion of the knobs; spiracles are also to be found in the shafts of the balancers, thus providing an abundance of air to the internal structures of these organs and allowing for the free transmission of sound vibrations. I am well aware of the fact that in considering these organs to be the ears of flies I antagonize Lee, Hicks, Wolff, and others who consider them olfactory in character; but from their position, their structure, and, above all, the markedly evident part they play in alate equilibrium, I think the position I take in regard to these organs is a tenable one and one that cannot easily be overthrown.

The ears of Lepidoptera (butterflies) are situated in their antennæ. This fact has been cleverly demonstrated by Lubbock, Graber, Leydig, and Wolff; but in Coleoptera (beetles) my experiments and microscopical researches compel me to assert that I differ somewhat from the conclusions of the above-mentioned authorities. These gentlemen locate the ears of beetles in their antennæ. Lubbock bases his conclusion on an experiment of Will—an experiment which, if it had been carried a little further, would have demonstrated the fact that the ears of beetles are not in their antennæ, but are, on the contrary, in their maxillary palpi.

Will put a female Cerambyx beetle in a box, which he placed on a table; he then put a male Cerambyx on the table, some four inches from the box. When he touched the female she began to chirrup, whereupon the male turned his antennæ toward the box, "as if to determine from which direction the sound came, and then marched straight toward the female." Will concluded from this that the ears of the beetle were located in its antennæ. Seeing that Will's experiment as described by him was incomplete, I took a pair of beetles belonging to the same family (genus *Prionus*), and determined the true location of their ears by a system of rigid and absolute exclusion. These beetles, when irritated, make a squeaking chirrup by rubbing together the prothorax and mesothorax. When I irritated the female she began to chirrup, and the male immediately turned toward the small paper box in which she was confined. I then removed the antennæ of the male, and again made the female stridulate: the male heard her and at once crawled toward her, although his antennæ were entirely removed. This showed conclusively that the organs of audition were not located in the antennæ, as Will supposed and as Lubbock advocates. I then removed the maxillary palpi of the male, after which the insect remained deaf to all sounds emanating from the female. Again, I took an unmutilated male, which at once turned and crawled toward the chirruping female. I then removed its labial palpi, leaving maxillary palpi and antennæ intact: it heard the female and made toward her. The maxillary palpi were then removed (the antennæ being left *in situ*), and at once the creature became deaf. If the maxillary palpi of long-horned beetles be examined, certain vesicular organs, each containing a microscopic hair, will be observed in the basal segments; these, I take it, are auditory vesicles. In some of the Coleoptera I have found auditory rods in the apical segments, though this is by no means a common occurrence. In Cicindelidæ and Carabidæ these auditory vesicles are exceedingly small, and require a very high-power objective in order to be clearly seen. In justice to other observers I must say, however, that I am inclined to believe that in all beetles the antennæ in some way aid or assist audition, but they are adjuncts, as it were, and not absolutely necessary. It is a matter of easy demonstration to show that some of these insects hear less acutely when they are deprived of their antennæ.

SOME PRACTICAL POINTS ON THE ADMINISTRATION OF CHLOROFORM.[1]

By LEO ETTINGER, M.D.,

NEW YORK.

A RECENT editorial on the subject of anæsthesia suggested to me the propriety of some remarks on the above subject. As may be observed, the suggestions are based upon personal experience largely, but it is to be hoped that they will meet with indulgent approval, though some may run counter to prejudices prevalent in this section.

I shall confine myself to chloroform anæsthesia, for which I possess a decided personal predilection. It may be conceded that a varied personal experience of some six years in its administration would justify the judgment that, properly administered, it is a practically safe and convenient anæsthetic. As a result of this experience, the writer is no party to the fear of the danger from chloroform so general among the practitioners of this city. I have also had some experience with ether, and such observations as I have made did not impress me favorably. Its administration is attended by such disagreeable features as the intense stage of preliminary excitement, the cyanosis and salivation, combined with the objectionable after-effects, the intense nausea and retching, lasting from twelve to forty-eight hours, seldom less than twenty-four, that *per se* it certainly cannot be deemed an eligible anæsthetic. All of these facts are more or less true of ether (and rather more than less), even in the most skilful methods of administration: and on the other hand chloroform is practically so free from them that, were the two of equal safety, chloroform would be decidedly preferable. It also seems rather difficult to judge the exact quantity of ether needed. In order to maintain the anæsthesia, its rather free use becomes absolutely necessary. In this respect, chloroform does, it seems, possess a striking advantage, as its administration can be gauged with the utmost nicety.

The only reason generally assigned for the preference for ether is its supposed superior safety as compared with chloroform. Other things being equal, this feeling, it must be said, is not shared by me. But so much has been said of the resultant pneumoniæ and nephritides, many fatal, that there arises the question of its actual safety. Some years ago, when the German hospital of this city substituted ether for chloroform, there was a rumor that more patients died within a week or so following operation than had ever died before from chloroform in a given period.

Now it is to be hoped that the charge of egotism may not arise against me, on asserting that, certain rules salted down with some judgment and intelligence

[1] Read before the Metropolitan Medical Society, May 25, 1897.

being followed, we have in chloroform an entirely eligible and practically safe anæsthetic for virtually all surgical cases. There are a few cases in which its use in the pure state would be inadmissible. It is to be questioned whether in these cases ether would prove any safer. When in such cases general anæsthesia is an absolute necessity, probably the alcohol, chloroform, and ether mixture (so called A.C.E. mixture), in the proportions of one, two, three, would be better. This is to be administered in the same way that chloroform is.

First, in the administration of chloroform the administrator must confine his attention to the narcosis, and to that and nothing else. This might seem a needless injunction, but as a matter of fact it is very rarely adhered to. Its importance cannot be overestimated. The respirations, facial appearance, and pulse should be continually observed. As to the face, stress is to be laid upon the appearance of the nose and lips. The jaw should be kept well forward to prevent swallowing the relaxed tongue. While cases may arise in which it will become necessary to pass a silk ligature through the tongue, personally I have never found it necessary to do so. In fact this should be a very last resort. When possible it is preferable to avoid even the tongue forceps, thrusting forward the angles of the jaw sufficing in nearly all cases. In determining the sensibility of the conjunctiva, the pulp of the ring finger placed over the outer part of the eyeball, and not over the cornea, should be employed. The cornea should not be touched at all, and the conjunctiva very lightly. In fact the relaxed state of the lids is usually a sufficient index to the depth of the anæsthesia. Conjunctivitis of a severe type, and even ulcer of the cornea, have been said to follow careless manipulations of the eye.

Here it may not be inappropriate to refer to certain of the relations between the *narcotiseur* and the operator. While the former, it must be conceded, should defer to the wishes and expressed desires of the latter, still in the actual conduct of the narcosis he should be free from any interference; for, if he is unfit to be trusted with his discretion, he is unfitted for the administration of the drug. On the other hand, he should not worry the operator with remarks about his patient unless it becomes necessary to discontinue the operation, either temporarily or absolutely.

The writer carries his armamentarium in a small box. The latter contains four small vials: one of alcoholic solution of nitroglycerin, 1 to 1,000; one of spirits of camphor; one of nitrate of strychnine of the strength of two grains to the ounce; and one of a solution as follows:

R Morph. sulph. ..... 1 c.c.
Atrop. sulph. ..... 0.02 "
Chloral. ..... 0.50 "
Aquæ dest. ..... ad 30 "
M. S. Magendie.

Besides this there is a tube of hypodermic tablets of digitalin, each one-one-hundredth of a grain. Then there is an Esmarch mask and a chloroform drop bottle. The mask frame is in two pieces, the one readily detachable from the other. The mask, which is thus easily removed, is made of Jaeger white stockinette. It is advisable to have a number of masks handy, so as to have a fresh one for each narcosis. The drop bottle should be only partly filled, and the larger tube should be always kept closed, the chloroform being poured drop by drop from the smaller one.

When expedient it is always well to be supplied with a jar of oxygen, or preferably of a twenty-five per-cent. mixture of nitrous-oxide gas and oxygen. This is a precautionary measure simply. Also it is well for the *narcotiseur* to have a nurse detailed for his special use. The latter is not absolutely necessary, but often proves a material aid. False teeth should be removed; also the condition of the heart should be ascertained. If the latter be not satisfactory, or the pulse be 120 or more to the minute in the absence of any acute inflammatory process, it would be better not to use a general anæsthetic. Or if the latter be inevitable, it will become necessary to modify the administration of the chloroform in such manner as shall be indicated farther on.

As a preliminary step to the administration of the anæsthetic, the hypodermic administration of from seven to ten minims of the morphine solution as above, preferably ten, is advised, except of course with children and when there is a distinct contraindication to its use. Of its great value the writer is convinced. It allows the anæsthesia to be maintained with much less chloroform, while at the same time obtaining the tonic effect of the morphine on the heart and the atropine on the respiration. This measure should precede all capital operations. For these the ten-minim dose should be employed. In fact, often as much as fifteen minims may be given with distinct advantage. Not only will it render the administration of the anæsthetic much easier and safer, but it will eliminate almost entirely all danger of surgical shock.

The chloroform should be administered drop by drop, and no more should be used than is absolutely necessary. It is surprising how far a little will go if carefully administered. It is my custom seldom to exceed a half-ounce for an operation lasting an hour and a half. Some time ago two ounces sufficed for nine different cases, including three laparotomies, all nine of not less than a half-hour duration, some an hour or more. A short time ago there came under my notice an account of a fatal case of acute hepatitis following the administration of two and a half ounces of chloroform during two and a half hours. Judging from experience, the writer has no hesitation in saying that about one-third should have sufficed. These results are attainable even without the use of morphine and atropine. When the latter are employed, even less will suffice. It is in this careful and guarded manner of administration that the safety of chloroform lies. Thus given, it is my impression that it is as safe as ether.

During the anæsthesia one should have at hand a twenty or twenty-five minim hypodermic syringe charged with the strychnine solution, in which two of the digitalin tablets have been dissolved, *i.e.*, provided in the individual case in question no contraindication to digitalin exists.

There are cases in which the administration of either chloroform or ether, as such, would be inadmissible. At the same time general anæsthesia may be an absolute necessity. In such cases, if no renal or pulmonary trouble exists, the A.C.E. mixture should be used. At the same time either oxygen or preferably the twenty-five-per-cent. nitrous-oxide mixture should be kept flowing constantly under the mask. If renal or pulmonary trouble coexists, chloroform itself must be used in conjunction with the gas as noted. The writer is contemplating the construction of a frame which will allow the administration of the oxygen at its lower part, while above is a detachable stockinette mask on which the chloroform is to be dropped for use in these cases. If otherwise permissible, the anæsthesia should be preceded by the hypodermic administration of from one-twenty-fourth to one-fifteenth of a grain of the strychnine nitrate, with or without the digitalin. During the operation, if no hemorrhage exist, the nitroglycerin solution should be used, the half or all of a syringeful at a time. Of course these measures are for this class of cases, and when otherwise the need might

arise. It is not intended that they should be routine practice.

Another ingenious modification of the chloroform narcosis is its alternate administration with pure nitrous-oxide gas, commencing with the chloroform and following with the gas, and from time to time repeating the chloroform.

The possible results attainable by one modification or other of the narcosis were recently demonstrated in a very satisfactory manner in two instances. The first was an extreme case. It occurred in the person of a short, very fat, parturient Bohemian. She at the time was suffering from the effects of a heart lesion of extreme gravity. That organ was enormously hypertrophied and dilated and presented loud aortic and mitral murmurs, both of insufficiency. The pulse was from 120 to 150 per minute, extremely small but rather tense. The patient was profoundly cyanotic and intensely dyspnœic. As above said, at this time she was in labor. Her physician, Dr. Chevcik, realized the gravity of the case, and called in Dr. S. Marx for council. The latter advised immediate delivery by *accouchement forcé*. Here the A.C.E. mixture was employed in conjunction with the oxygen gas, which was kept steadily flowing under the mask. The anæsthesia was preceded by the nitroglycerin solution injected hypodermically, repeated at intervals during the narcosis. After delivery the patient's condition was much better than before the operation. When the oxygen was exhausted, it was followed by the twenty-five-per-cent. nitrous-oxide mixture, kept up for some hours, while caffeine citrate and strychnine were injected hypodermically every two hours. That night, for the first time in months, she was able to lie upon her back. Two weeks later she died of an attack of acute œdema of the lungs, thus showing the extreme gravity of the heart lesion.

In the second case the patient, while exhibiting no urgent symptom, was much exsanguinated from repeated hemorrhages; her urine was loaded with sugar and albumin, and she weighed two hundred and ten pounds. Here the pure chloroform was used combined with the coincident inhalation of the nitrous-oxide mixture. The patient went through the narcosis without a single accident, and emerged from it in the best of spirits. Many similar cases could be cited.

The experiments of the Hyderabad commission indicate that chloroform primarily attacks the respiratory centres; further that it does not overwhelm the latter, but gives warning of approaching danger. This met with in time, in these experiments was always overcome. The writer's personal experience bears out the above in its entirety. As a measure of resuscitation, artificial respiration occupies the very front rank, especially when associated with pure oxygen or the twenty-five-per-cent. nitrous-oxide mixture, and it should always be employed. As adjuvants, the strychnine and nitroglycerin solutions, used as above, are of signal value. In the light of recent experience, Laborde's method of lingual traction is a measure of the greatest value, often attended by results when all else seems to fail, and its use should never be lost sight of. With children, suspension by the heels with artificial respiration is a very valuable expedient.

In conclusion, I have no hesitation in saying that chloroform, thus used with caution and judgment, is the anæsthetic *par excellence*. Its administration can be gauged with the utmost nicety; further, it is simple, and agreeable to both patient and *narcotiseur*. The rest is altogether a question of the intelligence, skill, and judgment of the latter. Were it a question of intrusting the anæsthesia to untried and inexperienced hands, ether would admittedly be much safer, but there is no valid reason for not exacting the above qualities in this field as we should in any other; and I am confident that when they are present chloroform is quite as safe as ether, and for other reasons far more eligible. Thus used it is practically free from danger, and never characterized by the disagreeable phenomena, both with and after, so common to the use of ether. In the vast majority of cases it should be used pure; in exceptional cases it may be modified as above indicated.

Progress of Medical Science.

Some Points of Preventive Treatment in the Diseases of Women.—Dr. A. E. Giles, writing in *The Hospital*, says that the first question here is of overstudy. Probably the average girl can acquire as much learning as the average boy; but to do so she requires bodily health and strength equal to his. Now the boy and girl work under different conditions, which if ignored lead to disaster. Let girls pursue their study, but more leisurely; they will arrive at the same goal, but a little later. Physically and emotionally a girl arrives at womanhood earlier than a boy arrives at manhood; this necessitates a corresponding saving of energy in some direction, and the direction in which this economy of energy is to be sought is in intellectual activity. Secondly, it should be impressed upon parents that premature emotional excitement is bad; sensational love novels should be avoided, and the "sex question" left dormant as long as possible. The idea that marriage is the only goal of a girl's existence should be discouraged, for, while it may be true that in the rôle of wife and mother the average woman is seen at her best, the preparation for this position is best attained, not by directly aiming at it, but by the development of physical health, by the training of the mind, by breadth of thought and widening of interests.

Methylene Blue in the Diagnosis of Renal Permeability.—Drs. Achard and Castaigne (*Le Bulletin Médical*, June 23, 1897) have applied the methylene-blue test to fifty new cases. In twenty-two cases in which the elimination of the blue was normal, five autopsies have shown the integrity of the kidney. Out of twenty-eight cases in which there was a tardy elimination, lesions of the kidney were found at thirteen autopsies. In this series three cases of urinary infection with suppurative pyelo-nephritis were found, one case of interstitial nephritis with considerable atrophy of the kidneys, cystic kidneys in a cardiac case without albuminuria, and a kidney presenting evidences of obstruction in a woman who died of uræmia. It was also noted in the case of circumscribed lesions of the kidney that the permeability remains normal if the remainder of the parenchyma is healthy. Variations of permeability and a return to the normal after recovery from acute disease, as in pneumonia, were noted; again, after finding a normal permeability in a tuberculous patient, there would be a sudden delay and albuminuria and anasarca would come on. This test is useful not only in medicine, but also in surgery, as it indicates whether the kidneys perform their functions in a normal manner. Dr. Schwartz reports a case of hydronephrosis in which catheterism permitted the urine from each kidney to be examined separately. The blue did not pass from the hydronephrosic side, and it flowed with some delay from the supposedly healthy side, from which side, too, the urine showed traces of albumin. Epithelial nephritis gives rise to an excessive permeability, according to Dr. Bard, who has not demonstrated this statement anatomically; however, the facts agree with the experiments of the authors.

Relative to the variations liable to occur from a defective absorption of the blue, it is found that even considerable œdema does not prevent the normal appearance of the blue in the urine and does not detract from the results of the test. To verify the state of absorption, injections of twenty grains of chlorate of sodium may be given, this substance being eliminated by the saliva and the urine at the same time, and possessing the advantage over iodide of potassium of producing no pain and no local irritation. The appearance of the chlorate in the urine is slower than in the saliva with subjects in whom defective permeability is also attested by methylene blue. As regards the technique of the procedure, it is advisable to make deep injections in order to avoid the formation of indurated nodules. It is also absolutely essential to employ methylene blue, since the other aniline blues do not give the same results. Methylene blue can be distinguished by examining a dilute solution with the spectroscope; it gives a dark line in the red portion, which the other blues of commerce do not give. Drs. Hauser and Voisin have inquired concerning the colorless derivative of methylene blue in the urine of patients submitted to the test. This colorless compound of methylene, when heated in urine with acetic acid, becomes green. This chromogene can be separated, as it is insoluble in chloroform. The colorless methylene above mentioned is not the same as methylene white. The chromogene can be transformed into the blue and administered in this state. In twenty-nine subjects a comparative study of blue and chromogene have been made. In nine instances the two substances appeared simultaneously after the normal delay of one hour. In nine patients there was an equal delay for both the blue and the chromogene. In cases having more or less profound lesions of the kidney as demonstrated by autopsy, the chromogene passed before the blue. The chromogene seems to be more diffusible and to traverse the diseased kidney sooner than the blue. In eleven cases there was a delay of the blue only, the chromogene appearing normally. Several clinical facts of this kind seem to show that in such cases there are functional disturbances of the kidney, two autopsies have shown degenerative lesions of the epithelium. To sum up: A delay of the same time in both blue and chromogene is a sign of defective permeability; a delay of the blue only is met with when the trouble with the permeability is less profound; functional trouble of the kidney may be the exclusive cause of a delay limited to the blue alone. A number of cases are cited, showing how useful this test may be in difficult diagnosis.

Hysteria in Early Life.—In *Pediatrics* of August 1st is a paper of much interest by Dr. Eshner on this important subject. Ideas concerning that form of neurosis known as hysteria have undergone a revolution, and the widespread belief that women alone were subject to this disease, though not quite extinct in the minds of some, has by the great majority been relegated to the limbo of the past. The French school, and especially Charcot, must be thanked for our improved knowledge of hysteria, and it may now be said to be a well-recognized fact that hysteria may attack men and even quite young children. When it occurs in infants the cause is, according to the English school, due to hereditary neurosis. Hysterical affections are often found at an early age in children of a neurotic predisposition. Clouston says in hysterical cases occurring in children there is no doubt "a pathologically premature development of the emotional brain centres due to bad heredity, and this is sometimes accompanied by a premature sexual development." Dr. Eshner says that the disorder has a pathology of its own, as he believes the results of future investigations will demonstrate; but as yet we need more knowledge, especially in the domain of physiological and pathological chemistry, before we may hope for a solution of this aspect of the problem. Dr. Eshner reports eight cases in his paper, which, although not all quite typical, possess instructive features.

Radiant Heat in Ulcers of the Leg.—Dr. Colleville describes in the London *Lancet*, May 29, 1897, a simple way of treating ulcers of the leg by heat without any very elaborate apparatus. A square plate of metal that will stand heating and a Bunsen burner are all that is required. The metal is brought to a dull red heat by the burner and the ulcer is exposed to this heat at a distance of about ten inches, the remainder of the limb being protected by a bandage. The temperature is about 45° C., which is easily borne and the burner is regulated to maintain the heat at just this point during the whole of the sitting, which lasts from twenty minutes to an hour. This glazes the surface, and large granulations are visible through the thin semitransparent coating. It is best to leave the ulcer exposed to the air for some time and to be careful in dressing the wound not to touch the surface with aseptic gauze or other materials used. Some improvement is generally noticeable after the first sitting and the wound is cicatrized after from five to twenty-five sittings. In the later sittings, when the ulcer is almost healed, a more moderate degree of heat may be used. When gas is not available, the sun or the heat of a fire may be utilized. The beneficial effects of the treatment are attributable to the combined action of heat, light, and ventilation.

Two Hundred Cases of Serum Diagnosis.—Dr Gasser reports in *La Presse Médicale*, June 26, 1897, that he has had occasion to use the serum diagnosis of Widal in two hundred cases. In each of these the diagnosis of typhoid fever was questionable on the first day of clinical observation. He has constantly used Widal's extemporaneous process with a mixture of one to ten. In one hundred and twelve of the doubtful cases the reaction was positive. This reaction took place in one case on the third day, once on the fourth day, twelve times on the fifth day, and on the eighth to tenth day in the others; that is, from the time that the patient entered the hospital. In one case the reaction did not take place until the twentieth day. Dr. Gasser was able to test on himself the disappearance of the agglutinative power. He entered upon his convalescence May 29, 1897, and October 1st his serum was still agglutinative, but it was no longer so on November 1st. He has tried the reaction in a large number of cases suspected of being typhoid fever, complicated in fifty-two cases with gastric fever, in thirty with continued marsh fever, in five cases with phthisis, in one with generalized subacute tuberculosis, and in two with true pneumonia. In all these cases the reaction was negative save in the two pneumonias. In these two instances the measure of the agglutinative power was not known. For one of the cases the reaction was sought by the slow process; the clarification of the tube was observed after boiling a mixture of one part of serum to twenty parts of bouillon. Perhaps these two patients had been under the influence of a frustrated typhoid infection. One of them lived in a locality that had furnished a certain number of typhoid cases, the other had suffered from diarrhœa for a short time before entering the hospital. In a large number of cases examined the diagnosis was difficult and doubtful, and the reaction of Widal has proven a very useful guide.

Intestinal Antisepsis.—Dr. Heinrich Stein (*Centralblatt für die gesammte Therapie*, 1897, vii., 321) enumerates the various agents by means of which in-

testinal antisepsis can be obtained. In abnormal acidity he recommends calcium carbonate (two and one-half drachms per day in one-grain doses) or magnesia (ninety grains per day). Creosote, guaiacol, and resorcin are useful; their action is shorter but they may act after absorption on distant areas. Menthol (one and one-half grains twice or thrice daily), naphthalin (one and one-half to seven grains at a dose or seventy-five grains per day), thymol (one and one-half grains several times daily in alcoholic solution); this latter is an excellent parasiticide. Since absorption limits the action of the drug in the intestine various antiseptics have been prescribed with insoluble substances. salol, parachlorsalol, kresosalol, beta-naphtholsalol, or betol, the latter being slightly poisonous. These are broken up in the intestine by the action of the pancreatic juice and by unformed intestinal ferments into salicylic acid and kresol, etc. Other substances proper for this purpose are benzonaphthol, ammonium sulpho-ichthyolate, salophen, etc. The absolutely insoluble antimicrobic remedies can be given in much larger doses; such are phenolbismuth (fifteen to forty-five grains per day), the same dose for kresol-bismuth, chlorophenol-bismuth, bismuth salicylate, zinc salicylate, trioxymethylen. For irrigation solutions of salicylic acid in sterilized water (one to two parts per thousand), silver nitrate (two-tenths to five-tenths per thousand), boric acid (five-tenths per hundred), creolin (one one-hundredth to two one-hundredths per hundred), tannin (two to five per hundred). Applications of an insoluble antiseptic powder, as afforded by the bismuth preparations, may be used during irrigation.

Treatment of Erysipelas.—Dr. H. Koster (*Therapeutische Monatshefte*, 1896, vi., 299) states that painting the affected parts twice daily with vaseline and covering the application with linen and fastening with a gauze bandage has given good results. In addition to this the treatment is purely symptomatic: for headache, acetanilid or antipyrin; if the temperature is above 104° F., quinine in seven-grain doses; if cerebral symptoms are present, ice bag to the head, and a cathartic such as calomel or senna; for delirium, chloral; for heart weakness, digitalis and alcohol. One hundred and thirty patients treated in this way show results equally as good as those obtained by other methods. The duration of the fever is the same as when lead lotion, painting with iodine, ichthyol-vaseline, or sublimate-lanolin are resorted to. By this method extension of the process takes place about as frequently as when other methods are used. Complications by phlegmonous processes are no more frequent in this method, which presents no danger of exciting untoward symptoms, such as burning or poisoning, and it possesses the additional advantage of being inexpensive.

Abscess of the Liver Six Years after Tropical Dysentery.—At a recent meeting of the Académie de Médecine, Berger (*Gazette hebdomadaire de Médecine et de Chirurgie*, July 18, 1897) related the history of a man who had suffered from dysentery in Tonquin six years previously, in association with congestion of the liver. The latter yielded to the application of a blister. On returning to France at the end of six months he was again seized with dysentery, which lasted for three years. In the sequence of an attack of influenza six months before he came under observation, acute pain appeared in the hepatic region followed by tumefaction in the right hypochondrium. At the same time there were loss of appetite and emaciation, though but little fever. The upper limit of hepatic percussion dulness reached to the level of the third rib. A diagnosis of abscess of the liver was made and evacuation proposed, but the accumulation ruptured into the lung and was being gradually expectorated. The patient, however, continued to fail and it was decided to attack the abscess directly. In accordance with the evidence yielded by physical exploration, ten centimetres of the seventh and eighth ribs was resected, the seventh intercostal space and the diaphragm were incised, and a large abscess in the liver was disclosed. This was drained and tamponed. The expectoration at once subsided, the cavity gradually diminished in size, and in the course of a month and a half the patient was restored to health.

Percussion of the Spleen.—Dr. Bäumler (*Wiener klin. Wochenschrift*, 1896, No. 40, p. 909) thinks that we can ascertain the size of the spleen by percussion better than by palpation, as is usually done. He holds that a large spleen can rarely be detected by palpation even when there is no tympanites, while even moderate enlargement can be made out by percussion. He says that dulness in an oval area seven to eight by ten centimetres indicates enlargement. It is important to percuss with different degrees of force in different parts in order to avoid the difficulty caused by the position of the thin spleen between organs of different degrees of resonance. Dr. Bäumler holds that even the posterior and upper parts of the spleen can be made out. Usually the diagonal position of the patient is best, but sometimes it is well to try various positions. Dr. von Ziemssen agrees in general with Dr. Bäumler, and urges the desirability of marking out and measuring the area of dulness.

Wine and Cirrhosis.—M. Lancereaux, who is one of the greatest living authorities on the action of alcohol, has lately given his opinion with regard to the true cause of drinkers' cirrhosis. His conclusions are deduced from personal observations of two hundred and ten persons addicted to drink in Paris. M. Lancereaux disputes the statement that the usual cause of cirrhosis is the consumption of an excess of alcohol, but says that it is due to drinking large quantities of wine, and especially of red wine. He lays the blame upon the potassium salts, and gives the result of certain experiments made upon animals. By means of these experiments it was proved that potassium salts when administered to animals usually killed in from fifteen to eighteen months, and cirrhosis was discovered in the majority of them. M. Lancereaux demonstrated by other experiments the fact that alcohol taken in excess produced fatty degeneration of the hepatic cells and subsequently fatty cirrhosis. The final conclusions arrived at from this series of experiments were that wine, and plastered wine in particular, is the cause of atrophic cirrhosis.

The Treatment of Chronic Articular Rheumatism.—Dr. Ott, in his address before the German Congress of Internal Medicine, June 9–12, 1897, recommended woollen clothing and especial attention to the diet, with meat as a foundation, together with eggs, fish, vegetables, butter, and cheese; especially milk. Water is the best beverage; alcohol and the carbohydrates should be much restricted, moral depression avoided; a journey may be found beneficial in some cases. Treatment should be prompt and meet every stage of the disease, which should be carefully watched even long after convalescence. Acute symptoms must be surmounted by every possible means—fever, by repose in bed and restricted diet; local pains and swellings, by Priesnitz compresses, liniments, or salves containing opiates, or by injections of morphine. Absorption is hastened by painting with iodine. Puncture is useful in severe swellings; so, too, the elastic bandage. Some observers find salol beneficial; others prefer antipyrin, acetanilid, phenacetin, etc. When

there is swelling of the joints without much loss of mobility or dislocation of the ends of the bones, external treatment is indicated, such as will favor absorption. Tincture of iodine and ichthyol are sometimes successfully employed. Baths should be recommended when there is no acute or subacute inflammation, but should be suspended as soon as inflammatory symptoms reappear. In all baths the main point is heat. This can be attained by the new partial steam and hot-air baths; mud baths produce a mechanical stimulation of the surface beside the effect of heat, and hot mud compresses have been found useful in weak patients. The simple hot springs have been found useful for persons of great nervous excitability. The success of sulphur baths is probably due to the heat. The speaker also recommended hydriatic processes which combine hot and cold baths, to tone up a system debilitated by the effects of heat. In the raw seasons it is better to resort at once to the hydriatic process. He also recommends active and passive movements. The most favorable climate for persons affected with polyarthritis deformans should be warm, dry, and sheltered from winds, with hot springs convenient. Battaglia and Ischia in Italy, and Algiers, fulfil these conditions. Medication should aim to strengthen and tone up the system. Iron, quinine, and cod-liver oil are indicated. Singer has cured one case of typical acute rheumatism with intravenous injections of sub limate.

Goat's Milk as a Food for Children.—Since the observations of Schwatz have been published, considerable interest has been taken in the spread of tuberculosis by the use of cow's milk, and as a remedy it was proposed that all such foods should be boiled before being used by the infant. Since that dictum was promulgated, further chemical analysis of boiled milk has shown that the nutrition of the fluid is greatly reduced. Keer has demonstrated that fresh unboiled cow's milk contains fat globules with granular contents, which are immediately taken into the blood to build up the cellular structure, while cooking totally destroys this constituent; the fluid albuminoid constituent is also so much transformed that it is difficult to dissolve and assimilate in the alimentary canal. He is persuaded that milk should not be boiled when its nutritious value is required, and he therefore proposes the milk of goats for the feeding of children, as this animal is immune from tuberculosis. He further proposes the precaution of having the vessels containing the milk sterilized and covered to prevent aerial germs from infecting the food. Another advantage in the goat's milk is the constancy of its constituents, owing to the animal carefully selecting its own food and avoiding a great quantity of fluid matter. It can be fed in the stall with the same ease and satisfaction as the cow.—*Vienna Cor. Med. Press and Circular.*

To Combat Syphilis.—Dr. Chistiakov, of St. Petersburg, in a paper on the prophylaxis and therapy of syphilis, says that treatment should be both specific and general. Results are the best when the case comes under observation early. Treatment should be persisted in after the symptoms have disappeared in order to prevent their return. During a relapse we must return to specific treatment. In regard to the different processes of administering mercury, and their relative value, he says that when mercury is given by the mouth its absorption is very slow and the result mediocre. When friction is resorted to, the mercury is sometimes absorbed in too small a quantity and sometimes in too large an amount, consequently the results are uncertain. When injections are used, absorption takes place with more regularity, and the results are more definite. Experiments have convinced the author that the best method of administering mercury is that which can be varied according to the period of the disease and the condition of the patient. All methods have their inconveniences. The introduction of mercury by the digestive tract may cause gastro-intestinal trouble, friction may poison those about the patient, and injections may produce serious local affections. Hence, we should avoid giving mercury by the mouth when there is gastro-intestinal trouble, and avoid friction when the skin is disposed to erythematous eruptions, and avoid subcutaneous injections in nervous individuals and in children. Frictions to succeed must be carefully carried out and injections must be frequently repeated. Intramuscular injections of salicylate of mercury in suspension in oil or sterilized vaseline are one of the best means of administering mercury, the dose used being one to one and one-third grain every third, fifth, and seventh day for the first injections. We must not forget that specific treatment predisposes to certain affections, such as stomatitis, gastro-enteritis, anæmia, etc. Often these depend on causes outside the treatment and produce a temporary intolerance for specific treatment. It is necessary to eliminate the cause and accustom the system to specific medicines. Iodide of potassium is an excellent therapeutical agent in the secondary and tertiary stages, but to prevent relapses it is necessary to combine it with mercury. All means that tend to strengthen the organism should be employed concurrently with the specific treatment. Transform the pathological condition of the patient, give him strength enough to withstand new manifestations of syphilis in the intervals of treatment and care for him as a convalescent. A syphilitic may marry after five years without infecting his wife and producing syphilitic children. This term may sometimes be shortened to three years if the patient has been well cared for and during the second and third years has had no secondary or tertiary manifestations, and if he adopts preventive treatment before as well as after marriage. To diminish the influence of syphilis on posterity, specific treatment is recommended during pregnancy when there are any symptoms of the disease in the pregnant woman; when the woman becomes pregnant during the first five years of her disease; and when signs of syphilis were observed in her last pregnancy; when there existed secondary manifestations in her husband at the time of conception.

A Contribution to the Knowledge of the Anatomy of the Levator Ani Muscle.—Dr. William W. Browning, of Brooklyn, concludes a paper (*Medical News*, June 12th) with the following propositions: 1. That in the human subject it belongs to the class of rudimentary muscles. 2. That the weakness of its origin as well as the direction and the insertion of its fibres is consistent with such design. 3. That it is unphysiologic for a muscle to furnish a continuous support. 4. That the recto-vesical fascia is in itself sufficient, when intact, to afford the required support. 5. That the muscle is no better developed in the female (in whom support is most required) than in the male.

Abductor Paralysis in Stricture of Œsophagus.—In a recent issue of *The Hospital* some practical observations are made by Drs. Felix Semon and Savery in commenting on a case of bilateral paralysis of the abductors, due to malignant stricture of the œsophagus. While more or less incomplete paralysis of both these nerves is of not infrequent occurrence, complete bilateral paralysis is rarely met with, owing to the fact that death almost always occurs before the lesion has caused the paralysis to be complete. The case observed teaches that, in addition to complete aphonia and dyspnœa,

the latter on exertion only, another important symptom may result from the complete paralysis, viz., the impossibility of taking nourishment in the ordinary erect position. The explanation is that when both recurrents are paralyzed the closure of the glottis is impossible, and food and drink are therefore apt to pass into the larynx. But the mucous membrane of the larynx is supplied by the internal branch of the superior laryngeal nerve; hence sensation is not affected, and cough ensues when the food particles enter the larynx. The position recommended by Wolfenden for cases of painful dysphagia was found to be successful, viz., horizontal position on the side, with the head well over the edge of the bed; fluid nourishment is to be taken through a feeding-cup inserted into the lower angle of the mouth. When taken in this position the fluid passes, not over, but by the side of the larynx through the hyoid fossa, and penetrates into the œsophagus without coming in contact with the posterior surface of the larynx.

The Indigestion of Breast-Fed Babies.—It is stated in the *Archives of Pediatrics* that for many reasons less attention has been paid to the gastro-intestinal affections met with in breast babies than in those nursed artificially. Breast milk is the natural and ought to be the sole food of the infant, under physiological conditions, during the first year of life. Unfortunately there is too often a departure from the normal state, and the child, perhaps also the mother, may suffer during the lactating period. The natural pride and instinct of the mother are apt to lead to the presumption that all is going well with her and the infant, when in reality she is not a good nurse, and the child is suffering more or less. In America the question of infant-feeding in all its aspects has received the attention which it deserves, and which it has not met with in England. The greater prevalence of diarrhœal disease during the tropical summer of the American continent has stimulated study and research on this important subject. Milk laboratories have been established in the larger cities, and the feeding of infants has been placed on a comparatively sure and scientific footing. Owing to the researches of such men as Jacobi, Rotch, Holt, Lewis Smith, Meigs, and others, we are now furnished with scientific data to guide us in the study of the subject. In the writer's own country the question of milk supply is now receiving some attention from sanitarians, but there is as yet no ready means available to the general public of obtaining pure or properly sterilized milk in quantity, nor of having milk analyzed or tested in laboratories established for the purpose. Whenever the milk of the mother is defective in quantity or quality, the child is apt to suffer. It does not thrive or grow at the normal rate. Instead of being plump and firm and happy, it is soft and flabby, and is always crying, and never appears to be satisfied. Its skin is harsh and dry. The tongue is somewhat red, often slightly furred. Vomiting from gastric catarrh is not infrequent. The stools are unnatural, and present various appearances depending on the quality of the milk. They are generally loose, and seldom have the natural mustard color or consistence; but are usually pale, and often of an ashy gray color, sometimes greenish, or mixed gray and green. The soft curd of the mother's milk is present undigested in little granular-looking masses. There is an excess of mucous secretion, sometimes there are little streaks of blood. As a rule, indigestion of mother's milk is more frequently intestinal than gastric, diarrhœa being more common than vomiting. This appears to be largely due to indigestion of the fatty and proteid elements of the milk. Infants, in regard to their digestive capabilities, are but little men and women, and it is certain they have their idiosyncrasies likewise. The milk of a mother seems to be suited to her own child under physiological conditions. Irregular suckling is one of the commonest causes of indigestion in babies. It produces a milk too concentrated, which inevitably causes indigestion in the child. Regulation of the suckling is generally sufficient to give relief. Irregular suckling may be due to two principal causes. It may occur in cases in which the milk is normal in quantity and quality, from bad habit on the part of the mother in being over anxious about her child, and carelessly giving it the breast at irregular times or whenever it cries. The more frequent cause, however, is deficient quantity of milk. In this case the child is unsatisfied and gets the breast too frequently in consequence, with the result that the milk becomes too concentrated and causes indigestion. The remedy is the addition of some substitute feeding. Inseparably connected with the question of maternal feeding is the no less important one of the artificial rearing of infants who are unable to obtain breast milk. The huge mortality of infants under one year is hardly reduced to a lower level than it was half a century ago, when in England and Wales no less than 76,328 children under twelve months died, out of a total of 350,101 deaths in one year. Want of breast milk and bad artificial feeding are largely responsible for this. Surely it is our duty, as a profession, to try and stem this tide of mortality. There is no way to attain this end but by education: and let us hope in the near future that we will be in a better position in this respect, and have greater facilities for showing good results in what, it must be admitted, is an important branch of preventive medicine, too much neglected.

Postpuerperal Endocarditis of the Left Heart Propagated to the Right Heart by Perforation of the Septum.—An interesting observation by Dr. Charrin is found in the columns of the *Milwaukee Medical Journal*, as follows: The patient, a woman of twenty-three years, was taken three weeks after confinement with intense headache, anorexia, severe lumbar and epigastric pains, palpitation, swelling of the face and eyelids, and œdema of the extremities. When she entered the hospital, the face was pale, there was considerable weakness, and she had some metrorrhagia. The respiratory apparatus presented a few râles of congestion at the bases. The intense dyspnœa was evidently caused by a cardiac lesion. At the apex was heard an intense souffle and from time to time a systolic *piaulement*. On the following days appeared a go-and-come bruit at the middle part of the heart: at the apex there was an almost metallic resonance: there was no *frémissement*. The dyspnœa increased, and during the evening the patient expectorated hæmoptoic sputa. Delirium supervened and the patient died during the night. Autopsy: Blood from the heart sown on different media remained sterile. The endocardiac vegetations alone gave cultures of staphylococcus aureus. The right ventricle contained a fibrinous clot. The aortic sigmoid valves presented vegetations which completely deformed them: these vegetations were ulcerated, the valves perforated. There was no valvular aneurism. At the site of one of the valves existed a perforation of the interventricular septum, establishing a communication between the two ventricles. On the upper surface of the left leaflet of the tricuspid valves existed a pediculated polypoid vegetation at whose base opened the interventricular fistulous tract. There was nothing on the mitral valve. At the apex of the left lung was an infarct, black in color and of the size of a small apple. The right lung was œdematous but still crepitating; at the base of the lower lobe existed a large infarct. In a pulmonary vein, at this

level, the clots were almost puriform. The uterine mucosa was red, the cavity dilated; and there was thrombosis of the uterine veins without true suppuration. The most interesting revelation was the communication of the two ventricles by ulceration of the septum and the probable propagation by that way to the tricuspid. The lesions, already remote at the time of autopsy, were probably produced shortly after labor, remaining latent for some time. This communication, produced at the site of congenital lesions, permits us to suppose that in the latter the mechanism may have been also an endocarditis.

Latent Ulcer of the Stomach.—In a late number of *Health* an account is given of a remarkable case of latent ulcer of the stomach, which came under M. Dieulafoy's observation. The first symptom which manifested itself was perforation, there had been no previous gastric symptoms, no dyspeptic troubles, and no vomiting of blood. The patient was a young woman who was apparently in good health, although about two months before she had complained of pain in the stomach, to which, however, she did not attach much importance. Her appetite was good and she never complained of indigestion, and on the day that perforation took place she performed her usual work and appeared to be perfectly well. Shortly after dinner she was suddenly seized with a horrible pain in the epigastric region, and a physician was called. But he could not make an exact diagnosis, and, thinking that it might be a case of hysteria, prescribed an enema containing laudanum. On the following day M. Dieulafoy saw the patient. The pain was then somewhat mitigated, but it extended over the entire abdomen; the abdominal wall was tense rather than swollen, and the slightest touch or pressure over the abdomen was intolerable. The pulse was frequent, but the general condition was rather good; the expression of the face was not anxious; there were no peritoneal facies, no hiccough, and no vomiting. However, M. Dieulafoy gave a diagnosis of generalized peritonitis, and the patient was immediately taken to the hospital, where an operation was performed. At the time of her admission the temperature was 101.6° F., and the pulse 120. The abdomen was swollen and tense. Median subumbilical laparotomy was practised, and when the abdomen was opened a stream of yellowish liquid escaped. The intestines appeared to be congested, and their surface presented creamy-like false membranes of recent formation. The appendix was found to be in a healthy condition, and the genital organs were not involved: the seat of the peritoneal lesion was evidently the upper part of the abdomen. During the exploration the patient's general condition became so aggravated that it was not thought prudent to lengthen the incision and prolong the operation; so the abdomen was closed after the peritoneum had been subjected to lavage with boiled water. The patient died on the following morning. At the autopsy the integrity of the appendix and the genital organs was verified, but on the anterior surface of the stomach, at a distance of about a centimetre from the small curvature, and at an equal distance from the cardia and the pylorus, a large perforation was found; it was of about the size of a florin, and its borders were not thick; there were no surrounding peritoneal changes. On the posterior surface of the stomach there were some adhesions which united it with the pancreas; these adhesions were very loose, and were easily torn away with the finger. They surrounded a second perforation, which corresponded exactly in size, shape, and situation with the first one. The appearance of these ulcers resembled the classic type of simple ulcer of the stomach, and they had certainly existed a long time before perforation occurred. It is incomprehensible, says M. Dieulafoy, how an ulcer which was serious enough to cause perforation could have remained completely indolent; it is possible, he thinks, that symptoms had manifested themselves at some time, and that they had been forgotten by the patient or neglected by those who observed them. M. Dieulafoy thinks that this case demonstrates that, in the presence of a sudden attack of peritonitis, the physician should not attribute it only to appendicitis, salpingitis, intestinal perforation, or perforations of the biliary tracts, but to perforations of the stomach as well, although there may be no history of previous gastric troubles. At the present time, he says, when surgical intervention in peritonitis is of daily occurrence, an early and correct diagnosis may, in favorable cases, assure the recovery of the patient.

The Removal of Cancerous Gall-Bladder.—Heidenhain has recorded the case of a woman, aged sixty-one, who during nine months previous to admission to hospital had suffered from pain in the upper part of the abdomen, with occasional severe exacerbations. At this time the liver dulness began at the fifth rib, and did not extend below the costal margin in the mammary line. The enlarged gall bladder was very distinctly felt, and presented an uneven surface, attributed to omental adhesions. The abdomen was opened by an incision along the outer edge of the right rectus muscle. Extensive adhesions had to be separated. The enlarged gall bladder and adjacent part of the liver were drawn out of the wound. The liver in the neighborhood of the gall bladder was grayish-white in color, which was attributed to interstitial changes. The walls of the gall bladder were much thickened, and gall stones were easily felt inside it. An incision into the wall of the gall bladder showed that it was the seat of malignant disease. The cavity of the gall bladder was accordingly not laid open, but a portion of the liver, with the gall bladder, was resected by means of Paquelin's cautery. The cut edges of the liver, as well as its general surface so far as it was open to examination, showed no evidence of malignant disease. The cystic duct was ligatured and divided and the whole removed. The patient made a good recovery from the operation, and was discharged six weeks later. There was a stone as big as a walnut in the gall bladder, and eighty-four smaller stones of the size of a pea were also found. The mucous membrane of the gall bladder showed papillary excrescences. Microscopic examination of the liver substance also revealed malignant disease. The prognosis appeared here to be fairly good, as the growth seemed to be limited to the parts removed. Early diagnosis of carcinoma of the gall bladder is hardly possible, and the case is usually too far advanced for operation when it is discovered. Courvoisier, in one hundred and three collected cases of carcinoma of the gall bladder, found gall stones in seven-eighths of the cases. The more it is recognized that long-continued gall-stone disease is best treated by operation, the more often will it happen that carcinoma of the gall bladder will be capable of being dealt with.—*Deutsche medicinische Wochenschrift.*

The Requisites of a Pure Water Supply.—Krauss (*Cleveland Journal of Medicine*, March, 1897) says 1. That the water supply of any city or village should not in any possible way be liable to pollution or contamination from the sewage of any other community. 2. That the sewage of a city should not be emptied into any watercourse not having a current of three to five miles per hour, and then the sewage entrance should be at a distance of one mile or more from the intake. 3. That when the water supply of any

city or village is a navigable stream, the water should be sand filtered before being pumped into the reservoirs or water mains. 4. That for ordinary drinking-purposes the water should not be taken in its primitive or raw state, but be either filtered, boiled, or distilled and aerated. 5. That not only chemic but bacteriologic examinations of the water should be made, at least once weekly, to determine its character as a safe or dangerous water for domestic use, and if contamination is shown to exist the services of an engineer should be enlisted to detect if possible the cause and origin of such contamination.

Chloroform versus Ether.—Gay says that the accumulated testimony of the past fifty years tends to prove conclusively that ether kills slowly, chloroform quickly; that ether kills by asphyxia, chloroform by cardiac paralysis; that ether gives plenty of warning, chloroform often none whatever; that ether is safer in healthy and strong people than in the weak and prostrated, but that chloroform is nearly as fatal in the vigorous as in the debilitated. Ether does not demand any especial skill in its administration; chloroform does. Proper treatment easily and effectually overcomes the unfavorable symptoms from ether; treatment often does no good whatever in accidents from chloroform. In short, ether is the safest general anæsthetic known; chloroform is not.—*Boston Medical and Surgical Journal.*

Chemical Examination of Human Breast Milk.—Adriance (*Pediatrics*, vol. xiv., No. 2) sums up a report upon the chemical examination of two hundred specimens of human breast milk, as follows: 1. Excessive fats or proteids may cause gastro-intestinal symptoms in the nursing infant. 2. Excessive fats may be reduced by diminishing the nitrogenous elements in the mother's diet. 3. Excessive proteids may be reduced by a proper amount of exercise. 4. Excessive proteids are especially apt to cause gastro-intestinal symptoms during the colostrum period. 5. The proteids, being higher during the colostrum period of premature confinement, present dangers to the untimely born infant. 6. Deterioration in human milk is marked by a reduction in the proteids and total solids, or in the proteids alone. 7. This deterioration takes place normally during the later months of lactation, and, unless proper additions are made to the infant's diet, is accompanied by a loss of weight or, again, is below the normal standard. 8. When this deterioration occurs earlier, it may be the forerunner of the cessation of lactation, or well-directed treatment may improve the condition of the milk.

A Study of Chlorosis.—Dr. Simon (*American Journal of the Medical Sciences*, April) concludes: 1. An anatomical basis of chlorosis has not been satisfactorily determined. 2. A perversion of the appetite—excessive consumption of starches and sugars—is a common symptom of chlorosis. 3. The development of chlorosis is due to an insufficient consumption of animal proteids. 4. Chlorosis is far more common than is generally supposed, and occurs in both sexes and at almost all ages. 5. The diagnosis of chlorosis should be based altogether upon an examination of the blood. 6. The term chlorosis should be discarded, and "simple anæmia" substituted. 7. Iron is not a specific in the treatment of chlorosis. 8. In the treatment of the disease attention should primarily be directed to the diet. 9. In cases in which iron fails satisfactory results may be obtained, without medication, from a suitable diet, in which animal proteids, bone marrow, and dark beer are the principal factors. 10. The beneficial effects of bone marrow are not due to the amount of iron which it contains.

Epidemic Mastitis.—The Budapest correspondent of *The Lancet* cites an epidemic of mastitis, occurring in twelve women, in all of whom the disease developed during the first week following childbirth. In none could the disease be traced to lesions of the skin covering the nipples or to sores in the mouths of the suckling infants. All of the patients had, however, been attended by the same midwife, who it was learned had charge of an infant suffering from stomatitis, and who was assumed to be the channel of infection. The mastitis ran a course different from that usually observed. The onset was marked by a severe rigor, which was soon followed by hyperpyrexia, swelling of both breasts, and rapid formation of deep abscesses. Incisions liberated a quantity of thick pus, which was found to contain large numbers of streptococci and staphylococci. The healing of the abscesses, though appropriately treated, was somewhat protracted.

Pregnancy in a Rudimentary Uterine Horn, with Rupture and Death, Probable Migration of Ovum and Spermatozoid.—Cullen and Wilkins (*Johns Hopkins Hospital Reports*, vol. vi., 1897) have reported the case of a married woman, twenty-nine years old, who had previously borne a child and died in the fourth month of pregnancy with signs of hemorrhage. Death occurred six hours after rupture of the fœtal sac. Upon post-mortem examination the abdominal cavity was found to contain four thousand cubic centimetres of blood and a fœtus of three or four months' development. The uterus consisted of a well-developed right horn, to which was attached by a muscular band an impregnated left rudimentary horn. The latter had ruptured, and the corpus luteum was found on the side opposite to that of the pregnancy. Microscopically the right, well-developed uterus was shown to possess a typical decidua, and the right tube contained the remains of the placenta lying free in its cavity. The cells of the corpus luteum resembled closely normal decidual cells. The pedicle joining the two horns contained a canal five millimetres in diameter, lined by a single layer of cylindric epithelial cells resting on a delicate stroma, external to which was a longitudinal muscular coat, and covering this in turn a coat of circular muscular fibres. The canal was closed at both ends, and there was no communication between the two horns. Migration of the ovum and spermatozoid occurred probably by way of the abdominal cavity. It is pointed out that cases of this kind are rare, rupture usually taking place between the fourth and fifth months and the patient dying with signs of internal hemorrhage. Some, however, advance to term, and two classes can be established: (1) those attended with rupture; (2) those in which rupture does not take place. Anatomically these cases differ from those of tubal pregnancy, in that the uterus is flexed toward the side opposite to the pregnancy, in that the pedicle of the fœtal sac springs from the uterus at the internal os instead of where the tube comes off, and in that the round ligament springs from the outer side of the sac instead of from the uterus. Clinically the symptoms of tubal pregnancy and of pregnancy in a rudimentary uterine horn when rupture has taken place are virtually the same. On examination of the uterus, however, the sound reveals that in the latter case the canal is flexed at the internal os and the uterus deviates to the side away from the tumor. The pedicle of the sac commences at the internal os instead of at the uterine cornu, and is usually of sufficient length to allow free mobility of the impregnated rudimentary horn. The treatment consists in amputation of the impregnated rudimentary horn. Migration of the ovum and spermatozoid occurs frequently when the impregnation of a rudimentary uterine horn takes place.

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THE CHARITY ABUSE.

WITH the commencement of the college terms and with the necessarily more active clinical work in the metropolitan hospitals the struggle for clinical material will be proportionately manifest. Thus it is to be reasonably expected that the old abuse of medical charity will boom along as destructively to the higher interests of the profession as ever, and will revive the old complaints against the atrocious unfairness of the entire system. It is some comfort to know, however, that the large majority of a suffering profession is still on the side of radical reform, and has not yet lost heart in its efforts to right a most grievous and far-reaching wrong.

In witness of this indication we note that one of the papers which called forth a very extended discussion at the meeting of the State Medical Association was upon the subject named. Dr. Wiggin certainly handled the abuse of charity in a straightforward, sensible, and practical way. It was the old story retold, but it always bears rehearsal at a time when the young practitioner is wearily waiting for business and weighing his chances for ordinary success against very heavy odds. The fight against the abominable evil of indiscriminate medical charity is now one for actual existence as a profession. Think of the statistics quoted by Dr. Wiggin from Dr. Stephen Smith's report! Either we are living in an age of pauperism or else charity, pure and simple, is an outrageous lie! What answer is there to the statement, founded on the study of the present dispensary and hospital systems, that fully forty-nine per cent. of the entire population of New York are virtually unwilling to pay for private medical attendance? It is not difficult to explain the reason for this when we look into the outrageous methods of free treatment as carried on at the Vanderbilt Clinic for all classes of pretended paupers, and when we note the gross wrongs connected with the well-advertised bids for pay patients at the Roosevelt and other ostensibly charitable institutions. Even the Sloane Maternity levies a mortgage on the good intentions of the coming mother by offering to care for her during her confinement, for sums varying from fifteen to twenty-five dollars for her entire term. How about the new lying-in hospital founded by a multi-millionaire for so-called charity, which institution, to prove its reason for being, must have its beds filled at any cost to the self-respect of the patient or the ultimate impoverishment of the doctor? The boards of managers draw the line between the propriety and impropriety of the thing, and the profession is expected gracefully and resignedly to toe the mark. But we still maintain that there may be hope for us yet.

The best of all indications is that the public in general is beginning to understand the true situation of affairs. The daily press and the pulpit are inclining to attack the questionable motives of the so-called Christian philanthropists. The more the subject is ventilated the better will it be for the real truth. It is quite true, as claimed by one of the speakers at the meeting in question, that the profession is very much to blame for tacitly submitting to the present tactics of charity. The only way to reconcile differences in regard to mooted points of responsibility between managing boards and medical staffs is to create an authoritative bureau of arbitration, as indorsed by the speaker in question and often enough advocated before. Dr. Wiggin covers this and many other essential points in his summing up of remedies. In fact, this was the central idea of the bill which passed the legislature last winter, but which failed to become a law because of the weak-kneed condition of our present governor, who was persuaded to miss the opportunity of gaining the good will and support of the medical profession by listening to the arguments of two or three gentlemen who represented merely the college interests as to clinical material. But, as we have already said, the profession is still earnest in its endeavors to right the monstrous wrong and will again be heard before the next legislature, college or no college, governor or no governor. It is simply a question of right and fair play, and we can afford to wait and have still courage to fight. The MEDICAL RECORD has always been on the side of the great majority of the profession in this matter, and is more than ever determined to do its best to bring this bitter, burning wrong within the pale of candid and fearless discussion.

THE PROGRESS OF YELLOW FEVER.

THE epidemic of yellow fever in the South begins to show signs of subsidence, owing no doubt to the favorable weather conditions which have prevailed during the past few days on the Gulf coast. The daily mean of temperature is gradually falling and the course of the disease is apparently checked somewhat by the cooler weather. A slight frost is usually encountered, according to the records of the weather bureau, some time between the 22d and 29th of this month, and when that comes we may look for a speedy termination of the epidemic. From the date when the disease prevailing at Ocean Springs was recognized to be yellow fever to Monday of this week, the total number of cases in the five places most severely afflicted by the scourge was exactly sixteen hundred. The mortality has fortunately been slight, being only about 7.5 per cent., a remarkably low figure for the disease

when occurring in communities where it does not prevail habitually.

There are at present cases in quarantine in Boston, Baltimore, and most of the important northern Atlantic ports; but of course there is no danger of the spread of yellow fever in the North at this season of the year. The disease has been prevailing for the past three months in the island of Jamaica, the latest reports, dated October 9th, giving the total number of cases in Kingston as fifty-three, with eighteen deaths. One of those who have had the disease is the newly appointed United States consul, Mr. Dent. The physicians of Kingston are not of one mind, however, concerning the nature of the disease, some calling it malignant typhoid fever. It hardly seems possible that there could be a confusion of this sort, and the suspicion is forced upon the reader of the conflicting reports that this is only an attempt to conceal the true nature of the disease. If this is the case, the physicians are scarcely acting for the good of the island, for the occurrence of yellow fever is an accident, and the disease may reasonably be expected to disappear when the cooler weather sets in, but the existence of a widespread epidemic of typhoid fever would point to a grave and probably permanent defect in the water supply.

A cable dispatch to *The Sun*, dated October 10th, states that Dr. Sanarelli, the discoverer of the bacillus of yellow fever, announces that he has discovered a curative serum. He will shortly publish the results of his experiments. This is interesting as a matter of news, but it is fortunately too late for us to profit by his discovery, even if it should be substantiated.

THE HEALTH OF THE CITY AND THE DINNER TO THE MAYOR.

Considering the present disgraceful condition of our streets, with their noisome emanations from reeking trenches and their odorous banks of obstructing dirt, it is quite amusing to learn from the daily papers that our good mayor has been the willing and grateful recipient of a congratulatory dinner from a political club. There is a grim humor about the affair which can find its full vent only in the meaningless and frothy encomiums of post-prandial oratory. Considering that all the heads of departments were present and took part in the proceedings, it was a becoming opportunity for the delectable city government to lift itself by its own breeches. There were so many pleasant things said on the score of reciprocal politeness that the finest possible opportunities were offered for balancing a pleasant joke on the point of a grave fact, thus making the dinner a grand success. Doubtless the health of the city was the merriest toast of all. We quite agree with the good intentions of the guests in avoiding disagreeable subjects, as otherwise the dinner would have missed its avowed purpose and the distinguished city official would have been deprived of the hearty indorsement of his sham and impotent policy of municipal reform.

THE BOOM FOR THE CIGARETTE.

It is reported that a committee of experts has examined all the different brands of cigarettes and has pronounced them free from all adulterations. All the specimens are declared to contain nothing but pure tobacco. So far so good; but what about the tobacco and the nicotine they contain? If no tobacco or paper was used in the construction of the cigarette, nor anything else to make it what it is, we should be still better off. At best it is the most objectionable form in which tobacco can be used, and sorely needs all the apologies that are so persistently made for it.

News of the Week.

Long Island Road's Hospital Service.—The new emergency hospital car, which has been under construction in the shops of the Long Island Railroad Company, at Morris Park, Long Island, for several weeks, has been completed and will be put into commission some time next week. The car is sixty feet in length, with sliding doors at both ends and also on either side. It is fully equipped with all the necessary modern surgical apparatus, and will be in readiness for use at all times, though it will not be used in the case of minor accidents. About one-third of the car will be used as an operating-room and the remaining space will be occupied by twenty-four cots of an improved pattern, which can be converted into stretchers. The car will be in charge of Dr. J. Frank Valentine, the surgeon-in-chief of the Long Island Railroad Company, who is also the president of the New York State Society of Railroad Surgeons.

Mr. Ernest Hart.—We regret to learn that the health of Mr. Ernest Hart, the accomplished editor of the *British Medical Journal*, has been for a long time impaired. Recently it was found necessary to amputate his leg on account of necrosis of the bones of the foot, Mr. Bryant and Mr. Mitchell Bruce performing the operation. The patient rallied well, and is reported to be now making satisfactory progress toward recovery. The many friends of Mr. Hart in this country will sympathize deeply with him in learning of this misfortune, and they will join us in the earnest hope that he may soon be restored to health and strength and may long be spared to continue the editorial labors which he has discharged so faithfully and so well, to his own credit and in the best interests of the profession in Great Britain.

A Bureau of Clinics.—It is announced that the physicians connected with the teaching institutions in Philadelphia have organized a central bureau where all information will be given inquirers concerning the work for the day in the various branches of surgery and medicine at different hospitals in the city. This is accomplished by notice to the bureau by postal card or telephone. By this means the physicians who visit the city may be able to take advantage of the clinical facilities offered by the hospitals of Philadelphia, and any one calling at the central bureau can

ascertain what medical or surgical work may be going on during that day in any one of the different hospitals.

Typhus Fever at San Francisco.—The officials of the San Francisco board of health recently discovered a case of typhus fever at St. Luke's Hospital in that city. The patient, a man, aged twenty-three years, was removed to the pesthouse.

Death from a Siphon Explosion.—A child recently died in this city from injuries received in the explosion of a siphon of carbonated water which she was carrying at the time.

Dr. D. W. Hanger, of Fishersville, Va., recently took by mistake an overdose of strophanthus, and was saved only by the exertions of Drs. Watson, Morrison, and F. M. Hanger, of Staunton. We congratulate our *confrère* on his escape.

Tapeworm and the Fair Sex.—We have received eleven communications from friends in various parts of the country who protest against the statement made by a contributor that woman alone was privileged to entertain a tænia. Each of these writers reports from one to seven cases under his own observation of tapeworm occurring in male subjects. We are forced to the conclusion that women have no monopoly of this attenuated parasite.

Texas Fever Not in Iowa.—Dr. William Horne, of Mt. Ayr, Iowa, writes that the report that Texas fever had been found among cattle in southwestern Iowa is incorrect, and that there is not a single case within four hundred miles of Mt. Ayr.

Death of Professor Roy.—Dr. Charles T. Roy, professor of pathology at the University of Cambridge, England, died October 5th. He was born in 1854, was a surgeon in the Turkish army during the Servian war, was professor superintendent of the Brown Institution, and was called to the chair of pathology at Cambridge in 1884.

State Aid for Johns Hopkins University. — The Baltimore board of trade will, it is reported, memorialize the State legislature at its approaching session, setting forth the great advantage to Baltimore in a hundred different ways of having the Johns Hopkins University there, and drawing attention to the serious loss it has suffered through the lapsing of dividends on Baltimore and Ohio stock, upon which it depended for a large part of its income. The board will ask the legislature to extend aid to the university from the public treasury.

Philadelphia County Medical Society.—At a stated meeting of the Philadelphia County Medical Society, held on September 22d, Dr. Edward Martin read a paper on "The Operative Treatment of Goitre," and exhibited a series of cases in which partial excision of the enlarged thyroid gland had been successfully performed. In one of the cases the gland became the seat of suppuration, with rupture and spontaneous cure. The majority were instances of simple goitre, although one or another exhibited symptoms of exophthalmic goitre. The results in all of the cases were eminently satisfactory, from both a surgical and a medical point of view. The operation would seem indicated when medical measures have failed or afford no promise of relief.

Milk Inspection in Philadelphia.—Acting upon a communication from a number of prominent physicians, who plead for a closer inspection of milk, contending that the depots for retailing milk, and especially the general grocery store, should be under rigorous control of the board of health, the sanitary committee of this board has adopted a resolution instructing the director of the Laboratory of Hygiene to institute in conjunction with the milk division of the board a methodical bacteriological examination of the milk supply.

Schuylkill County (Pa.) Medical Society.—At a meeting of the Schuylkill County Medical Society, held at Tamaqua, Pa., on October 5th, Dr. G. M. Hamilton, of Shenandoah, read a paper on "Burns," and Dr. B. C. Maude Coble one on "Spina Bifida."

Obituary Notes.—Dr. J. A. Mayer, of Mauch Chunk, Pa., died at Philadelphia on October 5th, from heart disease, at the age of sixty-seven years. He was a native of Germany, but had been a resident of Mauch Chunk for forty years.—Dr. Henry E. Brannin died at Blackwood, N. J., on October 4th, in consequence of an apoplectic seizure, at the age of sixty-one years. He was graduated from Jefferson Medical College in 1858, and was from 1879 attending physician to the Camden County Almshouse and Insane Asylum, taking an active part in an epidemic of typhus fever that broke out in these institutions in 1881.—Dr. J. K. Eshleman died at his farm, Glen Isle, near West Chester, Pa., on October 7th, in his eighty-eighth year. He was a graduate of Jefferson Medical College, but for many years had withdrawn from the active practice of his profession.—Dr. John A. Raub died at Philadelphia on September 29th, at the age of sixty-one years. He was graduated from the medical department of the University of Pennsylvania in 1862, engaging in the practice of medicine at Mount Bethel, Northampton County. He was at one time president of the Northampton County Medical Society. He came to Philadelphia in 1872.—Dr. P. Y. Frye, of Oyster Bay, N. Y., died at his home on October 9th, aged eighty years. He was a graduate of Dartmouth Medical School in the class of 1846.—Dr. Robert B. Bradford died at the Home of the Incurables in Washington on October 9th, aged sixty-six years. He was born in Virginia, and resided first in New York after his graduation. He early went into politics and had not practised for many years.—Dr. Jarrard K. Smith, government physician at Koloa, in the Sandwich Islands, was shot down in his doorway, on September 24th, by a native whose mother and sister Dr. Smith had declared lepers and ordered to Molokai. Dr. Smith was born on the island of Kaui. He was educated at Honolulu, but received his medical training in this city.—Dr. W. Stoeder, professor of materia medica in Amsterdam, is reported to have been frozen

to death on Mt. Ararat, during an ascent of the mountain by members of the International Geological Congress.—Dr. Munro, of Union, S. C., died at Atlanta, Ga., on October 11th. He was a graduate of the University Medical College, in this city, in the class of 1876.

Pathological Society of Philadelphia.—A stated meeting of the Pathological Society of Philadelphia was held on September 24th, the president, Dr. J. H. Musser, occupying the chair. Dr. D. Riesman exhibited a specimen of primary carcinoma of the gall bladder, with extensive metastasis or extension by contiguity to the liver. A stone was present in the gall bladder. Dr. Joseph McFarland read a paper upon "Coccidium Oviforme," exhibiting macroscopic and microscopic preparations and specimens. The disease had broken out among rabbits used for experimental purposes, and had proved fatal on a large scale. The disease is occasionally encountered in man. Dr. A. Hand, Jr., exhibited specimens from a case of tuberculosis in a child, two years old—lungs, intestines, and spleen being profoundly involved and a tuberculous tumor being present beneath the epicardium. Dr. J. P. Arnold exhibited a tumor as large as a hen's egg, arising from the dura and embedded into the median aspect of the left hemisphere. Death resulted from unrecognized pneumonia. The lungs showed, besides, evidences of tuberculosis. In addition to hemiplegia, convulsions, and loss of sight, there was optic neuritis, more pronounced on the right. Dr. M. H. Fussell exhibited button-hole narrowing of the mitral orifice.

University of Texas. — Dr. William S. Carter, demonstrator of physiology in the University of Pennsylvania, has been elected professor of physiology in the University of Texas.

College of Physicians of Philadelphia. — At a stated meeting of the College of Physicians of Philadelphia, on October 6th, Dr. A. A. Eshner read a paper entitled "A Case of Obscure Diagnosis exhibiting Hysteric Stigmata," and presented the patient. There had been present vertigo, vomiting, hiccough, disordered gait, and nystagmus, with hemihypalgesia; and marked improvement followed hypnotic suggestion. Dr. G. H. Makuen exhibited a case of imperfect voice and one of stammering cured by the employment of scientific educational methods. The first occurred in a young man of about twenty who had used the high-pitched voice of youth, and the second in a woman who had stammered badly for quite thirty years. In both the results were extremely satisfactory.

Insanity in Prussia is reported to be increasing so rapidly that the asylums are entirely inadequate to accommodate the large number of patients requiring treatment. In 1871 the total number of lunatics in Prussia was 55,063, in 1880 it had risen to 66,345, while in 1896 it had gone up to 82,850. It is interesting to note also that, while the growth of insanity is general, it is more marked among men than among women. Of 100,000 Prussian males there are 278 insane, and of a like number of women, 243.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending October 9, 1897. October 2d.—Medical Inspector J. C. Wise, Passed Assistant Surgeon F. A. Hesler, Assistant Surgeon R. K. Smith, detached from the *Philadelphia* and ordered to the *Baltimore;* Medical Director N. L. Bates detached from the Museum of Hygiene and ordered to duty as chief of the bureau of medicine and surgery. October 5th.—Medical Director J. R. Tryon detached from the bureau of medicine and surgery and ordered to New York as general inspector of United States naval hospitals. October 6th.—Medical Inspector H. J. Babin ordered as president of the naval examining board, New York, October 9th; Medical Director C. H. White detached as president of the naval examining board, New York, October 9th, and ordered to Washington in charge of Naval Museum of Hygiene. October 8th.—Assistant Surgeon J. C. Pryor detached from the naval hospital, Mare Island, and ordered to the *Adams.*

Of Sound and Disposing Mind and Memory.—The Paris correspondent of the *Therapeutic Gazette* tells of a young poet who for some time had been accustomed to use both hashish and morphine, who recently committed suicide by means of an overdose of the latter drug. By his will he left the greater part of his fortune, amounting to $120,000, to his mistress, and $1,000 to a member of the legal profession. If, however, his will were attacked by any members of his family on account of supposed undue influence, the entire amount was to go to the latter legatee. The brother-in-law of the poet endeavored to have the will annulled, not on account of undue influence, but because of the well-known abuse of morphine which the deceased had suffered from. The court decided that inasmuch as the abuse of morphine could not be considered as in any sense doing away with the culpability of the individual in a criminal case, it could not be regarded as diminishing the responsibility of the individual in a civil cause.

Antisepsis in the Barber Shop.—A cable dispatch to the *Sun* says that the sanitary authorities of Paris have induced the prefect of police to issue stringent instructions to barbers, informing them that all metal instruments must be plunged directly after use into boiling soapy water. All combs of tortoise shell, ivory, or celluloid must be replaced as far as possible by metal, so as to be more easily cleansed and disinfected. Scissors, razors, clippers, and brushes must be heated to 100° C., or placed in a receptacle containing a prescribed chemical solution, before use. Shaving-brushes must be dipped in boiling water. Instead of powder puffs blowers must be used. Finally, hairdressers must wash their hands before passing to another customer.

Influenza in peculiarly virulent form has for some months been raging in Mero, in Asia, and alarm is felt in Russia lest another wave of the disease spread thence over the Western world.

Society Reports.

NEW YORK STATE MEDICAL ASSOCIATION.

Fourteenth Annual Meeting, Held in New York, October 12, 13, and 14, 1897.

CHARLES PHELPS, M.D., PRESIDENT.

First Day—Tuesday, October 12th.

THE meeting was called to order by the president, DR. CHARLES PHELPS, at 10:30 A.M.

Report of the Committee of Arrangements.—DR. CHARLES E. DENISON, of New York, read the report of this committee, and extended to the members a hearty welcome.

Annual Report of the Council.—It was stated that there was in the general fund in the treasury a balance of $3,510 to the credit of the association.

Cruel Treatment of Animals in Transportation.—A communication was read from the New York State Society for the Prevention of Cruelty to Animals and Children. It asked the co-operation of the association in preventing the cruelties now imposed on animals while in transit, stating that during the past year at Buffalo sixteen thousand sheep and hogs had been taken out of the cars dead, and more than eight thousand had been removed at the same place in a diseased or disabled condition; moreover, these animals were sold for public food and consumption.

Resolutions Concerning the "Hospital Grab."—Before the acceptance of the report, DR. THOS. H. MANLEY asked what action had been taken by the council on the resolutions that he had presented to them at the two preceding meetings of the association. These resolutions, it would be remembered, were in regard to the injustice done to the medical profession here by the wholesale turning out of the members of the visiting staffs of the city hospitals. The secretary explained that reference had been made to this matter in the printed volume of Transactions, and, on being pressed for a more specific answer, stated that, so far as he recollected, the council had practically refused to take any action.

Acute Catarrh of the Middle Ear as a Sequel of the Grippe.—DR. SAMUEL W. SMITH, of New York County, presented the first scientific paper, with the above title. He said that the physician should be able to recognize and treat intelligently acute inflammation of the middle ear, but it was true that the average practitioner did not do so. Ordinarily, the victim of chronic otorrhœa would state that the physician who had attended him at the time of his first attack had practically advised him to "do nothing," or, at most, syringe the ear with soap and water. One of the early and prominent symptoms was a deep-seated pain, throbbing in character, and increased by talking or any sudden expiratory act through the nostril. Recumbent posture would increase the pain. A tickling sensation was experienced in the pharyngeal organs, with dulness of hearing and tinnitus aurium in the affected ear. After a few hours the pain would extend frequently from the ear to the eye, and along the side of the head to the occipital region, over the mastoid process and down the neck. About this time the pain would be very severe, and would be associated with a rise of temperature to 101° or 103° F., and perhaps also with delirium and great constitutional disturbance. Speculum examination would show a loss of the normal line of the drumhead, and the latter would soon begin to bulge toward the meatus. In favorable cases there would be a rupture either through the drumhead into the external canal, or into the throat. Not infrequently, connective-tissue bands would connect the ossicles to the walls of the tympanum, and so give rise to a permanent impairment of hearing. If early paracentesis were performed, the disease might be cut short. It was a lamentable truth that about seventy-five per cent. of these patients, through improper treatment, lost at least a portion of their hearing. More than this, this complication of the grippe might endanger even life. Pachymeningitis and thrombosis sometimes occurred, and even embolism and metastatic abscesses might result.

Differential diagnosis: In periostitis of the osseous portion of the external canal the differential diagnosis was more difficult. In periostitis there was an itching sensation along the osseous portion of the external auditory canal; in otitis media, if these symptoms were present they were referable to the pharyngeal orifice of the Eustachian tube, and travelled along the tube to the middle ear. In periostitis, the pain gradually developed; in otitis, its onset was sudden. Again, the speculum would aid in drawing the line between the two diseases; for in periostitis the membrana tympani was rarely the seat of any special change, whereas in otitis media the drum was always changed in appearance. Exploration with a blunt probe would aid in making the diagnosis, because when the latter touched a spot which was the seat of a periostitis it would cause severe pain; this would not be observed in otitis media.

DR. LEROY J. BROOKS, of Chenango County, said that although not a specialist, he had made it a practice to do two things in these cases, viz.: (1) to Politzerize the patient two or three times a day, beginning as soon as the symptoms and signs of otitis appeared; and (2) to siphon hot saline solution into the affected ear at short intervals. It was difficult for the general practitioner in private practice to obtain permission to perform paracentesis of the drumhead. He was confident that the measures he had just recommended would often abort these troublesome, not to say serious attacks.

DR. BERNARD COHEN, of Buffalo, also favored the use of the Politzer bag, and thought it a decided advantage first to put a few drops of chloroform in the tube. This seemed to assist the dilatation of the tube, and at the same time give almost instant relief. The instillation of oils in the ear was objectionable on account of their tendency to become rancid; if such an agent must be used, it was better to use some hydrocarbon like albolene, or else to use glycerin. Although a general practitioner, he did not hesitate to perform paracentesis quite early, and it was certainly much better to do this than to run the risk of the serious complications which were liable to develop when this so-called conservative policy was adopted. He had found that ear affections did badly when quinine was given.

DR. MORRIS E. DAVIS, of New York, agreed with the last speaker regarding the inadvisability of administering quinine. In these cases complicating the grippe, the treatment should consist in a saline purge, large doses of salicylate of sodium, hot applications to the ear, and hot gargles to allay the inflammation in the throat.

DR. SMITH, in closing the discussion, said that he did not favor the use of the Politzer bag, because of the pain that it produced. He felt sure that if any physician having an occluded Eustachian tube should use this air bag upon himself, he would not be disposed to inflict this treatment upon others. In children, relief would be afforded by using a dropping-tube, and with it instilling hot water into the affected ear, the patient lying on the side with this ear uppermost. When the Eustachian tube became so occluded that the discharge was pent up and forced the drum outward, it seemed to him proper to perform paracentesis, and so prevent rupture of the drum membrane.

What Shall We Do to be Saved?—Dr. T. J. Hillis, of New York, presented a paper with this rather startling title. He read only a portion of the paper, which was intended to depict, in a graphic manner, the ruin that had been wrought by dispensary abuse. It was an allegorical presentation of the subject, and contained, among other descriptive pieces, one entitled "The Deacon's Confession." According to the story, Dr. White—better known as Deacon White—felt impelled, one evening at a religious meeting, to unburden his mind regarding the sinfulness of his career. He said that before studying medicine he had been a shrewd business man, and had carried his hard business methods even into his subsequent professional life. It was he who had plotted the establishment of the "free-to-all memorial dispensary" in order to outdo his fellow-practitioners in the vicinity. He had succeeded in gratifying his ambition, but in doing so had pauperized the community, as he expressed it: "It has been said that 'the evil that men do lives after them,' but the evil that I have done lives now." As a result of his act, the honorable and competent medical practitioners of his locality had been compelled to close their doors; their patrons had been allured to the dollar-a-month banquet, and it had proved to be the banquet of death. At first his medical brethren had fought manfully for their rights, but they had soon succumbed in the unequal struggle.

A Curious Condition of the Appendix Vermiformis as Found at Operation.—Dr. E. D. Ferguson, of Troy, read this paper, and presented a specimen. The latter he considered to be unique. It had been removed from a man, thirty-two years of age, whose previous history had been good. He had had his first attack of appendicitis in March, 1893. This attack had been a protracted one, and an abscess had opened into the bowel. In December of the same year he also had a mild attack. In December of 1896 he had another attack, but was not seen by Dr. Ferguson until last January. There were at that time much pain and fever. An ice bag was kept over the affected part, and the patient fed on albumen water. The operation was not done until February 3d. A broncho-pneumonia developed three days after the operation, and an abscess developed five or six days after the operation. It was opened, drained, and packed with iodoform gauze. After this, recovery was uneventful and complete. At the operation, many firm adhesions were encountered, and after a long search a mass was found near the iliac muscle, situated between the small intestine and the colon. This mass was found to contain the distal portion of the appendix, which had become separated by gangrene. The canal had, however, been maintained. No remnant of the mesentery could be discovered, nor was there evidence of pus or recent inflammatory exudate. The opening into the cæcum was infolded and closed, and the abdomen closed without drainage.

Amputation of the Appendix by Gangrene. — The specimen was a fine example of amputation by gangrene, and from the history it was probable that this occurred in 1893. In connection with this specimen, another case was reported. He had first seen the patient last February, but had deferred operation. Another and more severe attack occurred on September 23, 1897, and then the operation had been done within six hours of the onset of the symptoms. The appendix was greatly congested, and the mucous coat thrown into folds. At the point of separation of the two portions of the appendix was a black circular line of uniform width.

Operations for Appendicitis. — The speaker said that if all patients were to be protected from the possible contingency of an acute general septic peritonitis, we must operate in all cases, because there was no means of foreseeing the occurrence of this grave complication. The most common fault now seemed to be to minimize the risks of the operation. Some recent and trustworthy statistics placed the mortality even higher than ten per cent. It was probable that, taking all cases, eighty to ninety per cent. of patients would recover from the first attack without perforation or suppuration: of those who did not recover, eighty to ninety per cent. would have a circumscribed collection of pus, and could be relieved by a simple and comparatively safe surgical procedure; in the remainder the affection would be more serious, and a large percentage of them would perish. But to save these last, we were asked to operate in every case! Dr. Ferguson concluded that in all cases of appendicitis during the first attack the operation should not be undertaken unless suppuration or diffuse peritonitis demanded it; but in relapsing or recurring appendicitis, in which it was probable that permanent distortion of the appendix existed, we should operate.

Dr. F. H. Wiggin, of New York, thought that all cases of appendicitis should be considered as surgical after the diagnosis had once been clearly established At first, we should simply use enemata and apply cold locally, but if the symptoms were more severe after thirty-six hours the patients should be operated upon. If the pulse became more rapid, it indicated serious peritonitis and the need for operation. No case in the first attack should be subjected to operation unless there was evidence of pus. He thought the experience of good operators would justify the statement that the mortality should not exceed four per cent., unless the patients were already the victims of organic disease.

Dr. Charles Phelps, of New York, was of the opinion that the great majority were examples of simple catarrhal inflammations, and that many would recover under the use of the ice coil alone. So far as he had been able to follow the patients upon whom he had not operated, there had not been recurrence. In suppurative and gangrenous cases, of course immediate operation was demanded. Probably no operation was more often done unnecessarily than that for appendicitis, largely owing to the very general discussion of appendicitis in the lay as well as the medical press. A pulse of 120 should be looked upon as an indication of great danger. The operation should be done before this stage had been reached.

The Abuse of Medical Charity, a Critical Review of Recent Literature.—Dr. Frederick Holme Wiggin, of New York, read a paper with this title. He said that his object was not so much to present individual views as to cull from recent literature—both lay and medical—the opinions of many writers. He said that it was easy to demonstrate conclusively that, as at present administered, medical charity is demoralizing to both the recipients and the donor. Some idea of the alarming growth and extent of this evil might be gained from the carefully compiled report of Dr. Stephen Smith to the State board of charity. He showed that, during 1895, 897,971 persons applied for and received free medical treatment at 105 dispensaries in this city; that 1,418,847 free visits were made by these applicants to these dispensaries; and that 78,000 persons received free board, lodging, nursing, drugs, surgical dressings, and treatment — in other words, that more than forty-nine per cent. of all who live within our borders claimed in one year to be unable to care for themselves. This should be contrasted with another statement by Dr. Smith, to the effect that during the period from 1791, when the first dispensary had been established in New York, to about 1870, the applicants for charity bore a ratio to the total population of 1.5 per cent.

Dr. Wiggin then went on to quote from an editorial

in the New York *Herald*, to show that Greater New York spent fifty millions of dollars every year on charities, and that, according to a conservative estimate, fully fifty per cent. of the donors' money was diverted from the purpose for which it was intended and was practically filched from the poor, to whom it rightfully belonged. Again, according to one author, Dr. J. B. Huber, one might find in large numbers at dispensaries such people as actors, gamblers, bartenders, policemen, farmers, prosperous businessmen and those owning houses, lawyers, and perhaps even a stray railway president. According to another author, fully fifty per cent. of the applicants in the reception, room of a well-known institution, which he dubs "the Diamond Dispensary," were well dressed: ten per cent. were finely dressed; more than half of the men bore no evidence of poverty: and among the women there was an attractive display of fine millinery—yet all obtained the free treatment supposed to be given only to poor persons. A reporter on one of the daily papers, in describing what he saw at a well-known "clinic," stated that not more than one in fifty was at all shabbily dressed, a large majority were fairly well dressed, one-third of them were quite presentably dressed, and perhaps one-fifth were positively well dressed. The reader of the paper said that he knew of a man who paid an enormous rent in a fashionable apartment house near Central Park, and who spent many thousand dollars a year on living expenses, yet he went to what has been so aptly termed "the Diamond Dispensary," on the plea that his expenses were so heavy that he could not afford to pay a fee to a doctor. "Certainly," the author continues, these instances "show the spirit in which charity is asked for and accepted; it is largely a desire to save money, without apparently thinking that self-respect is lost in the effort or that a wrong is done to the really poor and to the physician, who is certainly as much entitled to his hire as are the clergymen or other members of the community, as he too has social obligations to fulfil." More than this, as Dr. Schweck had well said in the Philadelphia *Press:* "People of means who go to charity dispensaries and receive treatment free of charge, representing themselves to be too poor to pay for medical services, commit a criminal act, for they obtain what they are not entitled to and do it under false pretences."

Another and important aspect of this subject had been revealed in a communication from Dr. G. M. Roe, medical superintendent of the Boston City Hospital, to the Boston *Herald*. He says: "It is a generally accepted fact among people who have had large experience in doing charitable work that the first thing that a man or woman will accept as charity is medical attendance. They will accept free service from the doctor when you could not prevail upon them to accept rent or fuel or anything of the kind as a gift. The acceptance of gratuitous medical attendance is the first step toward pauperism. There is already a tendency toward what is generally known as 'nationalism'—a belief among the common people that the city and the State owe them a living, and that medical attendance, among other things, should be furnished them by common taxation, regardless of their financial standing as individuals." Again, as Dr. J. J. Stevenson had expressed it in the *Mail and Express:* "If recovery from disease be secured at the expense of self-denial, the memory of the cost will lead in ordinary cases to care that a recurrence of disease and attendant expenses may be prevented. But if the careless feel that treatment, medicine, and even diet can be had simply for the asking, there can be no reason for resisting the natural tendency to neglect the laws of health. . . . It is not surprising that the reckless poor see in such careless giving an acknowledgment of the unequal distribution of wealth, and believe that it is founded on injustice; nor is it strange that the anarchist's cry is not for opportunity to earn by labor, but for such distribution of wealth as may enable all to enjoy the luxury of idleness."

The following are the conclusions arrived at by Dr. Wiggin after a critical review of the subject: (1) That medical charity, as at present administered, is an unqualified evil and is seriously menacing our existing social conditions; (2) that the application for free treatment of those able to pay the physician a moderate fee for his services robs the really poor; (3) that all medical charitable institutions should be under the direction and control of State and local boards of charities, which should have the power to enforce their rules; (4) that all applicants for medical charity should be investigated by local charity boards, and the unworthy excluded; (5) that no medical charitable institution should be allowed to charge nominal sums for medicines or appliances; (6) that all physicians connected with charitable institutions should be paid for the service which they render; (7) that it should be made a misdemeanor, punishable by fine, for any person to receive free medical treatment by reason of false representations as to financial condition; and (8) that State or city aid should not be granted to private medical charities.

Dr. Wickes Washburn, of New York, opened the discussion. He referred to the investigations made, from January 1, 1897, to the present time, by the Charity Organization Society, of cases sent to it by several dispensaries and out-patient departments in this city. Out of a total of four hundred and forty-three cases investigated in this way, one hundred and eighty-nine, or a trifle over fifty-five per cent., were reported to be unable to pay a moderate fee. The decision as to the financial condition was based on the following data: (1) the total income of the family; (2) the number in the family; (3) the ages of the children—whether old enough to work or not; (4) who, if any, in the family were out of work, and how long; (5) if working, the wages paid; and (6) the general impressions of the visitor. After reviewing the work connected with the presentation of "the dispensary bill" to the legislature last winter, the speaker suggested that section six, empowering the State board of charities to enforce the regulations contained in the act and to punish those who wilfully violated its provisions, might be made less objectionable by requiring "the approval of the judge of the supreme court sitting in the county where such failure to comply with the rules had occurred."

John Harsen Rhoades, Esq., continued the discussion. He said that at the outset he felt compelled to criticise the medical profession sharply, but in a kindly spirit, for it was in large measure to blame for the existing abuse of medical charity. One cause was to be found in the great multiplication of hospitals and dispensaries—not always from the most worthy motives. This multiplication was too often brought about through the ambition of young medical men to attach themselves to those institutions or to found new ones, that they might gain not only experience, but reputation and a livelihood. Another cause of the present state of affairs was to be found in the natural repugnance of physicians and others to prying into the private affairs of those who may quite possibly be worthy objects of charity. Another reason was the secret willingness of many young practitioners to conceal the facts for purposes of private gain. Still another and a very important cause was to be found in the absence of a "clearing-bureau," where all cases and applications for charitable relief of all kinds, medical and otherwise, could be investigated for the benefit of all charitable institutions of all classes and sects. Without such a bureau the work must necessarily be dupli-

cated many times and at great expense and disadvantage. Each institution should share the expenses of the bureau in proportion to the number of patients recorded against each. If the law compelled each institution to send weekly lists of all applicants to such a central bureau, it was more than probable that the result would be the disclosure of an appalling amount of fraud and a reduction of fifty per cent. in the number of those applying for charity. He had long been an advocate of a paid staff at such institutions, provided that the physicians from a certain grade down were permitted to remain only a specified time. If the existing system of medical charity were allowed to continue, we would soon build up a nation of paupers.

Dr. J. E. Janvrin, of New York, dwelt upon the circumstances leading up to the presentation of the dispensary bill, particularly upon the interview which a committee of which he was a member had had with Governor Black. The executive had objected to the bill ostensibly on the ground that it gave too much power to one association—the State board of charities. Incidentally he had expressed the belief that any one who was wealthy had a perfect right to establish a medical or other charity, and educate young men, rich or poor, without any fees whatever, and if necessary even to assist them afterward in obtaining business. When asked if he would have approved of such a state of affairs when he was a young lawyer, he replied: "As a lawyer I should have objected to it." The speaker said that he had long felt that dispensaries and hospitals should be conducted more on business principles, and that the medical officers should be properly remunerated. He thought the proposed amendment of section six of the dispensary bill would, if enacted, give rise to many contentions and much annoyance.

Dr. F. D. Ferguson, of Troy, said he thought that from the lawyer's standpoint legal objections to the bill might arise, particularly in regard to those institutions that had been incorporated prior to the establishment of the State board of charities.

Dr. Leroy J. Brooks, of Chenango County, thought that an important factor in causing the enormous increase of applications for medical charity in the period since 1870 was the enormous increase in the number, clinical facilities, and influence of the medical schools. From information recently received from Albany, he had been led to believe that the medical schools were exerting a persistent though perhaps silent opposition to this dispensary bill.

Dr. Eden V. Delphy, of New York, suggested that a remedy might be found in an ethical restriction, making it contrary to the dignity of the profession for a member to act as a physician in a dispensary which permitted abuse of medical charity. The attitude of those managing the medical schools would suggest the necessity for some retaliatory measure on the part of the rank and file of the profession, such as avoiding these men in consultations.

Dr. Manley had no faith in legislation as a remedy for the abuse; the evil was not with the dispensary managers, but with the medical profession. More than this, he did not feel that its members could be depended on to enforce penalties against brethren in the profession who transgressed in these matters.

Dr. J. R. Macgregor, of New York, said that the question was one of fraud on the part of individuals of the community who imposed upon the profession. We must have the authority of law if we expected to do away with such imposition. He thought if the dispensary bill had been passed earlier in the last session of the legislature, it might have been passed even over the governor's veto. Probably the real reason the executive refused to affix his signature was the pressure brought to bear upon him by the medical colleges.

The Status of Medicine.—Dr. Nelson L. Worth, of Kings County, presented this paper. He said that if half the care were bestowed upon the passage of proper laws regulating marriage (and hence indirectly the procreation of the species) that was given by the ordinary farmer to stock raising, an enormous gain to the race would be easily apparent in the lifetime of a single individual. The reader of the paper then propounded the following suggestive questions: How much of the cause of disease did we yet know? Was it the germ or the toxin of the germ? Could the germ be destroyed without injury to the individual? Could we positively cure the disease by controlling the toxin? Was consumption curable now? Was it any more so than before the discovery of the bacillus of tuberculosis? Did as many subjects of phthisis get well now as before Koch's great discovery? Was not the practice of medicine in relation to phthisis more unsettled and ineffective now than before the discovery of the tubercle bacillus? Was not the neglect of hygienic and climatic and medicinal methods doing more harm than the direct germ treatment was doing good? In conclusion, he expressed the belief that the medicine and surgery of the closing years of this century were largely unstable and experimental.

The Growth of Commercialism in Medicine.—Dr. John Shrady, of New York, read a philosophical essay on this subject. He thought that the older practitioners saw more of gratitude and tender remembrances than those practising at the present time. He then gave a humorous description of the various subterfuges resorted to by the *fin-de-siècle* physician in order to secure for himself a proper amount of advertising without apparently committing any breach of the code of medical ethics.

The President's Address, "The Causes of the Decline in the Average Income of General Practitioners of Medicine."—Dr. Charles Phelps, of New York, presented his address, taking for his theme the above topic. He said that the earnest effort made before the last legislature to obtain relief from certain abuses of medical charity was proof of the general diminution in the incomes of physicians, particularly in this city. But this was only one cause; there were others, and it should be remembered that medical practice, like other things, was largely regulated by the well-known principle of supply and demand. It was also easily demonstrable that the amount of sickness in our community had notably diminished. This increased healthfulness, even the public was now willing to admit, was largely due to the advances made in the bacteriological and pathological laboratories, and to a better control over disease by the proper sanitary authorities. Thus, epidemic dysentery had become unknown here, and variola was practically unknown. The maintenance of a reasonable standard of purity for milk and proper supervision of plumbing had done much to diminish gastro-intestinal disorders. The effect of the improved cleanliness of the streets on the public health was, in his opinion, problematical. Among other causes mentioned were the general business depression, the want of a proper adjustment of the fees to the incomes of the patients, the business methods in vogue at the present time, the more complicated mechanism for the treatment of disease, and the increasing custom of sending patients to sanitaria and hospitals. The speaker concluded by expressing the belief that the remedy would not be found in legislation except by an inordinately rigid and distasteful surveillance, which would be unbecoming an honorable profession.

A Study of Alcohol, Tobacco, Tea, and Coffee as Causative Factors in the Production of Nervous Disorders.—Dr. Charles E. Lockwood, of New York, read this paper. He said that in the United

States in 1895, the total amount of distilled spirits consumed was 78,823,561 gallons; of wines, 19,644,000; of malt liquors, 143,232,106 gallons. Statistics were also quoted to show that the consumption of tea and coffee has decreased, while the use of malt liquors has greatly increased. In brief, it might be said that alcohol is a stimulant in moderate, and a narcotic in toxic doses: tobacco is a stimulant and sedative in moderation, but relaxing and paralzying in toxic doses; while coffee and tea are nervous stimulants in moderate doses, and depressing but not narcotic in toxic doses. Recent experiment seemed to prove that small quantities of alcohol do not interfere with gastric digestion, and at times even assist it. Wines retard pancreatic and salivary digestion, and malt liquors retard salivary digestion. Alcohol first attacks the cerebrum, then the cerebellum, cord, and automatic centres in the medulla, in the order named. Alcohol acts on the nerve cells directly as a functional poison, and hence the subsequent depression. According to Gowers, epilepsy is occasionally an effect of alcoholic excess. It has not yet been determined beyond dispute that amblyopia and optic-nerve atrophy may result from alcoholism. A very common result of alcoholism is peripheral neuritis. The effects of tobacco are largely influenced by the personal equation, and are often shown by various functional disorders. Coffee in excess produces insomnia, disorders of special sense, frequent irregular heart action, and muscular tremor. The effects of tea are those produced, in a general way, by overstimulation.

Resolution Concerning the Dispensary Abuse.—Dr. E. D. Ferguson offered the following resolution, which was unanimously adopted:

"*Resolved*, That this association is heartily in sympathy with the efforts being made to correct the hospital and dispensary abuses in the State, and that a committee of five be appointed by the president to represent the association in efforts to be made to correct the said abuses."

Second Day—Wednesday, October 13th.

Stricture of the Rectum.—Dr. W. S. McLaren, of Litchfield, Conn., read this paper. He said that it had been customary to divide rectal strictures into two large classes, viz.: (1) congenital, (2) acquired. We did not see congenital strictures, although in rare instances one observed imperfect development of the anus, but not a true stricture. A stricture in its very nature was acquired. The author divided rectal strictures into malignant and non-malignant strictures. The former were subdivided into (1) traumatic, (2) dysenteric, (3) tuberculous, (4) simple ulcerative, and (5) venereal. Under the head of the causes of traumatic stricture were to be mentioned kicks and blows, operative procedures, and the use of irritating fluids. It must be extremely rarely, if at all, that stricture of the rectum was caused by kicks or blows. In the many cases of dysentery occurring in the army during the late war, not one had a stricture of the rectum; dysentery usually affects the upper part of the bowel. Simple ulceration, if extensive enough to involve the deep layers of the rectum, might cause stricture. Superficial ulcerations were frequently observed to heal without causing any contraction whatever. The venereal division naturally included the great majority of rectal strictures.

Symptomatology: The chief if not the only symptom was obstruction. The "ribbon stool" could not be looked upon as of the slightest diagnostic value, for although commonly found in connection with rectal stricture, it was also an accompaniment of other conditions. One could hardly lay too much stress on the importance of making a digital examination in suspected cases, for the records showed all too frequently that physicians were prone to neglect this very necessary preliminary step to intelligent treatment. In some cases it would be noted that the patient would have a free evacuation at first: then there would be an interval of a few minutes, and another stool. This might be again repeated after another short interval.

Treatment: Bougies should be chosen which easily pass the stricture, and these should be introduced daily and allowed to remain for ten or fifteen minutes. The bowel should be unloaded by mild laxatives and enemata. In performing the radical cure the stricture should be divulsed and a gauze plug inserted in the centre. This prevented hemorrhage and secured good drainage.

Dr. E. D. Ferguson said that the successful treatment of these difficult cases depended very largely upon the thoroughness with which the mucous and muscular coats and the connective tissue around the gut itself were divided. Unless the incision was carried down to normal connective tissue, the cure would not be permanent. The treatment by bougies might possibly effect an occasional cure, but the treatment was protracted and was not entirely devoid of danger.

Pyothorax in Children.—Dr. Douglas Ayres, of Montgomery County, read a paper with this title. He said that statistics showed that pyothorax occurred most frequently during the first five or six years of life, and that the tendency to it diminished rapidly with advancing age. According to a conservative estimate, one-third of all the cases of effusion into the pleural cavity in young children were purulent in character. Among the diseases predisposing to this condition were pneumonia, scarlatina, acute desquamative nephritis, tuberculosis, diphtheria, and whooping-cough. General effusion was the rule, and cystic effusion the exception in infants in whom there was no previous inflammatory action. The speaker directed attention to the very great importance of making frequent and thorough examinations of the chest in children suffering from acute diseases. This was more necessary in infancy than at any other period of life. Owing to the yielding nature of the chest walls in young children, the examiner might often detect fluctuation. The constitutional symptoms varied so greatly in children as to make it unsafe to place much reliance upon them. If fluid were found and it had accumulated very rapidly, especially if there were at the same time an elevation of temperature, it was probable that the fluid was purulent. The degree of temperature, however, was not a sure indication of the character of the effusion. The point could be easily and definitely determined by the use of the aspirating needle. It should be borne in mind that children did not bear delay in operating as well as adults; hence the need in these cases for an early evacuation of the fluid. While statistics seemed to prove that early and repeated aspiration effected many cures, his own experience had been that even after such treatment it had been usually necessary ultimately to make a free incision into the chest. Late operating was more difficult and dangerous, and the chance of effecting a complete and permanent cure was not so good. The incision was preferably made in the sixth intercostal space, under antiseptic precautions. A large single tube would answer in infants under three years of age, but for older children a double tube was better. The tube should be carefully secured by a shield and safety pins. If the pus was not offensive and the temperature not high, irrigation was not indicated and might prove harmful. If the pus was offensive or there were present clots of considerable size, irrigation with boric acid or Labarraque's solution should be employed. This irrigation should be repeated daily

as long as fetor continued or until the discharge became serous.

The author's conclusions were as follows: (1) The time for operation is when the symptoms, verified by exploratory puncture, reveal the presence of pus; (2) the operation of incision and drainage is followed by the best results and early and perfect recovery; (3) aspiration does not remove the pus fully, the treatment is necessarily slow, and it is likely to prove a source of inflammation, necessitating the secondary operation by incision; and (4) incision is followed by a large percentage of recoveries, the drainage is rapid, and leaves no nucleus for future trouble.

Dr. Ferguson said that it had seemed to him that the key to the frequency of empyema in early childhood was to be found in the susceptibility of that period of life to broncho-pneumonitis. We had only to conceive of the involvement of a lobule near the surface of the lung to understand how the inflammatory process might extend to the surface, how the pleural surface might be altered mechanically, and how, as a result, the germs might readily find their way into the pleural cavity.

Report of Some Unusual Cases of Appendicitis.—Dr. Joseph D. Bryant, of New York, read this paper. The first cases cited were examples of a class of chronic appendicitis characterized by an abundant fibrinous exudation. His conclusions regarding this series were: (1) That enormous deposits of lymph may be the only product of disease; (2) though even repeated attacks occur, suppuration is not a common sequel; (3) free incision of the mass and gauze packing were followed by rapid absorption and ultimate cure; (4) suppuration may occur—hence the apendix should be removed; (5) fibrous induration due to chronic appendicitis may be mistaken for sarcoma of the cæcum; and (6) the influence of malaria may stimulate this manifestation of chronic appendicitis. Several miscellaneous cases were then reported. In one, notwithstanding the assertion of the patient that his appendix had already been removed by operation, Dr. Bryant was able to find and remove a complete vermiform appendix, three inches in length. In another case there was an unusually long appendix, extending upward along the outer aspect of the ascending colon; and the unusual extent of the gangrene at the time of the operation showed conclusively that the gangrenous process had existed at the time that he had first seen the case—in other words, when the symptoms and signs had been so mild as to make the surgeon feel justified in postponing operative interference. Another case was cited in illustration of the fact that there might be an early and excessive febrile reaction, without a proportionately severe lesion.

Absence of the Vermiform Appendix.—The last case was that of a young, nervous, and robust woman, who experienced pain on deep pressure over the appendix, but operation was declined. The following year a return of the symptoms made the patient consent to operation. There were at this time a well-marked point of tenderness and a small tumor, revealed by deep pressure. At the operation the most careful scrutiny failed to disclose the least inflammation or the presence of an appendix. According to one observer the appendix was absent only once in two hundred cases. A small tumor was found on the posterior wall of the cæcum, at the usual location of the appendix.

The Surgery of Tuberculosis of the Peritoneum.—Dr. Parkes Weber, of New York, presented a communication on this subject. He said that in a large proportion of cases of tuberculous peritonitis a simple laparotomy would effect a permanent cure. This phenomenon was without an analogue in surgery. The following theories had been advanced to explain it: (1) That it was due to the chemical disinfectants used; (2) that it was to be attributed to drainage; (3) that it was due to the exposure of the abdominal cavity to light and air; (4) that it depended upon the removal of the ascitic fluid; (5) that it resulted from the accidental introduction of bacteria and the production of a toxalbumin which was fatal to the tubercle bacillus; (6) that the operation and attendant handling of the peritoneum constituted a traumatism, and resulted in a fibrinous peritonitis and encapsulation of the bacillus; (7) that the cure was due to the advent of leucocytes and the resulting phagocytic action; and (8) that the mere opening of the abdominal cavity brought about a physiological change in the peritoneum, and consequently rendered the peritoneum an unsuitable soil for the growth of the tubercle bacilli. In a long series of cases in which antiseptics were employed, the percentage of recoveries was slightly higher than in those cases in which no such agents had been used. Again, the patients recovered better without drainage than with it. The last of the theories mentioned was perhaps the most plausible, but even this was but little better than begging the question. Dr. Syms said that in 1890 he had presented a paper in which he expressed the following views, and these he still held: (1) That the danger of the operation was very slight—the mortality being about three per cent.; (2) that sepsis was not so likely to occur in these cases, owing to the pathological changes in the peritoneum; (3) that tuberculous infection of the wound did not occur; (4) that disinfectants were useless and drainage should not be used; (5) that in successful cases the operation did no harm; (6) that established but not advanced pulmonary tuberculosis was an indication for and not against this operation, for it enabled the patient better to withstand the phthisis; and (7) that laparotomy was the proper treatment for these cases. From a pathological standpoint there were three varieties of peritoneal tuberculosis, viz.: (1) the ascitic, (2) the fibrino-plastic, and (3) the caseous or suppurative form. As a matter of fact these represented stages rather than varieties of the disease, and they were frequently associated in the same case. Clinically there were two varieties, viz., those with and those without ascites. The incision should be large enough to allow satisfactory exploration of the abdominal cavity. The ascitic fluid should be evacuated. If there were much granulation tissue with adhesions, the latter should be separated, if this could be done by gentle manipulation. He advised against irrigation or attempted medication of the abdominal cavity. Drainage delayed healing, and this was serious in such cases. Of course, careful attention should be given to the general condition of the patient. Statistics seemed to show that at present the mortality was a little over two per cent., that marked improvement was noted in about eighty per cent., and that permanent cure was effected in about thirty per cent. of all cases operated upon.

Dr. Swan, of Saratoga, said that while at the Johns Hopkins Hospital he had seen about ten cases of tuberculous peritonitis in Dr. Osler's wards, and their course had seemed to confirm the claim made by Dr. Osler that a large number of these cases would go on to recovery without operation: he had also seen in the same hospital twelve cases operated upon by Dr. Howard Kelly, by simple laparotomy and closure of the abdomen without drainage. These patients were all improved before leaving the hospital, but Dr. Kelly claimed that only about fifty per cent. of the patients were "cured"—*i.e.*, remained free from all relapse for a period of five or six years. The speaker then reported a case of tuberculosis confined to the pelvic peritoneum—a very rare condition. At the time of operation several loops of intestine were found

to be adherent by "cystic" peritonitis, and three of these loops were studded with miliary tubercles. The woman promptly recovered from this operation, and he had then opened the main cyst through the vagina, and evacuated about one quart of caseous material.

Dr. H. D. Didama, of Syracuse, asked if Dr. Syms would advise laparotomy in a case in which the diagnosis of tuberculous peritonitis was reasonably clear, even if there was no fluid to be drawn off.

Dr. Syms replied in the affirmative.

Dr. Ely Van de Warker, of Syracuse, said that he believed he had had the honor of introducing this subject into English literature, in a paper read before the American Medical Association in 1883, on "The Cure of Tuberculosis of the Peritoneum by Laparotomy." These cases, he said, bore drainage very badly. Occasionally, when there was pus accumulations beneath the pelvic fascia, drainage through the vaginal roof would be required. The good results from the surgical treatment of tuberculosis of the peritoneum he believed were largely attributable to the free flushing of the cavity.

Dr. Syms closed the discussion. He said that in using the word "cure" in connection with these cases he had adopted Koenig's standard, viz.: that cases going for two years after the operation without a relapse might fairly be looked upon as "cures." According to this criterion, Koenig's cases showed about twenty-four per cent. of cures. In the successful cases the improvement was so rapid and so remarkable that it could not reasonably be explained, as some would have us believe, on the theory of coincidence. In estimating the curability of tuberculosis of the peritoneum without operation, one should give due weight to the fact that in a very large majority of cases it was an utter impossibility to make a positive diagnosis without opening the abdomen.

Tetanus.—Dr. Frederic S. Dennis, of New York, presented a paper on this subject, in which he dwelt particularly on the treatment of tetanus by the antitoxin. He said that it had been proved beyond doubt that tetanus is an infectious disease, caused by the presence of a germ that had been discovered by Nicolaier in 1884. A case had been reported in which this bacillus had gained entrance without an abrasion of any kind. Such an origin might be possible, but certainly the usual mode of entrance was through an abrasion or trifling wound of the skin. The spores of the tetanus bacillus resist death for a long time; they have after eleven years been found alive on a piece of wood taken from the body of a boy who died of tetanus. The toxin of tetanus could be obtained in much the same manner as that of diphtheria. There was, however, an important clinical difference, since the toxin of tetanus was capable of producing all the phenomena of the disease without the pathogenic presence of the tetanus bacilli. The toxin of tetanus is a most virulent poison; it had been estimated that one-three-hundredth grain would kill a human being. It produced its lethal effect very rapidly. The fact that the lesions were located in the nervous system explained the good effects that had been obtained from the administration of chloral and similar drugs. In discussing the treatment, a sharp distinction must be made between acute and chronic tetanus. A study of the effects of the antitoxin enabled him to fix upon the fourteenth day as a point of differentiation between the two varieties of the disease. As a result of his thorough, exhaustive, and scientific study of the subject he felt impelled to state that the facts did not at present warrant the conclusion that in the tetanus antitoxin a remedy existed which would invariably cure tetanus, yet they did show that it was a remedy of the greatest value, particularly in connection with immunization and prevention. The antitoxin of tetanus was obtained from the serum of horses that had been immunized against tetanus by hypodermatic injections of the toxins of the bacillus of tetanus. No animal had ever died from tetanus which had been rendered immune by the tetanus antitoxin before inoculation with the disease. According to Welch, the results were better in proportion to the length of the inoculation period, and that this remedy was of little or no value if this period was less than ten days, or if convulsions had already set in. The prophylactic treatment of tetanus was limited to those cases in which the wound had been inflicted in such a manner as to allow garden earth, or the plaster from walls, or a rusty nail to come in contact with it.

As regards other methods of treatment, statistics proved that chloroform was a very valuable adjuvant, having reduced the death rate ten per cent. in one series of cases. Chloral, given in doses of one hundred to two hundred grains daily, was also very useful, having decreased the mortality six per cent. Indeed, it was because of the evident value of these agents in tetanus that it had been so difficult to judge of the part played by the tetanus antitoxin in those reported cases in which both had been used.

Regarding the prognosis, the speaker said that the mortality was eight times greater in chronic tetanus in those over twenty-five years of age than in those younger than this. The period of incubation was also an important element in the prognosis. He had collected twenty-four cases of tetanus, in twelve of which the duration of the period of incubation was above fourteen days, and in twelve below fourteen days. In the former series there were two deaths, or a mortality of sixteen per cent.; in the latter, there were eleven deaths, or a mortality of ninety-one per cent. Experience had shown that large doses of antitoxin (twenty cubic centimetres or more, three times a day for adults) were necessary, and also that it must be continued for some time. Success was greatly enhanced by proper treatment of the wound. Carbolic acid and bichloride had little influence on the spores unless a little hydrochloric acid was added. A half-per-cent. solution of iodine trichloride was especially potent. As the toxins of tetanus were eliminated chiefly by the kidneys, free diuresis should be established.

In conclusion, Dr. Dennis said that he thought it had been fairly well demonstrated that the mortality in cases of tetanus, treated without the antitoxin, was sixty per cent., as against a death rate of thirty per cent. under the antitoxin treatment.

Dr. B. Cohen, of Buffalo, described the difficulties encountered with the older methods of treatment, and expressed the hope that the serum would soon be accessible to all practitioners.

Dr. Hanan, of Rensselaer County, asked if this antitoxin proved efficacious in tetanus of the newborn.

Dr. Ferguson called attention to the fact that in certain regions the tetanus bacillus was known to be generated more freely in connection with the soil than in others. The prevalence of trismus nascentium in the West Indies was explained by the uncleanly habits of the negro midwives, and the fact that they were brought a good deal in contact with the soil. Where special precautions were taken to avoid infection of the umbilical cord, the number of cases of tetanus had been lessened.

Dr. Dennis, in closing, said that within a few days five cases had been reported in which the antitoxin in small doses had been used in trismus nascentium, with complete success in all of the cases.

Salol and Starch, two parts of the former to one of the latter, are found to be an efficient dressing in specific ulcers.—Schwimmer.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, October 7, 1897.

EDWARD G. JANEWAY, M.D., PRESIDENT.

Treatment of Puerperal Septic Diseases.—This was the general topic selected for the discussion, which was under the charge of the section on obstetrics and gynæcology.

Medical Treatment; Prophylaxis.—DR. CHARLES JEWETT, of Brooklyn, discussed the medical treatment. He said that for the occurrence of sepsis in childbirth the attending physician must usually hold himself to blame; puerperal sepsis was a preventable disease. Immunity depended chiefly upon the cleanly conduct of the lying-in, but prophylaxis must begin many weeks before labor. Debility, anæmia, syphilis, rheumatism, paludal poisoning, and toxæmias of various forms were all predisposing causes. Retained excrementitious products constituted a very important predisposing factor; hence particular attention should be given to the condition of the kidneys. The origin of puerperal fever was to be found sometimes in the condition of the vagina. The presence of leucorrhœal discharges which were fetid, or which excoriated the skin, should not be overlooked if proper attention were given to recording the history, even without making a direct examination. The streptococcus was frequently associated with gonorrhœal infection. The presence of a pathological secretion called for douching with 1 to 5,000 bichloride solution, followed by a washing out with plain water. Dusting the vaginal surface every two or three days with the subnitrate of bismuth was sometimes beneficial. In the presence of active gonorrhœa, the usual specific treatment for this disease should be carried out. Obstetricians of special training had practically no death rate in private practice, and in time the wealthy lying-in woman might pass through her confinement as safely as her pauper sister in a lying-in institution. Vaginal douching during and after labor in conditions of health was not only unnecessary but injurious. At no time was the liability to infection greater than in the first few hours after the expulsion of the child, for the tissues were in a condition favorable to such a process, and the vitality of the patient was at a low ebb. Manipulations in the passages were especially dangerous at the close of labor, and hence the introduction of the hand into the uterus after labor should not be undertaken lightly.

Curative Local Treatment.—A pelvic exploration should be made as soon as there was reason to suspect infection. This should include a speculum examination of the vagina. Septic vaginal wounds should be cleansed once or twice daily, and touched with carbolic acid or chloride-of-zinc solution. A strip of iodoform gauze should then be left in the vagina to keep the walls apart. Vaginal douching was useful in the presence of foul discharges. An antiseptic was more efficacious than a plain injection, and to a mild, non-toxic antiseptic there could be no objection. Such an agent was to be found in peroxide of hydrogen, or a one-to-ten Labarraque's solution. Douches should be given only by the physician, and with the greatest care. No active interference within the uterus should be undertaken until the physician was assured that it was involved in the septic process. A gaping cervix and a foul discharge were presumptive evidence of such a condition.

Curettage.—To the trained hand the dull curette was almost as satisfactory as the finger for examination of the interior of the uterus, and was decidedly safer, and with it small shreds of secundines could be removed without injury to the endometrium. A few drops of the lochia might also be obtained for bacteriological examination. If the membranes were retained, curetting should be done at once. It had been objected that a sharp curette laid open sinuses and dislodged thrombi, but as the same result followed the use of the dull curette, and the latter was not so efficient an instrument, the writer preferred the sharp instrument. The uterus should next be washed out with a proper antiseptic. The empirical and routine use of the curette had done harm. The extension of the infection to the parametrium did not, in his opinion, preclude the use of the curette—it rather emphasized the need for its immediate employment. The endometrium might be painted with the tincture of iodine, or with a fifty-per-cent. carbolic-acid solution, the uterus having first been washed out with salt solution. Finally, a loose packing of iodoform gauze should be left in the cavity. He suspected that the chief benefit from the iodoform gauze was due to the iodoform, and not to the gauze, and acting upon this idea he had repeatedly used with satisfaction iodoform pencils instead of the gauze. Intra-uterine irrigation was chiefly of value to wash away dead animal matter lying free in the uterine cavity, and as its action was chiefly mechanical many obstetricians preferred sterilized water to active antiseptic solutions. Tarnier advised iodine water. Frequent douching was decidedly injurious.

Systemic Treatment.—The speaker said that general measures were indicated to combat the constitutional effects of the poison as well as to control the local process. Alcoholic stimulants, tonics, eliminants, and proper alimentation must be our main reliance. Alcohol should be given to the point of intoxication, the maximum daily dose being a quart of brandy or its equivalent. Frequently, however, this dosage must be reduced, owing to the intolerance of the stomach. Strychnine and quinine were useful as tonics, especially the former, given in doses of one-thirtieth of a grain, three or six times a day. Quinine was of value in doses of three or four grains every six or eight hours; in larger doses it was injurious by hindering oxidation. The diet should consist only of liquid food, given at short intervals. All measures tending to promote elimination should be employed. To this end it was important that the patient should be made to drink large quantities of pure water, or of alkaline waters. The judicious employment of saline purgatives also had a rational therapeutic basis as eliminants. To limit the diffusion of the poison from the primary focus, it had been suggested by some to use ergot. As the coal-tar products were not only cardiac depressants but hindered elimination, they should be very sparingly used; on the other hand, cold bathing increased oxidation and favored elimination.

Serum Treatment Unsatisfactory.—The statistics of the serum treatment of puerperal sepsis were thus far unsatisfactory. His own experience had been limited to six cases; in only one was any improvement noted, and this was temporary, and possibly not due to the serum. In but few instances had injurious effects been observed, but there was still some reason for believing that this treatment was not entirely free from danger. The dose varied from ten to one hundred and twenty cubic centimetres daily, the serum being injected subcutaneously under aseptic precautions. Certain inoculation experiments would seem to show that the serum had no protective power whatever, and hence it was not probable that it possessed any curative power. Nuclein had been recently employed in puerperal sepsis, and some observers had expressed the opinion that it was better than the antistreptococcus serum. He had personally used it in only three cases, and no definite results had been obtained in

these. He used doses of thirty minims, given subcutaneously at intervals of four hours.

The Surgical Treatment.—Dr. Egbert H. Grandin discussed this phase of the subject. He said that the general adoption of the view that puerperal infection was simply wound infection had greatly simplified the study of the subject, and had led to the adoption of well-known general surgical principles for treatment. To-day it was believed that puerperal infection was dependent either upon toxins or a pathogenic infection. When the condition was due to non-pathogenic germs, it was called "sapræmia;" when due to pathogenic microbes, "septicæmia." In the former the elements of putrefaction tended to remain localized at the site of their origin, and for this reason sapræmia, treated early and properly, could usually be controlled. Septicæmia, on the other hand, depended upon the rapid multiplication of pathogenic germs, so that the surgeon must deal not only with local but with systemic infection. A sapræmia by improper or delayed local treatment might pass into puerperal septicæmia.

Indications for Curettage.—The commonest form was sapræmia, and the surgical measure in vogue for its control was curettage. He was satisfied that this procedure was resorted to unneccessarily, and often to the detriment of the patient. He had himself been a culprit in this matter, and so could speak with the positiveness born of personal experience. In sapræmic endometritis the curette was a valuable instrument, but in the case of endometritis due to the presence of pathogenic microbes resort to the curette caused a dissemination of these microbes throughout the body. The careful researches of German investigators showed that underlying the putrescent mass in the uterus was a granulation bed of leucocytes, which opposed a barrier to the microbes endeavoring to gain entrance to the system. If this barrier were broken down by the curette, the local infection would be made a general one. The object of treatment of puerperal septic conditions should be to favor local conditions, and when operation was demanded it should be done before the occurrence of systemic infection. There were two varieties of puerperal endometritis—the putrid and the septic. In the former, a granulation barrier formed; in the latter, if the barrier were present at all, it was extremely thin. Putrid endometritis at the present time usually became septic only when there was some fault in the technique at the time of delivery or during the puerperium. It was, therefore, possible in the majority of cases to differentiate the form of endometritis present. This differentiation was accomplished by exploring the uterine cavity with the fingers, under an anæsthetic, prior to a resort to the curette. If secundines or débris were found to be retained, the curette should be used; if these were not found, then the curette was contraindicated. The curette should remove only the putrid mass, and the instrument should work down only to the granulation layer. The uterine cavity was next to be irrigated freely, and filled with sterile gauze, not with the idea of drainage but rather with the object of keeping the cavity open for further inspection or treatment, should this be required. He favored the removal of the gauze in most cases after thirty-six hours.

Iodoform Gauze Packing Dangerous and Misleading.—Dr. Grandin rejected iodoform gauze for the reason that not infrequently it caused iodoform toxæmia, which aggravated the symptoms already present, and often misled the physician into believing that the disease was passing into the graver or septic form. In the septic variety of endometritis the examination of the interior of the uterus under anæsthesia and perfect asepsis would not reveal retained membranes. As a rule, in the septic form the less the physician resorted to active measures the better; his aim should be to kill the germs, if possible, while active only in the uterus. He preferred to give one intra-uterine irrigation, and then pack with gauze wetted with absolute alcohol. The surgical treatment applicable after the uterus, tubes, ovaries, and peritoneum had become involved, consisted in their removal. The technique of the operation was the same in diseases of the appendages when the seat of puerperal sepsis as when this factor did not appear. There was, however, a vast difference in the symptomatology and prognosis following the operation. This difference might be best described as due to a "puerperal" influence. When there were local peritonitis, salpingitis, etc., and the symptomatology became more grave, it was probable that the plastic peritonitis or cellulitis was becoming purulent, and if expectant treatment were continued general infection might ensue, or the process might extend and end fatally in a general septic peritonitis. The patient should be anæsthetized, the location of the purulent foci determined, and then these should be evacuated and drained. In reality, this suppurative process at the beginning was extraperitoneal. When local peritonitis was associated with, or merged into a metritis, early recognition and very radical surgery were necessary to save life. The speaker said that although he had read many reports of apparently desperate cases that had terminated in recovery under treatment by hysterectomy, he had never been convinced of the wisdom of this method. The difficulty in deciding was owing to the fact that the clinical picture which would seem to demand hysterectomy had over and over again proved fallacious. For this reason he favored the surgical treatment of each complicating factor as it arose, in the hope that the patient could be tided over the acute stage, and the case would progress to a symptomatic cure, or that conclusive evidence of the necessity for hysterectomy would be forthcoming.

General Septic Puerperal Peritonitis.—General septic peritonitis, he said, might well be termed the *bête noir* of the surgeon, and particularly when it complicated the puerperal state. He did not believe that a well-authenticated instance of the successful use of the streptococcus serum in general septic puerperal peritonitis had been reported. As a rule, general septic peritonitis was consecutive to puerperal metritis, or a perforation of septic pus into the cavity. In these cases systemic infection was very rapid, and the best that surgery could offer was multiple incision, free irrigation, and, if found effective, the removal of the uterus, tubes, and ovaries. The exudative or plastic type of peritonitis was more frequently met with at the present time, and this was the variety of peritonitis which formerly was successfully treated with enormous doses of opium—that drug which to-day had an important place in the treatment of the same condition. When the exudative type went on to the formation of pockets of pus, the best the surgeon could do was to open them and drain, remembering that whenever possible he should drain in nature's way—*i.e.*, downward.

Serum Treatment Inefficient and Not without Danger.—Dr. C. P. Noble, of Philadelphia, opened the general discussion. He said that the serum treatment of puerperal sepsis had not been very satisfactory in Philadelphia. In that city an evening had been devoted to a consideration of the subject, and twelve cases had been reported. Of the twelve patients, six recovered. It was believed that in six the treatment did no good, that in two it was distinctly harmful, and that in four it proved useful. Inquiry seemed to show that since that time like results had been obtained. Undoubtedly the very high mortality in these cases was to be explained by the fact that the serum treatment had been used in exceptionally severe cases.

Personally he would not feel inclined to use this treatment unless the bacteriological examination showed distinctly that the sepsis was due to the presence of streptococci; under other circumstances such treatment seemed to him irrational.

Vaginal Lesions a Common Source of Infection.—He agreed most heartily with Dr. Grandin regarding the great importance of making an accurate differential diagnosis at the outset. He would not only make the examination under an anæsthetic, but he would look very carefully into the condition of the vagina as well as the uterus. It was not at all uncommon for the infection to be due to lesions in the vagina, and under such circumstances if the vaginal lesions were touched with pure carbolic acid it was improbable that the septic process would extend. In cases seen at a later stage, this examination and treatment might be of service as a means of differentiation.

A Plea for Conservative Surgery.—His experience had been that in puerperal infection the patient was much more likely to recover with intact pelvic organs than when the infection was non-puerperal. For this reason we should be slow to do radical operations in puerperal cases. He had had a number of cases in which there had been extensive pelvic exudates, and yet by ordinary surgical measures recovery had been effected, and the woman had subsequently become pregnant. He cited one case in which there had been very extensive agglutination of the tissues, and yet some time afterward, having occasion to operate for a hernia, he had had an opportunity of inspecting the abdomen and pelvis. He had been greatly surprised at that time to note that only one small pelvic adhesion remained. The speaker advocated drainage operations in puerperal cases, resorting if need be subsequently to a more radical procedure, such as the removal of a tube. If the radical operation were done in the first instance, the surgeon would often feel called upon to remove organs which later on, owing to changed conditions, he would not feel justified in extirpating. Regarding irrigations, he said that if they did not limit and control the puerperal sepsis in one or two days, they should not be persisted in for a longer time. His experience with intravenous injections of salt solution had been particularly favorable.

Good Results from the Serum.—Dr. Paul F. Mundé said that he had been exceedingly gratified at the conservative position taken by the readers of the papers regarding surgical measures. His practice had been to trust largely to stimulants and good feeding to bring about the recovery of cases of puerperal septicæmia in which no retained septic matter was found in the vagina or uterus. He had had two very successful cases in which the streptococcic serum had been used, yet he would not say that the patients had recovered because of the use of the serum. In such a desperate condition one would clutch at almost anything, and for the present at least he would be willing to employ it. The speaker said that in 1883 he had read a paper on the use of antipyrin in puerperal septicæmia. At that time it had seemed to be the one useful agent, as it effectively reduced the temperature and to this extent prevented exhaustion. Phenactin had taken its place in his practice, but it was a very poor substitute.

Use of the Curette.—He had changed his views regarding curettage. When there was no septic product to be removed from the uterus, and there was simply a septic endometritis, no matter how thick the mucous membrane might be, the curette should not be used, for under these circumstances it would serve only to promote general septic infection. The treatment of the results of puerperal septicæmia should be carried out on the old surgical principle of evacuating pus wherever found. By the time the uterus had become so infected as to make it seem necessary to extirpate it, he was of the opinion that no known measure—hysterectomy or any other—would save that patient's life. When there was a purulent peritonitis, whether puerperal or not, he believed the abdomen should be opened freely, and, if necessary, drainage established from below. The results were not good, but occasionally a patient recovered under such treatment; whereas without such surgical interference all the patients died.

Dr. Henry C. Coe recalled one case in which he had curetted a sloughing uterus, and within two hours the patient had died of pulmonary embolism. He was in accord with the view held by the late Dr. Lusk, that we should not curette or stir up a sloughing uterus. It was not possible, he thought, to make the differential diagnosis in these cases of puerperal sepsis without giving an anæsthetic and examining the interior of the uterus very carefully with the finger or curette; even then it was difficult.

Anteflexion a Common Cause of Imperfect Drainage.—He believed that imperfect drainage of the uterus, due to anteflexion, was a more common cause of puerperal sepsis than was generally conceded. He was inclined to favor in these cases the use of irrigations with peroxide of hydrogen, as he had never seen any harm from its use and had observed a great deal of good from it.

Oxygen and Saline Injections Useful.—He had found the intravenous use of saline solution beneficial in some desperate cases of puerperal sepsis. In some cases he had used oxygen inhalations for weeks at a time, and with exceedingly gratifying results. So far as he had tried Dr. Ill's method of packing the uterus with gauze and keeping it moist for several days with forty-per-cent. alcohol, he had been favorably impressed with it. He had been looking for a suitable case for hysterectomy, but so far had not met with one in which this procedure seemed to him justifiable. The operation for general septic peritonitis was an almost hopeless one.

Dr. C. A. Von Ramdohr said that his views, based on personal experience, could be briefly summarized as follows: (1) Never use bichloride, for it had been proved again and again that under certain circumstances, when used in the genital puerperal canal, even in dilute solution (1 to 5,000 or 10,000), it would give rise to nephritis. (2) Wherever there was a sapræmia, as indicated by fever, foul lochia, open os, the presence of retained membranes, etc., remove the cause and give one thorough intra-uterine douche. Gauze drainage was optional. (3) Whenever there was a pus collection, it should be treated like any other abscess. (4) If extensive peri-uterine abscesses were present and the uterus proved an obstacle to drainage, this organ should be removed, because it would eventually prove a nidus for disease, and the organ would never again be able to fulfil its special mission. (5) Whenever there was septicæmia present, indicated only by the temperature and pulse, and without local signs or symptoms, we should combat the multiplication of the cocci, the high temperature, and the resulting heart weakness. For this purpose, alcohol in large doses and hydrotherapeutics seemed to have given the best results. (6) The use of the coal-tar products as antipyretics constituted a step backward. (7) Local treatment, when systemic infection had taken place, was worse than useless.

Puerperal Sepsis Successfully Controlled by Hysterectomy.—Dr. H. N. Vineberg referred to a recent case of puerperal sepsis in which he had operated. The patient, Mrs. F——, eighteen years of age, was delivered of her first child on May 31st. Her physician had informed him that the labor had been easy and normal, and that the placenta had come away entire. A chill and fever occurred on the sixth day.

and when first seen by him, two days later, the temperature was 103° F., the pulse was 120, soft and compressible, and she was slightly delirious. Examination showed the perineum intact, the labia majora quite œdematous, no vaginal discharge or fetor, the cervix but slightly lacerated, and the canal well closed. The uterus was large and not specially sensitive to pressure, and the adnexa were free from exudate. A diagnosis of septic endometritis was made, and curettage and repeated irrigations were advised. With a sharp curette he had removed considerable grayish-white tissue, and had then irrigated the uterus with bichloride, 1 to 3,000, followed by salt water. Three days later, June 11th, he was again sent for, and learned that owing to the miserable surroundings of the patient his directions had not been carried out. There had been only temporary improvement after the curettage. Her condition at this time was very bad, and she was removed to St. Mark's Hospital in the evening. She was given an intra-uterine douche, but nothing came away. By the evening of June 12th her condition had become so bad that he had performed total abdominal hysterectomy. The broad ligaments were quite œdematous, but the adnexa were apparently normal. At the close of the operation her pulse was fully as good as it had been at the beginning. For the next three or four days the temperature continued to be high, owing to the suppuration in the portions of the broad ligament remaining behind. Drainage was then established through the vagina. The patient eventually made a good recovery. On opening the uterus after its removal, a large portion of retained placenta was found, which had become organized. It filled the left horn and occupied most of the anterior wall of the uterus. It was particularly fetid, and although the uterus had been irrigated a short time before the interior was covered with mucus. He was inclined to think that if the cervical canal had been dilated and the uterus subjected to constant irrigation, the patient might have recovered without such a radical operation.

Use of Ergot an Important Safeguard.—Dr. Robert A. Murray said he thought septic cases were often met with because the old rule about the use of ergot had been neglected. In a very large outdoor obstetric experience, at one time amid the most miserable surroundings, he had not had a single septic case, and he attributed this to the use of carbolic acid and glycerin as the lubricant for the examining finger, and to the administration of ergot to insure good uterine contraction after delivery. This prevented the formation and retention of blood clots in the uterus. If there were the slightest rise of temperature, the interior of the uterus should be systematically and minutely explored with the finger. If on the withdrawal of the finger the physician perceived a foul odor, he should take this as an indication that the uterus demanded local treatment. The best local treatment in his opinion was by the curette, followed by a swabbing out with tincture of iodine, alcohol, or carbolic acid. He knew of no drug so efficacious in the control of the fever as veratrum viride, given in small doses at short intervals until the pulse became slow. If it proved too depressing, alcohol would always be found an excellent antidote. He had yet to see at autopsy a case of diffuse peritonitis that had led him to think that anything could have been done surgically to save the patient's life. He agreed with Dr. Grandin as to the advisability of draining in the extremely localized cases, and postponing more radical measures.

Dr. J. Riddle Goffe said that he preferred to explore the interior of the uterus in these cases with the curette rather than with the finger, as there seemed to him less danger of sepsis from such a mode of examination. He had kept careful records during the past six years of the cause of sepsis in the cases that he had seen in consultation, and in every instance the hand had been carried into the uterus.

Unfavorable Experience with the Antistreptococcic Serum.—Dr. S. Marx said that Dr. Grandin had clearly stated the limitations of the curette, but had neglected to say how the operator was to know when he had reached that "granulation barrier." The serum treatment had been found successful in ordinary surgical cases, but not in puerperal ones. This was probably due partly to the modifying influence of the puerperium, and partly to the occurrence of mixed infection and the difficulty of removing the source of the infection. In a large number of cases reported as cured by the serum, the condition had been a sapræmia, and not a true septicæmia. He had had five cases in which the serum had been used. In the first case a bacteriological examination showed the streptococcus and the colon bacillus. In that case there was an antepartum infection, and although the serum was used early the patient died very quickly. In the second case nothing but the streptococcus was found by the bacteriologist. Fresh Marmorek's serum was used, notwithstanding the apparently fair condition of the patient, yet she died within five hours, and apparently as a result of the injection of the serum. In the third case the woman developed an acute endocarditis, an embolism of the lung, and diffuse emboli of the skin. She died quite suddenly at the end of the second week from pulmonary embolism. In the fourth case a bacteriological examination showed streptococci, and the patient died at the end of a week. In the fifth case no bacteriological examination had been made. Instead of the usual fall of temperature after the use of the serum, in this case the temperature rose.

Dr. J. Milton Mabbott called attention to the important aid to diagnosis sometimes afforded by quinine or by an examination of the blood for the malarial plasmodium. In this way some fevers might be explained which otherwise the attending physician might be led to attribute to sepsis.

The Method of Intra-Uterine Irrigation.—Dr. W. Evelyn Porter said that but little had been said about the method of employing the intra-uterine irrigation treatment. Undoubtedly the frequent introduction of the Chamberlin tube would give rise to much discomfort and exhaustion, but if a flexible sterilized catheter were introduced well up to the fundus and left in place, a rubber drainage tube being attached to it and brought out of the vulva, frequent irrigation could be employed with most excellent results. When a retained portion of placenta could be located with the finger, the placental forceps would be found very much better than either the blunt or the sharp curette.

Dr. A. M. Lesser cited a case in which the malarial origin of the fever had been clearly proved by the results of treatment with quinine. In his experience it had not been necessary to use such large doses of alcohol as had been recommended this evening. During the period of high fever his patients were given water and but little food: when the temperature was lower more nourishing food was administered. He favored the use of gauze in the uterus, kept moist with alcohol.

Dr. Jewett said that he did not think the distinction between sapræmia and sepsis was so sharp or so important as many were inclined to believe. He would use the curette in every case in which the uterus contained decomposing clots, necrotic shreds of membrane, or fragments of placenta. He had been struck with the frequency with which malarial poisoning was combined with sepsis.

Dr. Grandin, in closing the discussion, took exception to the statement made by one speaker that the curette was preferable to the finger in exploring the uter-

ine cavity. When the retained portion of secundines had been removed by the curette, it would be found that the instrument had reached down to the "granulation layer."

Clinical Department.

SOME PRACTICAL POINTS GATHERED FROM SOURCES WISE AND OTHERWISE.[1]

By WILL B. DAVIS, M.D.,

PUEBLO, COLO.

Once upon a time a Texas cowboy gave me a remedy for that disease of as many names as the many dermatologists who have tried to investigate it have seen proper to call it—most commonly known as prairie or winter itch. The remedy was a saturated solution of bichloride of mercury in alcohol, about one hundred and sixty grains to the ounce. I use it in the strength of from thirty to sixty grains to the ounce. My method of applying it is lightly to sponge a surface of about three inches square at a time, selecting a different site for each successive sponging, repeating the procedure morning and evening; and if prompt relief is not obtained, sponging over a larger and larger extent, until a surface of six inches square is attained. Usually in three or four days a complete and permanent cure is effected—long before one-tenth of the body surface has been gone over.

In selecting the sites for making the appplications, those most affected are to be preferred, if for no other reason than that the itching immediately where the remedy is applied is instantly relieved, which indeed is a great temptation to the sufferer to push the treatment too far. It does not blister or cause any inconvenience, and in the many cases in which I have thus used the treatment there was no constitutional disturbance.

The fact that the disease was permanently cured when a comparatively small surface of the body had been sponged, satisfied my mind that its action was not altogether local; yet in giving the bichloride internally in as large doses as I dared it seemed to have no effect upon the itch. Perhaps the dermatologist can explain this. I only know that the remedy as given is a quick and certain specific. To be sure, it must be given with caution, and its dangers fully explained if it is committed to the hands of a patient. The fault in any untoward result would not be with the remedy, but in its careless or reckless use; for at a modest estimate I have used it in at least one hundred cases, and know from personal observation the entire correctness of the foregoing statements.

Some sixteen years ago a barber gave me a remedy for ringworm. It was a saturated solution of salicylic acid in alcohol—about two and one-half drachms to the ounce. It can be applied with a hair pencil, or sponged over the surface before retiring at night. The alcohol soon evaporates, leaving a deposit of salicylic acid in the form of a white film or powder, which can be readily washed off when desired. One application will suffice. In a few days the epithelium over the affected surface peels off, and in a week or ten days the parts return to their normal appearance. Nothing could be more elegant or satisfactory.

We all know that salicylic acid is held in high esteem by our dermatologists now, especially in skin diseases accompanied with pruritus, but had I waited for my cue from these sources I would have been several years later in adopting it. All I could learn of the barber's information who gave it to me was that he learned it from another barber.

[1] Read before the Colorado State Medical Society, at Denver, June 16, 1897.

Scarcely a year or six months have passed since I joined the ranks of the profession but the files of the medical journals have indicated some remedy for obstinate hiccough. But somewhere in the early eighties I read in the Medical Record a common-sense remedy—one which I found to succeed in one case of nearly seventy-two hours' duration, after all customary medicinal remedies had failed, and I have successfully tried it in several cases since. It was to make pressure against the diaphragm. Pressure upon an affected muscle will readily relieve local spasm anywhere, for a time at least, as in blepharospasm, itself sometimes annoying, which pressure upon the orbicularis palpebrarum will check.

The causes of local spasms are sometimes very remote, and when ascertainable may or may not be readily relieved; but hiccough is sometimes so distressing and persistent that it is a satisfaction to be able to relieve it even temporarily, or until from some imprudence or a fit of coughing the spasms are renewed, when again the same remedy may be used with effect. The technical application consists in the operator sitting on a firm table, placing one knee on the spine of the patient, and, with both hands reaching around either side, pressing his fingers well up under the ribs to the right and left of the epigastric region, the patient at the same time inclining forward, thus relaxing the abdominal muscles and facilitating the effort to make pressure upon the diaphragm. When the hiccough is checked, which is usually at once, and the operator tires of maintaining his position, the pressure should be so gradually relaxed that the patient would scarcely know when the hands were removed.

The patient could also be taught how to make pressure himself on his diaphragm, in the event hiccough should return, by pressing his fingers up under the ribs as did the operator, and assuming a position to relax completely the abdominal muscles which would be self-suggestive, whether lying, sitting, or standing.

For chronic constipation, from which so many of the human family suffer, I wish most heartily to indorse and recommend thorough divulsion of the rectum. So universal has been the relief from chronic constipation following all my rectal operations in which divulsion was required that I have recommended divulsion in many such cases and have succeeded in inducing some to submit to the treatment, with complete cures in all that did. Just how the cure comes about it is not the purpose of this paper to discuss. I simply commend divulsion as the best and only permanent cure known to me. In the train of chronic constipation there may be many other incidental troubles which also are thereby relieved, and this fact alone accounts for many of the so-called wonderful cures by the orificial surgeon.

I believe that advocacy of this treatment and its adoption by the profession would do more than any one thing to bankrupt the patent-medicine traffic in this country. The main difficulty in its application is to induce the patient to undergo anæsthesia and remain in bed a few days—say five or six. The dangers of the procedure pertain only to the use of an anæsthetic, which all can estimate for themselves. For my own part, I will say that having been a lifelong sufferer from chronic constipation and later from piles, and having submitted to the treatment myself and having since enjoyed such luxurious relief from constipation and its attendant ills, I count the possible dangers from anæsthesia as nothing compared to the immensity of the gain to be obtained.

In doing the operation, to secure full and permanent benefit it should be done thoroughly and well. That is to say, the divulsion should be thorough, from muco-cutaneous fold to rectal ampulla. Every resisting fibre should be completely paralyzed, according to

the methods described in the books. This will require general anæsthesia, for local anæsthetics will not avail.

On the subject of appendicitis I beg to refer to one point only—that is, to the license which some surgeons take, on the strength of the good advice of McBurney, Morris, and others, not to search too persistently for the appendix, as well as not to run too great a risk of breaking through the peritoneal barricade to remove it radically when found. That such advice was not intended to warrant the opening of an appendical abscess and packing with gauze as a routine course is clear enough. Such men neither do that kind of work nor advise it.

I am led to speak of this on account of the large proportion of cases, in the few operations I have done, which had been thus dealt with formerly. I could not but feel that had reasonable intelligence been exercised at the first operations, such patients would not have been subjected to further attacks or operations. I have been strongly impressed more than once that neither valor nor its better part, discretion, had had a fair show.

HERNIA IN AN INFANT TEN WEEKS OF AGE.

By S. H. CHAMPLIN, M.D.,

CHICAGO, ILL.

In the MEDICAL RECORD of June 12th there is an extract from an article by Dowd,[1] on "Strangulated Hernia in an Infant Four Months Old." On June 27th and previous to reading the above, I was called to see an infant, ten weeks old, which was said by the mother to be suffering from suppression of urine. The mother said the child had a severe paroxysm of coughing at four o'clock that morning, and had cried continuously up to the time of my visit, at 2 P.M., and had not passed urine during the interval.

On examination a small tumor on the right side, about as large as the end of a man's thumb, was found extending through the external abdominal ring into the upper part of the scrotum, the testicles were in their normal position. Previous to that morning the child had shown no evidence of rupture.

Suggesting the possibility of operation to the parents, I told them that taxis would first be attempted. For thirty minutes very careful manipulations were tried, with the child in different positions, without success.

Finally I placed the baby's head and shoulders on my right knee and the buttocks on my left knee at a somewhat higher level than the right, and instructed the mother to hold down the feet, thus putting the abdominal wall on the stretch. After about one minute of delicate manipulation in this position, the bowel was reduced with an audible gurgle; and immediately following the reduction the baby passed about two ounces of clear straw-colored urine. Five minutes later the child was sound asleep.

July 7th I saw the baby again; there had been no return of the hernia, and the little one seemed none the worse for its rather severe experience.

I do not wish to appear as an advocate of prolonged taxis, especially in children; but the parents in this case strenuously objected to an operation, and I had no choice in the matter. However, I advised operation in case there was a reappearance of the hernia.

1,002 MADISON STREET.

Incise and disinfect at once, instead of waiting for suppuration to occur in infected wounds.—*International Journal of Surgery.*

[1] Archives of Pediatrics, May, 1897.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE MEDICAL COUNCIL ELECTION—A NEWSPAPER ON ABUSE OF MEDICAL CHARITIES—"OUIDA" ON CRUELTY—MEDICAL RETICENCE—CYCLE ACCIDENT TO A DOCTOR—HEALTH OF MR. E. HART—SIR S. WILKS—EPIDEMIC OF TYPHOID—DEATHS OF DRS. FLETCHER AND RYE—DIPHTHERIA.

LONDON, September 24, 1897.

The election of a direct representative to the Medical Council, which I announced as imminent last week, presents curious perplexities. Dr. Rentoul's resignation necessitated the election. On Monday it was announced that he had withdrawn his resignation in a letter to the president dated the 18th. This letter was referred to the legal advisers of the council, who pronounce the resignation inoperative. So the election proceeds. Another candidate has come forward in the person of James Arthur Rigby, M.D., of the London University, etc. In a long address he gives some account of his thirty-three years' experience and the views he advances. He is a strong advocate of the claims of the general practitioners, and takes almost a trades-union view of their rights. He laments that "the old-fashioned consulting physician is rapidly becoming a thing of the past and is being superseded by the modern specialist." To the latter he scarcely accords justice, but this may perhaps be excused in an election address. If we are to have specialists at all, he would have them attain their position through examinations and diplomas for the dignity, such as have been inaugurated in the public-health service. Few people, however, whom I have met consider the public-health diplomas a blessing save to the corporations and individuals that finger the fees. This item in his programme is far less taking than his denunciation of medical-aid societies, prescribing chemists, advertising quacks, and the newspapers which sell their columns to the worst impostors. In a summary he announces first of all, that he will "try and suppress all mischievous, lying, and filthy advertisements which disfigure what should be a respectable press." If sending Dr. Rigby to the council would be likely to accomplish this one of his proposed reforms, he might reckon on his return by an overwhelming majority.

Dr. Dolan, of Halifax, is another candidate, as he was at the last election. He stands as a general practitioner, and says he is willing to give way to any such who may be more widely supported, but not to a consultant like Mr. Horsley. This cry that representation was given to the general practitioners as such is inaccurate. They are not recognized as a distinct class in the act. It is registered practitioners who have a vote, and of course consultants of all kinds are registered. It is true the generals are in an overwhelming majority and can carry any election, but it is quite possible a consultant may be a model representative of their interests, and Mr. Horsley's work on the Defence Union has produced the widespread impression that he is such a one. He addressed an influential meeting of the profession at Manchester on Tuesday, and was assured of the almost unanimous support of those present.

The rumor that Sir W. Foster might come forward is confirmed, I regret to say. He had his day in the council, and, though it is the cue of the wire-pullers in the British Medical Association to extol him and his own cue to talk of "our great association," it is difficult to see what he achieved. He could have kept the seat when he had it, but having left it should be content to see it occupied by some one else. The council will be all the better for new blood.

The *Globe* came out last Monday with an editorial note on the abuse of dispensaries and hospitals, which is gratifying to medical reformers. It is refreshing to find one of our best-conducted newspapers denouncing "the exceedingly mean people who, without the excuse of poverty, victimize" medical charities, and urging subscribers "to exercise all possible care in complying with requests for letters of recommendation."

Here the *Globe* hits the nail on the head, for it is undoubtedly a fact that very few subscribers consider it a duty to make any inquiry about an applicant for a letter. Many, indeed, look upon their subscription as purchasing so many letters to distribute among their dependants as a cheap charity.

"Ouida" has been denouncing in vigorous terms the slaughter of birds which goes on in Italy and to some extent in England too. Quite recently some rare birds were shot as soon as they appeared here. Every one will agree with "Ouida" so far, but she unfortunately joins to her denunciation equal condemnation of dog muzzles and Pasteurism, and declares that if the public does not close the laboratories "the whole human race will be blood poisoned." She adds: "The danger is clearly enough recognized by those who are not the dupes of scientists. I think the domination of these empirics is the greatest calamity that has ever befallen mankind." "Ouida" in her tantrums is less amusing than at other times, and the scientists will survive her anger.

The responsibilities of practitioners as to the observance of reticence about patients seem to increase, and juries are taking a severe view of remarks affecting the friends or guardians of the sick. A case of libel was tried on Saturday against a parish doctor, who, in defending himself against a charge of neglecting a child with diphtheria, wrote to the board of guardians that the neglect was on the parents' side in not calling in a doctor earlier. He added that the child's life was insured, and that when the mother came for the certificate of death she was intoxicated. His letter was read to the board and an action was brought. The jury found for the parents and assessed the damages at £200, but notice of appeal was given on the ground that the amount was excessive. The judge advised the parents to accept much less, said half would have been sufficient, and the case was adjourned. Unless substantial reduction is made, the judge promised to grant a new trial.

Mr. R. J. Stephens, M.R.C.S., met his death from a bicycle accident on the 11th inst. He was riding down a hill with his feet on the rest, in company with professional friends, when the cycle suddenly swerved and he fell on his head. He died the same night, without having recovered consciousness, from cerebral hemorrhage of considerable extent. He was only thirty-four years old.

Mr. Ernest Hart, whose indifferent health was well known in certain circles, has had to undergo a serious operation, amputation of the leg, for necrosis of bone in the foot supervening on ulceration, probably connected with the glycosuria of which he was the subject. The operation was well borne, and I hear to-day that he is convalescent from it.

The old pupils and friends of Sir S. Wilks propose to entertain him at a dinner.

A serious outbreak of typhoid has occurred at Maidstone, Kent. More than three hundred cases have been notified.

Dr. Adam Fletcher, of Bury, where he had practised for nearly half a century, died on the 28th ult. He was a justice of the peace and greatly respected.

Mr. Brisley Rye died on the 1st inst. He had for some years retired. He was born in 1812, and took his M.R.C.S. in 1836.

The deaths registered last week from diphtheria numbered thirty-five, being ten in excess of the preceding week, but six below the corrected decennial average. In reference to this disease, Dr. F. J. Allan, the able medical officer of health of the Strand district, remarks in his report that in the first nine weeks of the quarter the number of cases notified in London had been two hundred and fifty-nine per week, the number for the corresponding week of last year having been two hundred and sixty-four. So far the cases notified were under the number of the same period of 1896. He thinks the reason why considerable alarm has been expressed is that the asylums board has not in its hospitals sufficient accommodation for the increasing class of patients who are ready to resort to them. Within the next two months the disease reaches its usual maximum, and from present appearances Dr. Allan does not consider it probable that there will be so many cases as last year.

THE PREVENTION OF UTERINE DISPLACEMENTS.

[illegible]

SIR: Permit me to correct a remark attributed to me in your report of the discussion on Dr. Savidge's paper on "Retrodeviations of the Uterus," in last week's MEDICAL RECORD. I did not say that I had for many years recommended "that every parturient woman should have a pessary introduced before she was allowed to get out of bed" "as a prevention of subinvolution." That would be an unnecessary and very useless practice, and decidedly "meddlesome gynæcology." What I did say was that I had for many years advised the introduction of a pessary as a cure for an old retrodisplacement of the uterus before a parturient woman so afflicted was allowed to leave her bed, at the time when all her pelvic organs were undergoing involution. That is quite a different thing from inserting a pessary into every puerpera as a prevention of a possible subsequent displacement or the occurrence of subinvolution.

PAUL F. MUNDÉ, M.D.

[illegible]

New Instruments.

A NEW SEPTUM KNIFE.

BY JOSEPH E. [illegible], M.D.,

[illegible]

[illegible]

THE accompanying illustration represents a new instrument which I have devised and used with great satisfaction in removing cartilaginous obstructions in the nasal passages. It consists of a thin-bladed knife, about two and one-half inches long, narrowing toward a blunted point; the cutting edge is patterned somewhat similarly to that of the modern household knife, but the knife differs from the latter in being sharpened on both sides, and this I consider a great advantage, as it thus keeps its edge better and it can be used for either side of the nose. It may safely be said that the majority of surgeons who operate on the nose have been confronted with the same obstacles which lead me to present this instrument to the profession. Among the more important of these I would mention:

1. The difficulty of catching hold of soft cartilage with a saw, owing to its elasticity and free mobility. This difficulty is overcome by my instrument, which combines the action of both saw and knife.

2. The astonishingly small amount removed at the first attempt; especially is this the case in operating on deviated septa; we begin to saw at the base, and

when we have fairly gotten hold with the saw we find our instrument at the tip of the projection. Consequently but a small portion of cartilage over the point is removed, and for the removal of the remaining cartilage a second or third operation is necessary.

3. The slowness of the operation, which generally taxes the patience of both the physician and the patient. This is a consideration of great moment in

the case of children, in whom rapidity of operation is of first importance.

A single trial of this new septum knife will convince the operator of its usefulness and advantages over the saw in removing ecchondromata and deviated septa.

My ideas were carefully carried out by W. F. Ford & Co., of New York, by whom the instrument is manufactured.

165 East Eighty-Second Street.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 9, 1897:

	Cases.	Deaths.
Tuberculosis	211	112
Typhoid fever	42	7
Scarlet fever	11	3
Cerebro-spinal meningitis	0	3
Measles	14	2
Diphtheria	154	24
Laryngeal diphtheria (croup)	8	4
Chicken-pox	1	0

Ptomain Poisoning.—Some deaths which have recently occurred in Lichfield, England, from ptomain poisoning after the eating of frozen mutton, have caused quite a flutter in the breasts of importers and purveyors of frozen meat. The *Australian Trading World*, commenting on the matter, suggests a somewhat novel theory as to the cause of ptomain poisoning—a theory which is not without a suspicion of having been suggested by self-interest. The editor holds that in ancient cities, like Lichfield, where many of the houses are from one hundred and fifty to two hundred years old, although these places may be outwardly clean, nevertheless the condition under the surface is deplorable, and that in most instances to this hidden unsanitary state must be attributed the food poisoning rather than to the meat itself.

The Temperature of Newborn Children.—As the result of a clinical study, Mühlmann (*Archiv für Kinderheilkunde*, B. xxiii., H. iv., v., p. 291) has found that the average temperature of all children does not differ from that of adults. Occasionally temperatures as low as 34.5° C. (94.1° F.) are found, but like conditions may be observed exceptionally in very old persons. The average temperature of twenty-one newborn children, however, taken in the rectum with an exposure of ten minutes, was found to be 36.3° C. (97.3° F.). No appreciable difference was noted between the temperature of boys and that of girls; the differences between the two sexes was not greater than that between newborn children of the same sex. With regard to temperature variations, there was in the twenty-one cases studied no correspondence in the daily course. A correspondence existed among a certain group of children when the temperature was taken upon the same day and in the same room. The regularity of the temperature course observed in some children did not correspond with that found in adults, maxima appearing at times during the night, and minima during the day. The maxima could not be attributed to digestive or muscular activity, as food was so given and the observations were so timed as to avoid these influences. Special muscular activity appeared without influence upon the temperature, although bathing was attended by the greatest activity and was the cause of the greatest variation in temperature. The usual influences believed to be responsible for the daily maxima in adults—*e.g.*, daylight, activity, nervous excitement, etc.—appeared without influence upon children, the temperature actually declining at a time when all of these were in operation. The belief is expressed that the most important factor in causing the variations in the temperature of the newborn is to be found in the surrounding atmosphere.

A Feat of Memory.—The purely intellectual attribute we call memory, which "is not a function, but only a resultant due to the concurrence of the various elementary functions of the mind," is capable of almost illimitable development, as Max Müller's accounts of the recitations of the Brahmins or Sir William Hamilton's references to the feats of the humanists of the Renaissance sufficiently demonstrate. Both the philologist and the metaphysician, however, are at one in thinking that the habits of the present time—above all the desultory, particularly the ephemeral, reading now well-nigh universal—are not favorable to such feats. Indeed, Max Müller says that the daily perusal of the *Times* for ten years would have sufficed to impair the strongest memory ever Brahmin possessed. That the feats, however, of a Scaliger or a Lipsius are, even at the close of the nineteenth century, quite possible, was demonstrated the other day at Sondrio (capital of the Valtellina), where the advocate Signor Edoë, professor in the Istituto di San Lorenzo, repeated, for a wager, in twenty hours consecutively—from 6 P.M. till 2 P.M. of the next day—without prompting or aid of any sort, the entire "Divina Commedia" of Dante. The achievement came off in presence of a committee of brother professors and literary men, who afterward entertained the performer at a banquet, not unwelcome, one would imagine, to either party after such an effort of brain tension and vocal articulation on the one hand, and sustained surveillance *ad apertura libri* on the other. The "Divina Commedia," I need hardly remind the reader, consists of nearly a hundred cantos, and of all poetical compositions is the least diffuse—characterized, that is to say, by the closest condensation of thought and expression. The late Duke of Sermoneta (Sir Walter Scott's *fidus Achates* on his memorable visit to Rome in 1832) could also repeat the "Divina Commedia" from first to last, but that was the result of lifelong study, not, as in Signor Edoë's case, the outcome of comparatively short preparation, begun and ended for the purpose of winning a wager.—*Rome Correspondent of The Lancet.*

Sunlight and Bacteria.—In view of the destructive effect of sunlight, especially of the blue to the ultra-violet rays, upon bacteria in water, Prof. H. Marshall Ward would explain the comparative freedom of river waters under the blazing hot summer sun from bacteria, as against the more abundant infection of the same waters in winter. Pasteur and Miguel found that the germs floating in the air are, for the most part, dead—killed, the author holds, by the sun. Yeasts which normally vegetate on the exterior of ripening

grapes are destroyed, according to Martinaud, if the heat be very intense; and Guinti has observed that the ingress of sunlight hinders acetic fermentation. When the typhoid bacillus falls into turbid dirty water in summer, it finds a congenial propagating place. The dirt furnishes it food, absorbs heat to increase the warmth, and keeps off the hostile blue and violet rays. —*Popular Science Monthly*.

A Surgeon's Culinary Skill.—According to the London *Evening News*, Mr. Lawson Tait is a wonderful cook and concocter of new dishes. He frequently invites his confrères to strange meals all the items of which have been either prepared or invented by himself.

Somatic Therapeutics.—Gain in body weight and improvement in neurasthenic conditions usually go together, but there are enough exceptions to the rule to show that nervous nutrition is something more than a mere sample of the general. The more nearly symptoms approach in character to the "fixed idea" of the insane, the less amenable are they to the beneficial effect of mere somatic therapeutics.—*Medical Times and Hospital Gazette*.

Worry.—Modern science has brought to light nothing more curiously interesting than the fact that worry will kill, and the way in which it kills is stated to be that worry injures beyond repair certain cells of the brain. The brain being the nutritive centre of the body, the other organs become gradually injured, and when some disease of these organs or a combination of them arises death finally ensues. Occasional worrying of the system the brain can cope with, but the iteration and reiteration of one idea of a disquieting sort the cells of the brain are not proof against. —*Pharmaceutical Products*.

Vital Statistics of Philadelphia.—For the week ending September 4th there were reported to the Philadelphia board of health 399 deaths, 12 more than during the preceding week, and 37 more than during the corresponding week of the previous year. Of the whole number, 159 occurred in children under five years of age. The principal individual causes of death were as follows: Pulmonary tuberculosis, 37; cholera infantum, 36, marasmus, 26; heart disease, 25; nephritis, 21; gastro-enteritis and old age, each 18; diphtheria and pneumonia, each 17; apoplexy, carcinoma, and convulsions, each 13; typhoid fever and inanition, each 11; inflammation of the brain and whooping cough, each 10. There were reported during the week also 80 cases of typhoid fever, 67 of diphtheria, and 35 of scarlet fever.

Bacterial Mud.—An instance of oxide of iron associated with bacteria occurring on a large scale has been investigated by Prof. Manabu Miyoshi, who holds the chair of botany in the University of Tokio in Japan. The material examined by him was a ferruginous mud from the hot springs of Ikao. This mud consists entirely of bacteria. The bacteria seem to resemble the leptothrix ochracea of Kütz, but further observations will be necessary in order to determine whether they constitute a new species or not. From experiments made with hydrochloric acid Professor Miyoshi is led to believe that the oxide of iron is not deposited on the walls of the cells but is more or less intimately incorporated with them. No others of the more common iron-containing bacteria, such as crenothrix Kühmana, were found in this particular mud.—*Lancet*.

Health Reports.—The following statistics concerning yellow fever, cholera, plague, and small-pox have been received in the office of the supervising surgeon-general of the United States Marine Hospital service during the week ended October 9, 1897:

		Cases	Deaths
Yellow Fever—United States.			
Alabama, Aleo	October 5th	1	
Mobile	October 1st to 8th	4	
Louisiana, New Orleans	October 1st to 6th	277	20
Mississippi, Inverness	October 1st to 6th	111	5
Clinton	To date (October 8th)	10	1
Edwards	October 1st to 5th	116	11
Henderson's Point	October 7th	3	
McHenry	October 1st to 5th	2	
Natta Yuma	October 1st to 6th	2	
Scranton	October 1st to 7th	6	2
Yellow Fever—Foreign.			
Brazil, Para	September 11th to 18th	..	3
Cuba, Cardenas	September 11th to 25th	..	5
Matanzas	September 22d to 29th	..	3
Santiago	September 18th to 25th	..	10
Jamaica, Kingston	August 28th to September 12th	5	4
Mexico, Mazatlan	September 25th to October 2d	..	9
U. S. of Colombia, Panama	September 13th to 23d	1	1
Cholera—Foreign.			
India, Bombay	September 1st to 7th	.	37
Calcutta	August 21st to 28th	.	5
Madras	August 28th to September 3d	.	21
Japan, Osaka and Hiogo	August 28th to September 4th	.	1
Plague—Foreign.			
India, Bombay	September 1st to 7th	..	23
Small-Pox—United States.			
Alabama, Bessemer	September 25th to October 2d	1	
Small-Pox—Foreign.			
Bohemia, Prague	September 11th to 18th	2	
Canada, Montreal	October 1st to 6th	1	
Egypt, Alexandria	August 15th to 21st	.	1
Cairo	August 13th to 26th	..	2
England, Sheffield	September 11th to 18th	1	
India, Calcutta	August 21st to 28th	.	1
Madras	August 28th to September 3d	..	2
Scotland, Glasgow	September 11th to 18th	..	2
Spain, Barcelona	[illegible]	..	2
Madrid	September 7th to 14th	..	2
Russia, Moscow	September 7th to 13th	1	
Warsaw	September 11th to 18th	..	5

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

LECTURES ON THE ACTION OF MEDICINES. By Dr. T. Lauder Brunton. 8vo, 673 pages. The Macmillan Company, New York.

ESSENTIALS OF OBSTETRICS. By Dr. C. Jewett, assisted by Dr. H. F. Jewett. 12mo, 358 pages. Illustrated. Lea Brothers & Co., Philadelphia. Price, $2.25.

TUBERCULOSIS OF THE GENITO-URINARY ORGANS. By Dr. N. Senn. 8vo, 317 pages. Illustrated. W. B. Saunders, Philadelphia.

CIRCULATION OF THE CENTRAL NERVOUS SYSTEM. By Dr. Wm. Browning. 8vo, 173 pages. Illustrated. J. B. Lippincott Company, Philadelphia. Price, $1.50.

A QUIZ MANUAL OF HISTOLOGY. By Dr. Charles B. Reed and F. B. Noyes, B.A., D.D.S. 12mo, 203 pages. The W. T. Keener Company, Chicago.

MANUAL OF BACTERIOLOGY. By Dr. R. Muir and Dr. J. Ritchie. 12mo, 519 pages. Illustrated. The Macmillan Company, New York. Price, $3.25.

APPENDICITIS. By Dr. H. Mynter. 8vo, 303 pages. J. B. Lippincott Company, Philadelphia, Pa. Price, $2.00.

A SYSTEM OF MEDICINE. Vol. III. Edited by Dr. T. C. Allbutt. 8vo, 1,176 pages. Illustrated. The Macmillan Company, New York.

ORIGIN OF DISEASE. By Dr. A. V. Meigs. 8vo, 229 pages. Illustrated. J. B. Lippincott Company, Philadelphia.

CONSTIPATION. By Dr. H. Illoway. 8vo, 495 pages. Illustrated. The Macmillan Company, New York. Price, $4.00.

TEXT-BOOK OF MEDICAL AND SURGICAL GYNECOLOGY. By Dr. R. W. Garrett. 8vo, 419 pages. Illustrated. J. A. Carveth & Co., Toronto, Ont. Price, $2.50.

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Original Articles.

A CLINICAL REVIEW ILLUSTRATING THE DIFFERENCE BETWEEN ASEPSIS AND ANTISEPSIS.[1]

By J. BLOCK, M.D.,

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THAT medicine as an art had its origin in a spirit of benevolence seems easily conceivable, observing the promptness and eagerness with which the modern practitioner, whether surgeon or physician, exhibits or applies a drug or chemical. The ways of the primitive man are reflected by the hurried application of this or that remedy or dressing, lest something be left undone, though occasionally we find a physician betraying less of this solicitude for the art than an aptitude for observing nature's masterly methods. Though here and there we find a Louis, or some master mind absorbed in the study of nature's revelations, deducing laws for practical guidance that distinctly indicate a *noli me tangere*, the atavistic tendency has such a firm grasp upon the mass of the profession that the appearance of any nostrum, whether it be a mud or a vapor (of course under some less antiquated name), is hailed with delight and accepted without recognizing its limitations for good or its positive influence for evil.

This benevolent desire to do something for the sufferer, descending as a heritage from one generation of medical men to another, has finally developed into an instinct difficult to eradicate. It is clear that in the very beginning of a society indicating even a rudimentary division of labor the man set aside to care for the sick and the wounded, governed by an impulse to preserve his kind, regarded nature as his enemy, and, loth to accept her teachings, poured the supposed balm upon their wounds, to be finally delighted with its fancied effect when she rose superior to a twofold infliction. Even to-day the inexorable law of heredity is revealed in the imitative faculty, the frock of the modern practitioner scarcely sufficing to conceal the simian appendage of his remote ancestor.

It remained for two Frenchmen to determine the something in the air, previously mysterious and mystifying, which in the one case sustained organic life and in the other destroyed it by parasitic devastation. The great chemist, Lavoisier, laid the foundation for modern chemistry by the discovery of oxygen as a ponderable something upon which terrestrial existence depended; and his worthy successor, Pasteur, in another department, contributed the substratum for modern bacteriology by revealing the presence of something else in the air, upon which fermentative processes depended, little dreamt of by his illustrious predecessor.

Lister, to whom humanity must ever remain grateful, a pioneer in a hitherto practically unexplored field, still fettered by the inexorable statute of heredity, proceeded to destroy the pestiferous micro-organism, assuming a belligerent attitude with devices for offensive warfare best suited to the purpose and the maxim "eternal vigilance is the price of life and health." That he suspected his agents to be as formidable to one organism as to another must be evident to those who practised his methods when first introduced; his protective immediately applied to the tissues being in evidence. He was the father of antisepticism. What he scientifically demonstrated was empirically practised by his predecessors. Though essaying to be prophylactic, it was essentially therapeutic. He was still the chemist, and not the broad-gauged philosopher peering into the grand vista of future preventive medicine.

Perhaps the title I have chosen under which I might present a summary of a few cases recently under observation is not altogether literally fitting; but it is often found more convenient and perhaps more effective to demonstrate a thing by what it is not than by what it is, and with a view of eliciting a discussion from the fellows on a subject perhaps trite to some, but to me always new and attractive, I attempt to include the following report under the above caption:

CASE I.—Miss F——, about nineteen years of age, first consulted me for what was clearly a case of chronic appendicitis of four months' standing; sharply acute at first, becoming chronic with a continued fever, pain, intestinal disturbance, right iliac, lumbar, and hypochondriac intumescence and tenderness, extreme flexion and adduction of the corresponding thigh and leg, with a degree of fixation suggesting disease at the hip-joint. Operation was declined, and after a month's observation and simulated treatment she so far improved as to be able to return to her home, fancying she had escaped the knife of the surgeon. This was four years ago. During the succeeding years she had recurrent attacks, never so accentuated or serious, however, as the primary invasion. Finally, becoming disgusted with a state of chronic invalidism, she returned for operation. This was performed with the usual pre-operative and postoperative precautionary measures. Before the incision was closed the extensive intestinal adhesions were broken up and a drainage was placed over the site of the appendical stump. The wound was dressed with the customary iodoform gauze, and renewed *secundum artem* after the fourth day, when the drainage was removed. I wish to call your attention for further reference to the last item in this short narration of a very interesting case. The patient made an uneventful recovery with very slight reaction, and was dismissed from the hospital at the end of three weeks, much improved and without subsequent trouble, save the appearance later of a small hernia at the site of the drainage, for which I finally succeeded in persuading the young woman to submit to another operation for its closure, upon my return from my summer vacation. This was done in the following manner: An incision including the entire length of the old cicatrix exposed the muscular and fascial planes of the former wound; the latter (the abdomen at this point being rather thin) were divided with a knife so as to represent two superimposed halves, each of which was stitched by a running suture of chromicized gut, after the manner of Edebohls. The skin was closed by a continuous suture of plain gut sterilized with sublimate, and the wound sealed

[1] Read before the Kansas City Academy of Medicine, November 29, 1896.

with seven or eight narrow strips of iodoform gauze and a ten-per-cent. solution of iodoform collodion. There was practically no reaction and recovery was apparently uneventful. On the tenth day, however, the attendants became alarmed, or perhaps suspicious that all was not well; an oozing about the margins of the gauze placed over the seal, and an annoying burning and pruritus over the abdomen of the patient, calling for a removal of the dressings. This revealed a primary union of the wound and absorption of the external suture, but the skin of the abdomen presented an intense mahogany-colored injection, interspersed with coalescing and confluent vesicles, large bullæ distended with pure serous fluid, which had given way at some places, so that the upper layers of the derma were displaced in large strips with an exposed oozing surface underneath—in short, an iodoform dermatitis. A dusting-powder of talcum fortunately put an end to the antiseptic disease, but what a fertile soil for a serum culture and subsequent infection had not the wound closed primarily. This wound, made with aseptic preliminaries (the catgut prepared by myself and subjected to culture experiments proving its sterility), was unnecessarily supplemented and endangered by antiseptic provision, and convalescence was prolonged.

Case II.—A robust individual in the neighborhood of fifty, so devoid of intelligence as to be on the brink of idiocy, therefore incapable of furnishing any reliable antecedent data, first consulted me about two years ago with what objectively proved to be an obstinate sciatica, which yielded to cauterization repeated at intervals of five days, the iron being applied some five or six times. About four months ago he again applied for treatment, claiming to have the same affection in the opposite member, and insisted upon an application of his old friend, the cautery. Not being able to elicit any history and observing an incipient lameness, I accommodated him. Some four or five days thereafter, being summoned to his home, I found him suffering excruciatingly, and, pushing my investigation, diagnosticated an osteo-periostitis of the upper third of the fibula, advising incision, to which he objected. After a week's flirtation with morphine and poultices, he finally consented to go to the hospital—a free incision evacuating the pus confirming the diagnosis and bringing prompt relief. Iodoform packing after the usual manner, subsequent flushing with sterilized water, and redressing at intervals. During my absence a colleague kindly consented to care for the case, and upon my return informed me that the iodoform proved so irritating that he was obliged to substitute boric acid. About seven weeks ago I proceeded to the removal of an almost cylindrical sequestrum, incising the cicatrix, thoroughly removing all adventitious material with the knife, scissors, and curette—converting the entire field into a clean aseptic ground, but, unmindful of my colleague's previous experience, resorted to the stereotyped iodoform tamponade. There was absolutely no reaction; pulse and temperature were normal. On the fourth day the dressings appearing saturated, I removed them, expecting to encounter a serous oozing from the wound, but instead exposed the packing in the eight-inch incision dry and sweet, but found the epiderm of almost the entire leg practically lifted *en masse* by a series of enormous bullæ, a few remaining unruptured—an iodoform dermatitis. Nor was the effect limited to a local disturbance. Though plain gauze dressings and asepticized-water lavage with sterilized talcum dustings over the denuded derma secured an aseptic course in the healing of the wound, an intensely pruritic generalized reflex eczema set in, with gastro-intestinal disturbances difficult to control. The eczema still remains in patches, with a prospective chronicity not very complimentary to the surgeon. As in the former case, the thoroughness of the asepticism proved a safeguard against the possibility of the stupid antisepticism employed in the face of previous warnings.

In considering the disastrous effects of the antiseptic, several cogent objections may be urged against my aversion to the employment of this particular agent. It is possible that it was impure and that the impurities were responsible for the dermic lesion. Yet the operations were performed in two different institutions, though it is very probable that the chemical was derived from the same source. Again, individual susceptibility or idiosyncrasy may be invoked as a possible explanation. But are we always able to determine this in advance? Finally, the degree of concentration of the drug and the unnecessarily prolonged contact of the dressings may have been responsible. In the first case this was probably true, for no untoward effects were observed when the dressings were changed after the fourth day. In the latter the period of immunity from irritation, if this was an element in its production, must have been much shorter. But though all this may be true under modern methods and practice, the longer the primary dressing may be allowed to remain the better, wound rest being no inconsiderable factor in the promotion of primary union. I do not underrate the value of this excellent drug where it is clearly indicated, and am not very partial to the many substitutes that are being continually offered to the profession, realizing the pithiness of the remark of Mosetig, that "though there were many chancellors, there was but one Bismarck," when extolling its virtues; yet I cannot help believing that it adds nothing to the assurance of a thoroughly asepticized wound, but often offers a premium for a local or systemic conflagration. To see the surgeon applying his dressing, the perforated container in hand, dusting the wound with an air of satisfaction as he views his work, one would think he would no more omit this pleasing stroke than the seasoning of his steak, the penetrating odor of the one being as important as the savor of the other. Surely this must be from force of habit, since there can be but little good reason for this final ceremony.

Case III.—Mr. W——, aged fifty, of good habits, whose previous history is unimportant, save a very remote syphilis, met with a painful accident some two months ago while riding, both horse and rider falling. The animal fell in such a manner as to crush the patient's right leg to the ground, the brunt of the force coming upon the antero-lateral face of the member, just above the knee-joint. Though the whole leg below this point exhibited evidences of a contusion in an iris-hued swelling, just above the patella there was a superficially contused lacerated wound—indeed, little more than an abrasion, exposing in part the corium and at other points the subcutaneous fat, as though excoriated by particles of sand. The surface might have extended over an area, say, of about one and one-half inches square; beyond, looking toward and including the surface to the biceps tendon, and extending upward above the wound for about one inch, the parts looked angry and inflamed. There was no constitutional disturbance. It was doubtful whether he was more than momentarily stunned at the time of the accident. He complained of some headache on the same side and pain about the shoulder, though an examination presented no gross evidences of injury at these points. I first saw him about two days after the accident, some domestic remedies and dressings having been applied meanwhile. From the first I felt confident that the parts included in the brush burn would slough, and so informed the patient, and after cleansing the parts prescribed lead-and-opium lotion and absolute rest in bed. My prediction proved true, and nature was soon

throwing up a line of healthy granulations about and underneath the superficial slough, though the exposed area as well as the skin about the knee-joint was at times painful and even tender, especially after motion. The headache and pain about the shoulder disappeared. The patient grew restive and impatient, regarding the injury as trivial, objected to his enforced confinement, and in about ten days insisted upon applying a dressing relatively permanent, so that he might at least sit up. Submitting under protest, I again cleansed the wound and adjacent area, removing the hair by shaving, omitting the customary iodoform dust, not from choice, but in deference to the sensitive olfactories of his wife, who had some vague notion regarding its reputed unfortunate associations; and applied another less odoriferous substance upon plain gauze, inclosing the whole with absorbent cotton and a light bandage, telling the patient he might sit up with the leg supported upon a chair, and left him with the injunction not to go about and to inform me at once if it proved uncomfortable, for I told him plainly that I had misgivings as to the result. When I was summoned the following morning, he complained of an aching and fever in the parts, and removing the dressing I found not only the wound dry, angry, red, and swollen, but the parts beyond, especially over the edge of the vastus externus and in the sulcus between it and the external hamstring. The former lotion was reapplied and absolute recumbency enjoined, and calling again in the afternoon I found he had had a chill with the usual constitutional disturbance accompanying a local inflammatory reaction; a spreading erysipelas soon set in, extending up the thigh and down the leg, and an area the size of a silver dollar, opposite and distinct from the abrasion above and external to the patella, began to slough, opening a communicating branch from the external to the internal saphenous and exposing the outer hamstring tendon. The usual constitutional symptoms of varying severity accompanied the erysipelas for about ten days, and during the sequestration of the slough an annoying hemorrhage, though not difficult to control, added to the anxiety of the sufferer and his friends. After the parts had cleaned off and begun to granulate, the exposed surface proving refractory because of its relations to the tendon, it required more than a month's splintage and dressing before it would heal.

Case IV.—Mr. B——, aged forty, of large frame and somewhat inclined to obesity, of temperate habits, but old specificity, consulted me upon a Saturday some six weeks ago, for what appeared to be an ischio-rectal abscess just beyond incipiency. He had a cough of which he made light, and some little fever. I advised incision to prevent fistula, but he preferred a poultice and asked for delay. When he called again Monday, with the local condition much aggravated, I insisted upon his repairing to the hospital at once for operation. On the following morning, under anæsthesia I incised the swelling. At that time the whole left ischio-rectal base was swollen, œdematous, bright red, and fluctuating. Making a large longitudinal incision midway between the anus and tuberosity, I was surprised, after the thin, horribly fetid ichorous fluid was evacuated, to find the entire space greenish and black with a gangrenous mass, to remove which I made a transverse incision to the tuberosity and another around behind the anus to the right, as it had already extended in that direction. Everything was thoroughly cleansed, exposing the rectum and levator ani, leaving a cavity admitting a good-sized fist. After packing the cavity with iodoform gauze and applying the bandage, I noticed a small arborescent engorgement superficially located about the raphe of the scrotum, inclined to lividity. By evening I found the constitutional symptoms more pronounced, the patient inclined to wander, and perspiring profusely. When he was placed upon the table the next morning, after removal of the dressings marked evidence of an extension of the process was present. The scrotum was enormously swollen, œdematous, and livid, and the scroto-femoral space up to the groin swollen and red; and continuing the incision up into this region I found the subcutaneous tissue black and the odor frightful. Removing the sphacelated mass, the same dressings were applied. Whiskey in abundance and strychnine were prescribed. The patient grew steadily worse and the sweats profuse; in a word, he was profoundly septic. On removing the dressings the next day the wound looked red and dry, with a scarcely perceptible secretion at a few points, and the scrotum was larger, but there was no fluctuation to indicate the presence of pus. Lateral incision into the purse revealed neither sphacelus nor fluid. The urine was examined, but found negative as to albumin or sugar. I renewed the dressings, dusting iodoform lightly over the entire surface. Subsequently, fearing the possible constitutional effects of the chemical, I substituted Peruvian balsam, but without inducing the presence of a healthy secretion. A colleague, seeing the patient with me, suggested packing with an antiseptic preparation, which in sheer desperation was adopted. Up to that time, although there was but little secretion, the surface was comparatively clean, no longer malodorous, and the surrounding tissues about the buttock and in the groin were only slightly hyperæmic, showing the ordinary circumferential erythema of limited area about open wounds; the scrotum was, however, still largely swollen and blue. A small incision into the raphe proved the tissues underneath free from gangrene. The next day the wound surface assumed a grayish or rather opalescent appearance, the margins became slightly indurated and darker, and upon the following morning, the dressing having been renewed, the appearances were more pronounced—diphtheritic-like upon the surface, with brawny livid borders and an extending erythema suggesting erysipelas. Constitutional symptoms worse: delirium, chills, rapid and weak pulse, and dark tongue, and high temperature. The erysipelas spread rapidly upon the left thigh to the knee, around the back and buttock on both sides, and half-way up the right thigh, with a number of phlegmons. Though the case looked hopeless, we dropped all antiseptics, using sterilized gauze dressings and sterilized water, pushing the whiskey and strychnine, with codeine for the violent cough caused by a dry bronchitis, and morphine at night to quiet the delirium. This process continued for about fifteen days, with repeated chills, colliquative sweats, and pulse at times reaching 160, though in the mean time the wound surface began to secrete clean pus and the scrotum toward the end of the erysipelatous process began to undergo resolution. After much labor and painstaking dressing the patient now, after nearly six weeks, has so far progressed as to be free from fever, with a clean tongue and good appetite, and the wounds are reduced to about one-fourth their original dimensions, though he still has a frequent pulse and a furunculosis of the scalp, but is now very certain of an escape from what seemed almost certain death.

Reviewing the last two cases, I shall anticipate two or three very probable criticisms from those I have the honor to address, viz.: that the appearance of that dreaded malady, erysipelas, and a change in the dressings were merely coincidences; or perhaps that the infection was conveyed from the one to the other; and, last but not least, that the presence of the streptococci about sloughing wounds is very prone to cause diffuse inflammatory processes.

But I take it that all three of these explanations are not very tenable but are susceptible of successful con-

troversion. In both cases the appearance of the spreading infection followed too closely upon the change of treatment to be ignored as a factor; had it occurred in only one I might rest content and not accuse the much-lauded antiseptic preparation, but I cannot refrain from the aspersion in the case of two such apparently positive indictments. Had the man with the contusion been infected subsequent to the gangrenous case, I might have thought myself the culpable carrier of the infection; but the reverse was true. Besides, during this period I performed quite a number of important operations and assisted several friends in many more, some of which were capital, and in no single instance was there a repetition of this experience. Finally, it is doubtful that the gangrenous case had a streptococcus etiology. Though there was no macroscopic connection with the bowel, might there not have been a virulent coli-communis infection? or, as suggested by my colleague, the bacillus fœtidus may have been the infecting agent. Here it might be pertinent to remark that though the subcutaneous tissues were gangrenous, the skin was not involved and there was no emphysematous crackling to suggest malignant œdema, nor was the sufferer a broken-down subject, but apparently in the vigor of health with only this as a possible mode of infection. He supposed himself chafed, and applied some old patent ointment recommended and furnished by a friend. It was said to have been exposed several months and possibly had become rancid. Surely the vascular supply in the fossa is so free that sloughing from obstruction could hardly be thought of.

By returning to the study of nature's methods of repair in wounds, we may possibly get a hint as to what is meant by meddlesome antisepsis. Is it not plain that an antiseptic agent to be availing must be of sufficient strength to destroy the micro-organism to whose presence is chargeable the septic process with which the practitioner is contending? Is it not equally true that to be effective it must be renewed or continuously present in that degree of concentration scientifically determined as inhibitive to the growth and development of succeeding generations? Is it to be supposed that the territory upon which this warfare is being waged remains indifferent to the ravages of the contending forces?

Tissues already impaired by injury or disease require but the devitalizing contact of some chemical to render them a suitable pabulum for the omnipresent micro-organism. The delicate barriers that nature has put up as a defence against further damage, becoming gradually maturer and stronger in response to the demand for tissue repair, are ruthlessly swept away in their incipiency, by assuming that the host has greater endurance and vitality than the parasite. Is not this notion contrary to the teachings of bacteriology? Is it not contrary to common sense? Is there any ground for believing that, in obedience to antiseptic idealism, the tissues electively resent the presence of the germ and welcome the chemical?

Those engaged in sterilizing ligatures and dressings by chemicals or heat tell us of the high concentrations and prolonged contact of the one or continued exposure to the other necessary to be effective. If this is true, why should we depend upon lesser potencies to accomplish the purpose in diseased or injured tissues? If of full strength, why should they not be as destructive to the latter as to the intruder? A little unbiassed reflection, and it must be evident that asepsis and antisepsis are different etymologically as well as surgically. It is not true, as has been advocated by antiseptic enthusiasts, that it is merely juggling with terminology. While asepsis is antiseptic, antisepsis is not aseptic. Of what use are antiseptics in tissues pullulating with infective material? Is it not a reminder of the legendary attitude of the ostrich, or the method of the indolent housewife concealing the filth upon the shelves and furniture by tawdry contrivances of paper or other cheap material? Of what avail if the field of operation or injured territory is properly aspeticized? Is not the bacteriologist content with a cotton plug to resist intrusion when preparing his culture tubes? If this method answers the exacting demands of the most delicate of all scientific studies, why should we not be content with an aseptic protective envelope?

Again, if the current trend of research is correct, why are investigators abandoning chemicals and seeking to recover nature's essences of immunization for practical application? To treat an individual already septic either locally or constitutionally with antiseptic drugs or chemicals in the doses tolerated is homœopathy as to effect, and may be aptly compared with veterinary practice if the dosage exceeds this. In the one instance the result would be *nil*, in the other it would increase human mortality without appreciably affecting that of the microbes—another instance of the vagaries of modern medicine.

For years, despite the exhibition of every new antiseptic introduced to the profession, we have been obliged to rely upon stimulants to sustain the powers of life and intestinal and local drainage, pending the self-immunization of the septic patient, and as yet there remains no case or series of cases with incontrovertible proof that recovery ensued consequent upon the administration of drugs alone. In a word, it has been a natural result achieved after the manner of bacteriological laboratory experiments in immunization. As yet, therefore, our great hope for the future looks to prophylaxis and not to cure; to asepsis and not antisepsis.

Reserve your antiseptics in injuries and wounds intentionally induced for the sterilization of surgical material, instruments, and the healthy tissues of the operator, and render the field of operation aseptic mechanically, if at all possible, and you will then aid and not handicap nature in her processes of repair. The dressings should be sterilized by heat when practicable, and if not the chemicals, after having rendered the ligature or suture material aseptic, should themselves be eliminated to prevent irritation. An ideal dressing fulfils the physiological and bacteriological indications mechanically when it is light, porous, absorbent, and aseptic, providing for drainage and support, and sufficiently occlusive to maintain the surgical cleanliness originally provided, thus insuring physiological rest, avoiding the necessity for frequent changes—a most important factor in the successful management of wounds.

If Hilton had done nothing else, he merits everlasting praise for the classical manner in which this was demonstrated in his "Rest and Pain." Surgery is not a question to be solved by chemicals, but essentially one of mechanics. In injuries and wounds not susceptible of permanent dressing, primary cleanliness, mechanically induced with a knife, scissors, curette, and brush, will in the majority of instances fare better with simple aseptic gauzes, wools, etc., and boiled pure water for the removal of detritus and discharges. This recommends itself at once as inexpensive, efficient, and not likely to interfere with nature's kindly help. Medicine and surgery are human institutions and therefore imperfect, and can approximate perfection only by utilizing the devices of nature and not running counter to them. Observe and then imitate her. Reserve your chemicals for specific ulcers, sinuses, suppurating cavities, where from necessity or from choice mechanical interference is either declined or impossible. Here they may be useful to disinfect or correct foul discharges, stimulate repair, anæsthetize

locally, or minimize septic absorption; but be sure that in trying to cure one evil you do not substitute another perhaps worse.

The ancients imagined they saw their enemies in the original four elements; let us destroy those in the air and in the earth by fire, and employ fired water as a convenient vehicle to dispense the blessings of a more enlightened pathology.

SOME PRACTICAL DEDUCTIONS FROM BACTERIOLOGICAL RESEARCH.

By GIVEN CAMPBELL, M.D.,

ST. LOUIS, MO.

In presenting this paper I have thought it best to consider it under two heads: first, to review some of the important facts of immunity and predisposition, and second, to see how we can apply these facts in the treatment of our patients. As is of course known, immunity is the name given to that condition of an animal's body which enables it to resist the attack of an infectious disease, being in contrast with predisposition or that bodily condition which must exist in order for the germ to grow at the expense of the body and thus produce that train of symptoms we call an infectious disease. The importance of these laws of immunity cannot be overestimated. Bacteriology is important to a physician in two ways: First, as an aid to diagnosis, and second, in enabling us to understand the laws of immunity. The first is fairly well understood by all of us and we find its knowledge useful, but the second is of vastly more importance and unfortunately is not so generally studied as its importance merits; and in my opinion a broad knowledge of the laws of immunity will go farther toward making a successful physician of one than any other one study. We will now first consider the circumstances under which the system is found immune, and then the direct mechanism of this immunity so far as known. We find immunity and predisposition running through the entire animal kingdom. The invertebrates are subject to certain diseases to which the vertebrates are immune, and *vice versa*. One germ is able to attack fowls and rarely mammals, another can attack mammals and not fowls. Herbivorous animals are predisposed to disease to which carnivora are immune.

Field mice and house mice each have diseases peculiar to themselves. Different races of men have immunities from different diseases, and individuals of the same race, yes, even of the same family circle, exhibit marked differences in their power to resist an infectious disease. Many of these differences seem easy of comprehension. To explain others, our knowledge is not sufficiently complete. The different immunities in the gross divisions of the animal kingdom probably depend on the great differences in the anatomy and physiology of these animals. Thus, frogs are immune to anthrax, the bacillus of which does not grow readily at a temperature so low as that of their bodies, but if a frog is immersed in warm water and its body temperature raised to a point near that of warm-blooded animals, it becomes susceptible to the disease; and again, if a hen, whose body temperature is higher than that at which anthrax best grows, be refrigerated before inoculation with anthrax, it takes the infection, while if not so chilled it is immune. This refrigeration may not be the only cause of the immunity, but is probably *a* cause, and many more such instances could be cited.

The most probable explanation of race immunity is that an immunity is built up in certain races of men by a process of hereditary selection. A certain race is exposed to the ravages of a certain disease. Certain individuals of that race are more susceptible to that disease; others are less so. Those most susceptible die and are not liable to leave offspring. Those more immune live and produce children who probably inherit the immunity of their parents, and those to whom the immunity does not descend die and the others live, and thus the disease constantly weeds out the susceptible and leaves the immune until a race immunity is built up. Thus we know measles is a mild disease with us, but some years ago the disease was conveyed to the Pacific Islands by a European child. The disease had never been known to exist there, and thus implanted on a virgin soil it became very virulent and was fatal in a large percentage of cases. The rise and fall of leprosy in Europe after the crusades is possibly dependent on the above cause. Of course, when a member of one race is transplanted to another race and climate, he loses the protection of his hereditary immunity, for he is exposed to a new set of diseases and his vital expectancy is lowered (witness the much higher mortality of our colored than of our white population). Before considering the direct mechanism of immunity let us consider some of our means of increasing or diminishing immunity. Immunity is produced or increased by having the disease in question. This usually confers an immunity lasting a variable time, but longer in a general infectious disease than in a local one, yet the remarkable fact exists that a local infection will often produce a persistent local immunity. Thus the ear of a rabbit may be inoculated with erysipelas and an infection produced which is limited to that ear, and while the other ear may be subsequently infected, the one in which the infection has taken place remains immune for a period of many months. Other means of producing an acquired immunity are: 1st. To inject gradually increasing doses of the toxin of the disease. 2d. Infection with a similar but milder disease, as vaccinia or rabies. 3d. To inject the toxin of some other germ. 4th. To inject the serum of an animal immune to the disease in question. Immunity may be lessened by, 1st, local injury to the body; 2d, by fatigue of individual; 3d, by change of body temperature; 4th, by modifying the reaction of blood or tissue; 5th, by increasing the virulence or numbers of infecting organisms; 6th, by injecting together with the organisms, first, certain chemical substances; second, the toxin of the germ itself; third, some other germ or its ptomain (and please notice that this other germ need not be a virulent one, nor its ptomain poisonous).

Passing on to the direct mechanism of immunity let me state that, while some other elements may enter slightly into its production, immunity depends chiefly on two factors: 1st, the presence in the body, naturally or acquired, of some chemical substance which increases the vital resistance of the body to the toxin of the germ; and 2d, the activity of the phagocytes in destroying the germs. Our reason for believing in the first of these factors depends on the following experiments, which have been frequently repeated and thoroughly verified: Ordinary sterile bouillon may be prepared, and a number of guinea-pigs procured; into each of several of these guinea-pigs one-tenth cubic centimetres of this bouillon is injected. No harm results in any way. Now more of this same bouillon is inoculated with the tetanus bacillus, and after growth has taken place the bouillon is filtered through a Chamberlain bougie, and thus all the bacilli are removed and nothing but substances in solution in the bouillon pass through the bougie. More of the guinea-pigs are now selected, and into each of these one-tenth cubic centimetre of this filtrate is injected.

All these guinea-pigs exhibit tetanic spasms and die. The bouillon has undoubtedly changed, and this new property is not due to the presence of the bacilli, for they are absent, but must be due to something in solution in the bouillon. A horse is now procured and his immunity to tetanus is greatly increased; the horse is what is called immunized. Take the blood serum from this horse and mix one part of it with five thousand parts of the filtered bouillon which, we have just seen, kills guinea-pigs in the quantity of one-tenth cubic centimetre. Take more of the guinea-pigs and inject into them of this mixture amounts varying from one-tenth cubic centimetre to one cubic centimetre, and even much more. It will be found that they have suffered no harm. Something then was present in the serum of this immunized horse which prevented the poison produced by the tetanus bacilli from affecting the guinea-pig. If the serum of a non-immune horse be mixed with the bouillon it does not prevent the bouillon causing death to the guinea-pig, so it must be something formed in the horse's blood during immunization. No bacteria are present in the horse's blood, and there is every reason to believe the substance in question is an albuminoid substance in the nature of an enzyme. Now we have seen that the symptoms produced by the filtered culture broth are very similar to those produced in an animal by tetanus itself, and, moreover, we can take the blood serum of an animal dead of tetanus, and after proving it free from the bacilli of tetanus inject it into a guinea-pig and produce death with the same symptoms, and, further, we can mix immune serum with this serum and thus neutralize its effects. The severity of the symptoms produced by the filtered bouillon and by the serum from an animal dead of tetanus varies directly as to the quantity injected, and does not so vary when inoculation with the bacilli takes place. So we may safely conclude that the bacillus of tetanus makes a toxin in the body of an animal similar to that which we have seen it make when grown in bouillon. And again, an animal suffering from the disease itself, if injected with the blood serum of an animal immunized to tetanus, recovers, or if injected before inoculation with tetanus proves immune, while a control animal similarly affected and without the serum of an immunized animal invariably dies; so there is every reason to believe that the animal owes its immunity to the serum from the immunized animal counteracting the effects of the poison—which brings us to acknowledge that immunity to a disease is accompanied by the presence of some substance in the blood and serum which counteracts the effects of the poison made by germ of that disease.

As to just how this immunity-giving substance acts we are unable to say. It certainly is not in any way a disinfectant or antiseptic, for tetanus bacilli will grow freely in highly antitoxic antitetanus serum. It is not a chemical antidote, for a mixture of toxin and antitoxin which is perfectly harmless to one animal is fatal to another kind of animal. It is not a physiological antagonist to the toxin, for its injection without the toxin produces no symptoms, nor does it in any dose produce symptoms opposite to those of toxin. Its action probably is to increase the vital resistance of the body in general and of the leucocytes in particular to the action of the poison. Once formed it persists in the immune animal and is not readily eliminated from the body; some of it is lost, however, for animals rendered immune while pregnant give birth to young in which the immunity is also present, and the amount lost continues probably to be replaced, and thus immunity is preserved.

The second factor in the mechanism of immunity is the activity of the phagocytes in destroying bacteria. The theory of phagocytosis is well known, and the profession is too well acquainted with it for me to give any lengthy description of it here. As will be remembered, the theory was first ardently supported and then just as completely dropped. As is quite often the case, truth lay in the mean between opposing opinions, and our best knowledge seems to indicate that phagocytes do engulf and destroy bacteria, and living bacteria at that, but that their ability to do so depends on the absence of the toxin of an organism which is pathogenic for the individual. When a capillary tube, closed at one end, and containing a culture of a non-pathogenic germ, is introduced under the skin, vast numbers of phagocytes enter the tube and in a short time have engulfed and destroyed the germs. If the tube contain a culture of a pathogenic germ very virulent to that animal, no such condition occurs, but on the contrary the phagocytes retreat from near the tube. This ability of the phagocytes to seek and destroy bacteria is called chemiotaxis, and the presence of the toxin of a pathogen paralyzes it, as do also the toxins of other bacteria if present with the one inoculated. This phagocytosis is not the only part the leucocytes take in immunity. There is good reason to believe they are the chief factors in producing the antitoxin, and Kanthack has reported some observations which, if confirmed, will prove very important.

He and Hardy added anthrax bacilli to a drop of frog's lymph and examined them under the microscope for four or five hours. The first thing noticed was that the eosinophilous leucocytes moved up to the bacilli and arranged themselves along them. Then the protoplasm of these leucocytes underwent rapid streaming motion and the cells discharged their coarse granules at the bacilli. These granules dissolved in contact with the bacilli and the bacilli were readily seen to become granular and disintegrated. All this time the true phagocytes have kept out of the way. But they now come forward, arrange themselves in a plasmodial mass around the bacilli, and the eosinophilous leucocytes retire. These phagocytes now engulf the fragments of the bacilli and finally separate and complete their digestion of the bacilli apart. The reason we believe that the phagocytic theory holds good, so far as stated, are: first, the phagocytes can be seen in the act of engulfing bacteria; second, these bacteria can be seen to disintegrate and disappear in the body of the phagocyte; third, destruction is greater when the animal recovers; fourth, bacteria to which phagocytes exhibit positive chemiotaxis are destoyed, and bacteria to which phagocytes exhibit negative or no chemiotaxis are much more virulent for the individual; fifth, the fact of chemiotaxis itself is a proof.

The argument has been advanced that while phagocytes do engulf and destroy bacteria, they do so only to those already killed by the disinfectant action which blood serum to some extent possesses. Against this it may be said: first, that when the struggle between the system and the germ is evenly matched, phagocytes may be seen to engulf bacteria, and these bacteria grow inside the bodies of phagocytes, the phagocyte being thus destroyed and the living bacteria being liberated; second, that phagocytes destroy germs in an animal whose blood serum has no such antiseptic action as that mentioned above; third, that in a non-immunized animal no phagocytic destruction of bacteria takes place, while after immunization the germs are readily destroyed, but the disinfectant action of the serum may be greater in the first case than in the second; and fourth, that bacteria which would be quickly destroyed if injected into the body live and grow if placed inside the body, but protected from phagocytes by interposition of an animal membrane.

We thus have two factors in the defence of the system: first, the presence in the body of an antitoxin, a chemical

substance probably albuminoid in nature, which increases the vital resistance of the body to the toxin of the germ and thus neutralizes all the bad effect of the disease (for, practically speaking, the only means the germ has of harming the body is through the toxins it can produce); and second, that after the effects of this toxin have been neutralized (and not until then) the phagocytes destroy the bacteria and thus prevent the formation of any more toxin; and that, besides the phagocytes destroying the bacteria, other forms of leucocytes are probably largely instrumental in forming the antitoxin. We saw above that blood serum has some bactericidal action, but this action is really much greater outside the body than in it, and probably plays a very small part in immunity.

Going to the second division of this paper, the practical application of bacteriological knowledge, I desire to preface my remarks by the statement of a fact, familiar to all of us but not often enough remembered. An individual's chance of having an infectious disease may be weighed by a balance which contains on one side the amount of his natural or acquired immunity, and on the other the number and virulence of the infecting organisms. As the balance leans, so do his chances incline. Now it is important to remember that virulence is more a habit of a germ than an integral part of it, and can be gained or lost by a germ in accommodating itself to the surroundings in which that germ is placed. To illustrate: The streptococcus pyogenes may be taken from a very virulent case of sepsis and inoculated on agar. Much difficulty may be experienced in getting it to grow, for the germ may have very thoroughly accommodated itself to growing inside the body, and to grow on dead matter or as a saprophpte requires a change of habit. Some of the individual germs of the culture, however, will be able to adapt themselves to the new conditions and these will produce others like themselves, and each succeeding inoculation will grow more easily until by a sort of hereditary selection the germ has completely changed its habit. If some of the germs had been inoculated directly from the case of sepsis to an animal, death would have surely followed; but if now we inoculate some of these same germs which have had to grow outside of the body for several weeks, we find that in so growing they have lost their ability to grow as a disease producer. They have ceased to be virulent. This virulence is lost gradually, and the longer the germ has had to live as a saprophyte, the more complete is the loss of virulence.

Now most of the bacteria occurring in the air or in the houses inhabited by healthy people are either by nature saprophytes or else have lost their habit of virulence to a greater or less extent; while those coming directly from an infection have this habit of virulence strongly on them, and we should be very careful to keep them where they can do no harm. But virulence is relative, and a but slightly virulent germ may produce infection if present in sufficient numbers or in an individual whose immunity is below par. As we have seen, the presence of the toxin of one germ paralyzes chemiotaxis against another germ, and in a sluggish condition of the intestinal tract we have a fruitful source of autointoxication, thus lowering general immunity; and it is for this reason that a saline or mercurial evacuant is so useful in the beginning of any infectious disease or when wound infection is feared. The inhalation of sewer gas has a paralyzing effect on the leucocytes, and it is from this diminished immunity rather than from any germs that are inhaled that people living in badly trapped houses are subject to infectious diseases. The presence of one germ or its ptomain, although both by themselves be harmless, often greatly increases the virulence of a pathogenic organism, and it is for this reason that mixed infections in phthisis and diphtheria are of more grave prognosis, and the reason why laboratory experiments and bedside experiences so often give different results is that mixed infection is present almost always in clinical work and never in laboratory experiments.

As to antiseptics and disinfectants in surgery, let me say in a general way that all disinfectants that we use act as irritants to protoplasm, and only as irritants to protoplasm; that bacterial protoplasm is as a rule more resistant to their action than the protoplasm of the animal tissues; that a non-irritant germicide has yet to be discovered; that inside the body and on clean open wounds much more harm than good is done by using germicides. It is impossible by any means short of the use of the cautery to kill all the bacteria in a wound, for all our agents act by combining with albumin, and the germ albumin is always present in much smaller quantities than the tissue albumin, and the distribution of the disinfectant is not selective but *pro rata*. In using such a disinfectant we kill, say, ninety per cent. of the germs, and in so doing prepare a layer of dead, non-resistant tissue for the remaining ten per cent. to grow on, and the germs we have left are able to grow faster in this unresisting location and do more harm than the one hundred per cent. could have done in healthy tissue with good resisting-power. It is a known fact that we can inject large numbers of virulent pus cocci into the uninjured peritoneal cavity and with no infection, but if an irritant be injected with them, or if the peritoneum be injured, or even if blood be injected at the same time, fatal peritonitis results. The best plan, then, is to use disfectants as strong as need be to render aseptic all substances which come in contact with the wound; to use fairly strong antiseptics in cleansing the skin of patient, but when it comes to the wound itself to use as little besides sterile salt solution as possible. The foregoing remarks apply to a clean-cut wound and not to a wound in which the vital resistance of the tissues has been already lowered by bruising or previous infection, for in this case we have already lost the vital resistance and no harm will be done by attacking the germ vigorously. To put the point more plainly, let us be sure when interfering in this struggle between the human system and the germ that in striking a blow at the germ we do not strike the system a more disabling one. Antiseptics in the intestinal tract are under somewhat the same conditions as those used in skin disinfection, and there is some reason to believe that very slightly soluble substances may be used with benefit in intestinal antisepsis. As to the treatment of the throat in diphtheria, the membrane should be kept removed, for it is the source and the only source from which the toxin comes, but the membrane should be removed by some agent which attacks dead matter and does not irritate living tissue. Such agents we possess in the digestive ferments, such as papain and trypsin.

Recent experiments have proven that the vaginal mucus of healthy women has a very marked action in destroying pathogenic and pyogenic bacteria, thus rather arguing against the too frequent use of the douche in the puerperal state, and the above fact may explain the success our gynæcologists are having in their operations.

The thermal death point of the gonococcus is quite low, a temperature of 40° C. (104° F.) killing it in a short time on media, and it is probably partly for this reason that urethral irrigations are so useful when given as hot as can be well endured. Other reasons might be cited to explain the success of hot irrigations, namely, that the action of most chemical disinfectants is greater in hot solutions, and that heat is useful in most inflammatory conditions, whether in-

fectious ones or not. On the other hand, it might be stated that a man with gonorrhœa may suffer from a fever of 105° F. or over and the gonorrhœa persist, although the discharge is usually lessened thereby.

Before leaving the subject of disinfectants, a plea should be made for more sunlight. Direct sunlight is probably as good a disinfectant as 1 to 2,000 bichloride, and it acts at low temperatures.

A new avenue for error has been recently discovered in searching for the tubercle bacillus in urine. It depends on the fact that the smegma bacillus, which frequently finds access to the urine, stains capriciously, and frequently cannot by any staining peculiarity be distinguished from the tubercle bacillus. The error may be minimized by rendering the meatus as clean as possible and then examining the urine drawn through a clean catheter.

The tetanus bacillus is known to be unable to grow in the presence of oxygen. Its spores are often found in the earth, and it is for this reason that a punctured wound produced by something which has been in the soil (as a rusty nail) is so apt to produce tetanus.

The micrococcus lanceolatus can produce pneumonia only when it gets down to the air vesicles. It cannot reach there if the cilia lining the respiratory tract are in good condition; but chilling and cold air paralyze ciliary motion, and it is somewhat for this reason that pneumonia follows exposure to cold, and especially breathing very cold air through the mouth. In speaking of diphtheria, I may say that its antitoxic treatment has almost passed out of the hands of the bacteriologist and belongs now to the clinician. I may say, though, that a sufficient number of units should always be used (rarely less than fifteen hundred), and these in as concentrated a serum as is obtainable. Much time can often be saved in the diagnosis by an examination of a cover-glass preparation from the throat, and the technique is very simple.

As to the antitoxic treatment of pulmonary tuberculosis it may be said that there are greater difficulties in the way than in diphtheria. Tuberculosis is not a local disease, and the bacilli occur in little patches or tubercles. Each of these is walled in to some extent by fibroid or necrotic tissue. Now, when the antitoxin is used, the toxin is neutralized and the symptoms improve; but the walls of the tubercle prevent the phagocytes from getting in to attack the bacilli and so they are not destroyed, and when the antitoxin is stopped their toxin is no longer unneutralized and the symptoms recur. In miliary tuberculosis these tubercles are not so thick-walled and many of the bacilli are not in tubercles, and in this disease antitoxin seems to be somewhat more beneficial. Perhaps when tubercle antitoxin is improved and its antitoxic strength is more often definitely stated in units, we may use it with more success.

Considerable help can be obtained in infectious diseases by a cover-glass preparation of the blood. Malaria will of course be recognized, and a study of the degree of leucocytosis present aids as much in prognosis.

The blood test for typhoid is attracting much attention just now. It depends on the fact that when but slightly virulent typhoid bacilli from a culture tube are placed in some blood serum from a case of true typhoid fever they lose their motility and tend to cling together in clumps, or agglutinate. While typhoid serum has this property to a greater extent than other blood serum, serum in the normal individual and in some other diseases possesses the property to a lesser degree, and to make sure the case is typhoid it seems necessary to dilute the serum in the proportion of sixteen to one and to form our opinion from the reaction under these conditions of dilution. The reaction is not usually elicited until the disease has been present some days, and dried blood does not seem to give the same satisfaction as does the diluted serum.

201–203 West [illegible]

SURGICAL CASES IN GENERAL PRACTICE.[1]

By G. W. KING, M.D.,

HELENA, MONT.

Case I.—J. P——, miner, aged thirty-five, fell a distance of twenty feet, his head coming in contact with a stull (timber) in the descent. The only visible signs of external injury were found to be a scalp wound, one and one-half inches in length, beginning one-half inch to the right and the same distance below the occipital protuberance. No evidence of fracture could be found. The symptoms of profound shock were present; the patient being unconscious, with moderately dilated pupils, muscular relaxation, irregular respiration, coldness of extremities, etc. The treatment adopted was that for shock in general, viz., warmth to the extremities and epigastrium, hypodermic injections of strychnine repeated according to indications. Reaction came on slowly twenty-four hours later; consciousness returned, followed by rapid improvement in all the symptoms; and at the end of the seventh day there remained no appreciable signs of intracranial injury. The case was kept under observation, and the possible dangers that might result from imprudence on his part were fully explained to the patient. On the twenty-second day after the injury there was a sudden onset of symptoms pointing to severe cerebral complication; the temperature was 101° F., with great disturbance of the sensorium, which soon merged into a condition of coma. On the following day a trephine opening was made at the site of the injury, the dura was incised, and a careful exploration of the underlying portion of the brain was made with an exploring needle. Nothing definite was learned from this source, and as the condition of the patient did not permit of further search the operation had to be abandoned without discovery of the lesion. There were encouraging symptoms immediately following the operation, consciousness returned, the temperature fell to the normal. This apparent relief, however, proved to be but temporary, continuing about fourteen hours, when coma again supervened and death occurred the next day. It is much to be regretted that an autopsy could not be obtained to demonstrate the location and nature of the lesion. Doubtless the relief obtained was due to the lessening of intracranial tension, and possibly had the skull been opened at another point permanent good might have been accomplished.

These cases are instructive, inasmuch as the question of trephining in the absence of localizing symptoms is a debatable one. The indications of brain lesions following head injuries are in many instances too obscure to be of any value as to the exact location of the trouble; hence the operator should be prepared to make one or several openings in the skull if necessary.

Case II.—J. W——, farmer, aged sixty-two, received contusions of the frontal bone by accidentally falling against the edge of an open door. The scalp being uninjured, little attention was given to the injury at the time. Subsequently a swelling appeared over the bruised area, gradually increasing in size; but, accompanied by little if any pain, it was still neglected until it had reached dimensions sufficient to cause anxiety as to its nature. When he presented himself for treatment, the appearance of the swelling, to-

[1] Read at a meeting of the Montana State Medical Association, Helena, April, 1896.

gether with the history of a contusion, made the diagnosis of abscess with probable necrosis of the outer layer of the frontal bone the correct one. The abscess was evacuated and the conditions were found as anticipated. The wound was dressed and the patient put

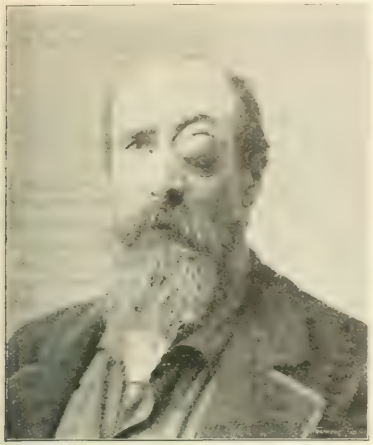

Fig. 1.

upon the "mixed treatment" as a tentative measure. It was impossible to carry out direct and continuous treatment, as the case could be seen only at irregular intervals. Three months later a free opening was made in the scalp, revealing a large cavity in the outer layer of the frontal bone. The incision was kept open by gauze packing, and time allowed for exfoliation of the necrosed bone tissue. The administration of iodides was, however, continued. As there were no symptoms of involvement of the dura, nothing further was attempted. The slow progress of the disease being recognized, it was hoped that separation of the necrosed bone would eventually take place.

Nothing worthy of comment occurred until the early part of January, 1896, some six months later, when summons was received to visit the patient immediately, as he had suddenly become insane and could with difficulty be controlled. The case did indeed look unpromising. The history of the attack as stated by those present was that upon the evening previous, without apparent cause, he had become delirious; he became unable to recognize members of his own family, constantly endeavored to get down upon the floor in search of imaginary objects, and was very restless. There was no paralysis of speech or motion. Examination of the necrosed portion of the skull showed that the disease had progressed with probable infection within the cranial cavity. As soon as arrangements could be made for operation, the trephine was applied and an abscess opened between the inner and outer tables; the opening was enlarged with the rongeur forceps, and all of the diseased bone removed. The dura was not incised, as it presented no evidence of being invaded by the disease process. The large cavity remaining was packed with gauze and the patient put to bed. The immediate effect of the operation was a subsidence of the extreme irritation, the patient being quiet, though his intellect remained clouded. The wound progressed favorably and his general condition improved rapidly. Moderate doses of iodides had been used from the beginning. It was now decided to try larger doses; accordingly sixty grains three times daily was ordered. The beneficial results of this plan of treatment were soon apparent, and at the present time the patient is relieved of the cerebral complication and is in a fair way to recovery. The prognosis is of course a matter which time alone can demonstrate.

Case III.—Prospector, aged fifty-four, of dissolute habits, came in from the hills for treatment of a dropsical effusion in the lower extremities. The effusion was found to be due to an attack of nephritis, from which he recovered in due time. The left eye had been sightless for ten years, with no history as to the cause. Some months later he consulted me for what he supposed was an inflammation of the lower lid of the unsound eye. The appearance of the part was not unlike that of a case of aggravated trachoma. Treatment was directed toward allaying the irritation, but without producing the slightest effect. It soon became evident that there was something more than simple inflammation to deal with. The rapid increase of the growth, its general appearance and location, left little doubt as to its malignant nature. Within two months from the time of the first inspection it had attained the size shown in the illustration (Fig. 1) here presented. Incidentally it may be mentioned that a medium-sized lipoma situated in the occipital region had been growing for a long time. The accompanying illustration (Fig. 2) defines its situation and appearance. Both tumors were removed at one operation, for the lipoma a simple excision only being necessary. The removal of the orbital tumor required more care; the eye was enucleated, and with it the contents of the orbit. Hemorrhage was of course very free, but easily controlled by packing. Figs. 3 and 4 represent the patient as he appeared six weeks after the operation.

An interval of quiescence followed the removal of the orbital tumor, but, as the sequel proved, the operation was by no means curative. Recurrence is the rule with sarcoma, especially that of the melanotic variety. The complete removal of all infected tissues within the orbit is very difficult, if not impossible. The astonishing rapidity which characterizes the secondary growths in this form of sarcoma is their most distinctive feature. In the after-treatment of the case strict attention was given to cleanliness, and the application of arsenical paste was made to all suspicious

Fig. 2.

points. Notwithstanding these precautions, the disease appeared in the upper angle of the orbit and steadily advanced until the growth had reached one-half its former size, when a second operation was undertaken and thorough removal again effected. The

upper eyelid was included in the growth. This procedure served to hold the disease in check for a limited time only. Its next appearance was in the lower part of the orbit and its growth was progressive. For a third time the knife was applied and all visible por-

Fig. 3.

tions of the tumor were taken away. The after-treatment was careful and thorough, yet unavailing. Opportunity was taken to try some of the stronger caustics —chromic acid and hydrofluoric acid; the latter gave the best results. It was used with caution, the most prominent parts of the tumor being merely touched with a glass rod previously dipped in the acid. Evidence of general infection was now unmistakable, the patient's nutrition became defective, and he lost strength rapidly. All attempts to do more than relieve the most urgent symptoms were abandoned. The actual cautery had been tried during the progress of the case. The patient lingered in this condition for two months, finally yielding to the inevitable one year from the date of the first operation.

From the experience gained in the treatment of this case, I believe that in attacking like tumors all the soft tissues surrounding the orbit should be removed without regard to cosmetic results, which are but secondary considerations when we are dealing with a disease so formidable.

Case IV.—Atheromatous tumor of the scalp. This case is cited, not that it possesses any features of special interest, but rather as a record of the successful use of the infiltration method for securing local anæsthesia. The tumor was of considerable size. The following formula was used:

℞ Muriate of cocaine	gr. ss.
Muriate of morphine	gt. ½s.
Chloride of sodium	gr. i.
Distilled water	℥i.

About thirty minims was injected in the line of the proposed incision. No pain was experienced during the operation, including the placing of the sutures. This method seems to be safe and efficient, and is therefore recommended for further trial.

Cases V. and VI.—At a former meeting (1894) I presented to the association a patient upon whom I had operated for the radical cure of hernia. When last examined, some three months since, the parts were found in good condition, firm and solid. He wears no truss, is doing heavy work without any inconvenience whatever. At this time I have two more cases to record. A carpenter, aged thirty-five years, had left inguinal hernia of fifteen years' standing; it was imperfectly controlled by a truss, hence a constant menace to life from danger of strangulation. By an incision over the inguinal canal the inner ring was exposed and then closed as nearly as possible with kangaroo-tendon sutures. Primary union followed.

The second case: Prospector, aged fifty-four years, had recent double inguinal hernia complicated upon the right side by hydrocele. The hydrocele was treated by incision and the hernia of the same side operated upon in the usual manner. The result has been good; the only thing to be regretted was the use of silkworm gut for the buried sutures, which subsequently caused so much irritation as to necessitate removal.

Before leaving the subject a brief reference to two cases of strangulated hernia may be of interest at this time—the one neglected and in a hopeless condition; the other seen early and amenable to treatment. When one is familiar with the operation for hernia it is always an unpleasant experience to be confronted with conditions like these: An elderly man with reducible hernia of many years' duration, after a prolonged debauch, during which it became strangulated, at the last moment called the physician. The strangulation had existed seven days and the patient was of course beyond surgical aid. An incision over the tumor revealed a gangrenous and sloughing gut. It was seen at a glance that nothing further could be done, and the patient died a few hours later. The other case illustrates a plan of treatment which, while not always safe to pursue, may under favorable circumstances be adopted: Middle-aged man, right inguinal hernia retained by a truss. Having returned home late one night, he removed the truss and the hernia slipped down. Being unable to return it in the accustomed way, he sent immediately for assistance. Not being an advocate of taxis except to a limited extent, and finding that the tumor did not yield to careful manipulation, I decided to elevate the hips and give a hypodermic injection of morphine, as no very urgent symptoms were present. The patient was informed that an operation would be necessary in the morning, provided the intestine had not returned. Upon the morning visit it was found

Fig. 4.

that under the relaxing effects of the morphine aided by position the hernia had become replaced with ease. Probably had the necessary assistance been at hand, the operation would have been performed at the first visit. There is no doubt that many cases could be

successfully treated in this way, if forcible attempts at reduction were avoided. The irritation caused by rough handling adds to the difficulties of the case. Palliative measures should not be persisted in if after a reasonable time it should appear that no progress is being made. Under such circumstances there is but one thing to do—operate, close up the internal ring, and cure the patient.

Case VII.—Epithelioma of scrotum and penis. Miner, aged forty years, first noticed a small sore on the outer side of the foreskin, gradually increasing in size without induration or swelling. Some weeks later a similar sore appeared upon the right side of the scrotum. At this time he presented himself for treatment. There was no history of venereal infection. An accurate diagnosis could not be made from the appearance of the parts. No enlargement of the inguinal glands could be discovered. Local treatment was applied and the patient put upon specific remedies as a test. No improvement followed; on the contrary, the disease steadily advanced. The health of the patient remained good. Several weeks were spent in vain endeavors to bring about healing of the sores. At this time the peculiar appearance of the one situated upon

Fig. 5.

the scrotum created the suspicion of epithelioma. A section was placed under the microscope and the suspicion verified. No time was lost in removing a portion of the scrotum, going wide of the disease. Circumcision was also performed, sufficient tissue being taken to guard against recurrence. The parts healed perfectly, leaving no trace of the growth; and up to the present time the patient has remained well.

Cases VIII. and IX.—Talipes equino-varus. The treatment of talipes is occasionally forced upon the physician. While it is true that these cases are perhaps better cared for in institutions devoted to that branch of surgery, much may be done and quite satisfactory results obtained, if the requisite time and patience can be secured. To illustrate the method and results of treatment the following cases are cited:

A boy, aged seven, for congenital talipes equino-varus had received treatment from infancy, but probably had not been kept strictly under medical supervision. He was wearing heavy steel braces entirely unsuited to the case. His feet were tender from the excoriations caused by pressure of the instruments over the bony points. Indeed it was with the greatest difficulty that he could walk at all. The deformity was such that the weight of the body was thrown upon the outer side of the foot, with the heel drawn up by the contracted tendons (Fig. 5). Under anæsthesia tenotomy of the

Fig. 6.

Achilles tendons of both feet was done, and plaster-of-Paris dressing applied while the feet were held in an overcorrected position. After the tendons had healed a Scarpa's shoe was adjusted and worn until the patient was able to control his limbs sufficiently to wear an ordinary shoe well stiffened at the ankles (Fig. 6). The after-treatment in this case was faithfully carried out by the parents and materially aided in the result.

Girl, aged six years, had congenital talipes equino-varus, more aggravated in type than in the preceding case; she was walking upon the dorsum of the feet. The accompanying illustration (Fig. 7) indicates the position. Attempts had been made to correct the deformity without operation, but as a matter of course had failed to influence it in any degree, and owing to the pain and discomfort attending this treatment it had been abandoned. Evidently the first step in the treatment was the division of the contracted tendons. Accordingly tenotomy of the Achilles tendon with a thor-

Fig. 7.

ough division of all the tendons and fascia upon the inner side of the foot by open incision was the opera-

tion chosen. The corrected position was maintained by plaster-of-Paris dressing. The wounds healed without suppuration. The plaster dressing was followed by the Scarpa's shoe at the proper time. This treatment was continued as in the other case, with the result shown in the illustration (Fig. 8). Since that time there has been some degree of relapse in the left foot due to neglect of the parents in supplying her with proper shoes.

Case X.—Necrosis of the crest of the ilium. This history is valuable, illustrating as it does the ineffective employment of medicinal treatment under a mistaken

Fig. 8.

diagnosis in a case strictly surgical: A man who formerly had been a miner, aged forty-five years, complained of shifting pains in the back, radiating from the left hip and extending down the thigh. There was no local tenderness, but there was some stiffness of the muscles of the back when he attempted to arise. Nothing abnormal could be discovered in connection with the heart, lungs, kidneys, or abdominal viscera. The diagnosis of rheumatism had been made and the patient put upon antirheumatic treatment. Taking into consideration the frequency with which miners past middle life contract rheumatism, and also the symptoms and history presented in this instance, it is quite probable that had he been examined by one hundred physicians there would have been no dissenting opinion. The futility of medicinal treatment was perplexing, for it is usually possible to alleviate if we fail to cure. The patient visited the Hot Springs in the hope of obtaining relief from the constant pain, but without success. During the following months but little change took place in his condition. Treatment was discontinued and the case passed from observation for the time. When next seen he was confined to bed and had a temperature of 102° F. A large circumscribed swelling had appeared at the left of the spinal column, about the level of the last dorsal vertebra. Fluctuation being present, an incision was made over the tumor and a quantity of pus evacuated. Relief of pain was immediate. By the use of a probe search was made for diseased bone. After prolonged effort the location of the trouble was found to be at the posterior part of the crest of the ilium. Free discharge from the abscess cavity took place, eventually forming a sinus which continued to discharge for six months. An operation had been suggested from the first but had been persistently refused. Seeing no prospect of permanent relief without it, he at last consented. Free incision was made and a thorough removal of the necrosed bone accomplished. Prompt and satisfactory healing took place, and in a few weeks the patient was discharged cured.

Remarks.—The cases herewith submitted are but a type of those constantly coming within the observation of the busy practitioner. What shall we do with them? In the larger cities the physician can refer them to the hospital surgeon without assuming the responsibility of treatment. In the field which we occupy this cannot be done, and we are forced to recognize the fact that medicine and surgery are so inseparably connected in actual practice that he who would be the most successful in the future must acquire a fair facility in operative work. The question of what to do in a given case is not more important than how it is to be done. Generalization will not do; a definite plan of procedure must characterize every operation, no matter how trivial. To choose the best methods from the vast amount of surgical literature available is not always possible, as in emergencies when action must necessarily take the precedence. What surgical knowledge we possss must therefore be practical. I am aware that our opportunities for perfecting technical skill are limited, but if we choose to employ a portion of our leisure moments in training the hands to familiarity with the use of instruments, we shall become something more than mere "bunglers" in the art of operating. The progress in surgery which marks the present era has in no wise limited the field of the general practitioner. It has, on the contrary, enlarged it by enabling him to become more proficient by being more scientific in his attainments and consequently more successful in practice. To undertake the treatment of surgical cases is not a matter of choice but a necessity. The care of wounds and all the various injuries that may occur are but part of our daily duties. The only limit which the true physician is compelled to recognize is that which exists in his own ability to observe, to investigate, to acquire.

THE NEED OF INSPECTION OF THE EYES OF THE CHILDREN IN THE NEW YORK PUBLIC SCHOOLS.

By WILLIAM MERLE D'AUBIGNÉ CARHART, M.D.,

NEW YORK,

ASSISTANT SURGEON, MANHATTAN EYE AND EAR HOSPITAL; INSTRUCTOR IN DISEASES OF THE EYE AND EAR IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL; OPHTHALMIC AND AURAL SURGEON, BELLING HAND HOSPITAL, BROOKSIDE, N. Y.

The accompanying figures, showing the percentages of ages of one thousand school children recently examined by me, are suggestive. Two factors are probably operative in causing this steady decrease in attendance from the 24.1 per cent. of the ages of eleven to twelve, to the 2.4 per cent. of the ages of seventeen to eighteen. Some children are withdrawn from school to assist in supporting the family, and the parents of many others are indifferent about graduation, thinking the advanced grades not essential for the success in life of their offspring. This factor applies, however, mainly to the older scholars, while my figures show that children begin to drop out before they are old enough to become wage earners and long before they have reached the advanced grades.

Attendance by ages of one thousand school children: From five to ten, 42.3 per cent.; eleven to twelve, 24.1 per cent.; thirteen to fourteen, 19.5 per cent.; fifteen to sixteen, 11.7 per cent.: seventeen to eighteen, 2.4 per cent.: total, 100 per cent.

Children leave school in many instances because high refractive error makes study unendurable for them. Attention to lessons and close application to study are difficult, if not impossible, when there is

any considerable refractive error left uncorrected in the eyes. When we see a healthy boy or girl, bright and active on the playground, but restless, inattentive, and careless in the schoolroom, we may be confident that the child has imperfect eyes. Such children cannot concentrate their attention on their books for any length of time, in consequence of the strain upon the ciliary muscle in the effort to maintain visual acuity. They are apt to be called stupid and lazy when they fall behind in their studies, and because they are bright and quick about everything except their lessons they may be considered mischievous and bad. Often the condition of the eyes is not brought to the notice of either teacher or parent, since not all such children complain of supra-orbital headache. Many of them merely feel tired and listless after school hours, and are restless and inattentive while at school.

Children are markedly tolerant of refractive error. During my school examination I found many cases of children struggling along without glasses, when the Javal ophthalmometer showed several diopters of astigmatism; and also not a few who were wearing lenses for nearsightedness when they were really not myopic at all—a condition of affairs which no adult could endure for a day. But tolerance is not immunity. Every such case presented a striking picture to the ophthalmoscope: a retina covered with dilated blood-vessels and congested over its entire area; an optic disc infiltrated and swollen so that its outline was indistinct and its color grayish; and surrounding the disc a conus, broad and deep, through which the sclerotic tissue could be seen to share in the general congestive infiltration. Externally many children showed congestion of the palpebral and bulbar conjunctiva, with blepharitis marginalis, and subjectively photophobia and asthenopia were not uncommon.

These children suffer from congestion and infiltration of the eye and its appendages, due to continual strain of accommodation at close work. The soft and elastic tissues of the immature eye of childhood yield gradually both at the posterior pole and at the anterior surface, and so we find, in addition to symptoms of retinal irritation, an alteration of structure, which results in the lengthening of the optic axis and the development of corneal astigmatism. I have elsewhere[1] given statistical tables of the refraction of one thousand school children, and I will here merely refer to three significant items. Astigmatism of all varieties increased, from 35.65 per cent. at the ages of five to eight, to 61.69 per cent. at the ages of thirteen to eighteen. Myopia and compound myopic astigmatism combined increased, from 2.61 per cent. at the ages of five to eight, to 6.43 per cent. at the ages of thirteen to eighteen. Hypermetropia decreased, from 53.48 per cent. at the ages of five to eight, to 22.81 per cent. at the ages of thirteen to eighteen. Space does not permit further reference, but even the three citations I have made will prove the elongation of the eyeball and the alteration of the curve of the cornea caused by distention.

Dr. Ingalls has said: "It is a waste of time to send a child to school when his eyes are not in proper condition to do the work assigned." More than that, permanent injury to the eyesight is the penalty of the violation of nature's laws. Not only is the existing refractive error aggravated by the efforts of the child to keep up with his more fortunate comrades, but inflammatory and degenerative changes are easily engrafted upon retinal irritation if the strain is persistent. Many a child also is urged beyond his physical limitations, until his health gives way in a general nervous collapse. A high authority has said that "eye strain in childhood means neurasthenia in the adult." This is certainly true in many instances.

[1] New York Medical Journal, April 17, 1897.

The schools have thus far been able to do little toward recognition of ocular defects, and so children, handicapped by high refractive error, have received much the same treatment as those with perfect eyes. Is it not a natural consequence that children begin to leave school at an early age and continue to drop out in ever-increasing numbers as they grow older? A beginning at school inspection has been recently made in several cities. Dr. Frank Allport, in the June number of the *Review of Reviews*, gave a description of the plan he has put into effect the past three years in the schools of Minneapolis. He has examined, with the help of the principals of the schools, 23,049 school children, among whom he found "7,093 defectives," the parents of whom were notified of the state of their children's eyes and advised accordingly. A somewhat similar plan has been carried out by Dr. Harlan and Dr. Wood, in the schools of Baltimore, where nearly 53,000 children were examined and 9,051 were found with abnormal vision. Recently the children in the schools of Bridgeport, Conn., were examined personally by my friend, Dr. Miles, with similar results; and one year ago I went over the public schools of Peekskill, the published tables of which examination I have already referred to in this article.

Problems of school inspection are of particular interest at the present time, since it is proposed to institute a thorough examination of the eyes of the children in the New York schools. The need is urgent, as I think I have shown, and now it remains for the greatest city on the continent to do this work intelligently, carefully, and scientifically. How this work will be done is a matter for consideration, but as an ophthalmoscopic examination of the eye is essential for any accurate knowledge of its condition, it would seem hardly feasible to utilize Dr. Allport's plan to any considerable extent in depending upon the assistance of the teachers of the schools.

It is neither desirable nor necessary that treatment be instituted by the proposed health-board inspectors, and therefore no elaborate refraction test rooms need be established. Cards of notification of ocular defect could be issued, and the necessary treatment would then properly be carried out by whatever oculist the family physician recommended. In this way there need be no interference with the practice of our professional brethren, and little temptation for the inspectors to attempt to build up a private clientèle. In order further to avoid unpleasant complications and also to save time, it might be well to omit any children who had been within one or two years under the care of any competent oculist. The number of school children in New York is enormous, but a corps of twenty inspectors should be able to cover the ground in two years, according to my estimate, and of course all could be examined within the year by double that number of inspectors if such a course were deemed necessary.

Typhoid Fever.—

℞ Creosote carbonate ..... ʒ xix.
Thymol ..... ʒ vi.
Menthol ..... ʒ iij.
Eucalyptol ..... ʒ viss.
Alcohol, commercial ..... q.s. ad ℥ viij.
M. ft. solutio. S. This is stock solution.

To make an emulsion from the above, in order to facilitate administration, use:

℞ Solution creosote carbonate compound ..... ʒ v.
Powdered gum arabic ..... ʒ iss.
Pure water ..... ʒ iv.
M. S. One teaspoonful every three hours in a wineglass of water, followed by a drink of water.

—T. W. Simmons, *Va. Med. Semi-Monthly.*

GUAIACOL IN CHRONIC COUGHS.

BY ADOLPH GOLDHAMMER, M.D.,

ALTHOUGH guaiacol is recognized as a valuable antituberculous remedy, its value in the treatment of chronic coughs of various character is not so well established. Having had remarkable success with this drug in many cases of cough of long standing, in which no tuberculous element could be recognized, I venture to suggest its use in every case of cough of more than two weeks' duration.

I was first led to the employment of this remedy in a case in which the cough had existed for two years and in which numerous other drugs had been used without avail. Under the use of guaiacol daily for one month, the cough disappeared and the patient has been entirely free from it ever since—a period of ten months. The details of this case will be described farther on. Since then I have used guaiacol in every case of cough of more than two weeks' duration, irrespective of origin, with unvarying success. I have found it of decided value in cases of chronic bronchitis with or without asthma. In the chronic coughs of children guaiacol has proved especially beneficial. I have employed it even in several cases of whooping-cough with astonishing results. The paroxysms were rendered less severe and less numerous, and the duration of the attack was cut short to two or three weeks. For children of a delicate temperament, who have a poor appetite and who occasionally have a slight cough, guaiacol is a very valuable remedy. It stops the cough entirely in a short time, increases the appetite, and causes the patient to gain flesh. It is my opinion that many a case of incipient tuberculosis could be prevented, if every old cough, no matter how slight, were treated by the administration of guaiacol. I therefore strongly recommend it as a prophylactic against tuberculosis; but I desire especially to emphasize the fact that guaiacol is of immense benefit in cases of cough, not acute, in which no tuberculous element exists. In acute coughs, guaiacol does not act beneficially and should not be employed. I have carefully recorded thirty cases of cough of varied origin and description, in which no distinct tuberculous element could be recognized, and in which I employed guaiacol as a remedy. In twenty-six of these cases the cough disappeared entirely after the drug was used for periods of from two to six weeks. In the four remaining cases the cough was decidedly improved, although not entirely cured. Eighteen of these cases were in children under ten years, nine were in adults, three of whom were over sixty-five years of age. The details of a few of these cases follow.

CASE I.—Mrs. H——, aged sixty-two years. The patient's appearance was quite robust and her color good. She had been coughing for about two years almost every day. She very frequently had severe coughing-spells during the night. Sometimes with the coughing-spells she had severe pain in the back and over the sternum. Her appetite was fairly good; she never sweated in the afternoon; she had never spit up any blood. Her pulse was 72; respiration, 26; temperature, 98.6° F. She suffered from dyspnœa on going up or down the stairs. Physical examination showed the breathing somewhat loud, with the expiration somewhat prolonged and sibilant, and sonorous râles. Percussion gave a hyperresonant note. I diagnosed the case as one of chronic bronchitis with asthma. She told me that she had been treated by many different physicians and had taken all sorts of cough mixtures, sometimes with temporary improvement, but had received permanent relief from none. It was in this case that I first determined to try guaiacol. She began by taking five drops three times a day, in milk, the dose being gradually increased until she took twelve drops three times a day, at the end of three weeks. She noticed decided improvement in her cough after she had been taking the drops for four days; in ten days the cough was very slight and not troublesome; at the end of four weeks the cough stopped entirely and has not reappeared now for ten months.

CASE II.—L. M——, aged twenty-eight months. The mother informed me that the child had had an attack of whooping-cough when eighteen months old and had been coughing more or less since. The appetite was not good and the child was kept awake much at night by the cough. I found signs of chronic bronchitis on examination. I administered guaiacol, beginning with two drops and increasing to four drops, three times daily. At the end of two weeks the cough had entirely disappeared, the child slept well and began to look much healthier, and gained flesh. The child has coughed very little since.

CASE III.—Sidney R——, aged eight years. He had always been a delicate child and his appetite was never very good. Occasionally he had slight coughing-spells; sometimes he coughed very severely. His mother said that the cough had lasted several years. On examination I found that he was chicken breasted, but otherwise there was nothing to account for the cough. He took guaiacol for six weeks, beginning with three drops, gradually increased to seven drops thrice daily. He also took wine and cod-liver oil. His cough disappeared entirely, his color is now ruddy, and altogether he is much livelier and brighter than he used to be.

CASE IV.—Mr. M. G——, aged seventy-one years. For many years he had been suffering from a severe chronic bronchitis with frequent very distressing asthmatic attacks. He had taken many medicines, but he said that they always made him worse and sometimes they nearly choked him. Finally he refused to take any medicine whatever, although he suffered severely, and I had to use much persuasion to get him to try guaiacol. After he had taken the drug for a week his cough was immensely relieved and the asthmatic attacks were not so frequent and severe. The old gentleman is so delighted with the remedy that he now absolutely refuses to stop taking the "devil's drops," as he calls them, on account of the taste I suppose. He still coughs a little, but his cough is slight and not troublesome.

CASE V.—Sadie D——, aged six years. This patient had an ordinary attack of whooping-cough. During the first week I gave her tincture of belladonna and quinine, the drugs I ordinarily employ in such cases. There was not much improvement, and she had severe paroxysms of coughing and vomited frequently. During the second week I thought I would try guaiacol, and I was much astonished at the result. The cough improved very much after two days' use of this drug and after seventeen days there was no sign of the cough left, although I had used no other drug than guaiacol.

As regards the administration of guaiacol, it is very well borne in the majority of cases, if well diluted with milk, although it has a nasty taste. It very seldom deranges the digestion. Those who cannot bear its odor or taste can easily take it in capsules. I usually begin by giving five drops three times a day, in milk, to an adult. The dose may then be increased one drop daily up to fifteen drops three times a day. A child one year old can take two drops at a dose to start with, and then the dose may be increased slowly to four or five drops.

[redacted]

Progress of Medical Science.

The Treatment of Tuberculosis with Tuberculin.—Spengler (*Deutsche medicinische Wochenschrift*, No. 36, 1897) makes an interesting contribution to the subject of the treatment of tuberculosis with Koch's new product. He states that tuberculin has never been entirely discarded at Davos since it was first used nearly seven years ago. He now relates his later experiences with the present modification. There were treated with tuberculin fifty-nine patients, twenty, however, only from three to seven weeks, in the absence of colleagues under whose care they were. The whole number received nine hundred and twenty-two injections, with a total of one hundred and eighty-one cubic centimetres. In not a single instance was an untoward effect noted, although at times there was pronounced reaction. All cases of tuberculosis in which fever was absent were considered suitable for treatment; that is, those in which the rectal temperature did not exceed 37.5° C. (99.5° F.) and the temperature of the mouth 37.2° C. (99° F.). Axillary temperatures, especially in emaciated tuberculous subjects, cannot be relied upon unless the thermometer has been exposed for twenty minutes. Exceptionally, cases in which the rectal temperature exceeds 37.7° C. (99.9° F.) may be submitted to the treatment when careful examination of the sputum demonstrates the absence of marked mixed infection. The injections may be made from the initial dose up to one milligram every second day, in doses of from one to six milligrams every third day, in doses of six to twenty milligrams every fourth or fifth day. The latter dose may be reached if the remedy is well borne and its use is unattended with marked exhaustion and loss of weight or profound anæmia. Then, according to circumstances, from five to ten milligrams are administered weekly, and later every seven or ten days. When the larger doses are used, longer intervals are necessary, as the substance displays a sort of cumulative action. Intercurrent menstruation is not a contraindication for the continuance of the treatment. If hæmoptysis occurs the injections are temporarily suspended, subsequently beginning with a minimal dose, especially if the hemorrhage is accompanied by fever. Hæmoptysis occurs, however, with comparative rarity in conjunction with the use of tuberculin, the old as well as the new. The injections were made, so far as possible, on the extensor aspect of the forearms, for facility of observation. Should local swelling be marked, a longer time than usual should be permitted to elapse before the next injection is made, and great care should be exercised in regard to increasing the dose. If febrile reaction occurs, the dose should under no circumstances be increased. Temperature exacerbations of more than half a degree should be avoided. Should the febrile reaction continue for more than a day or two, the subsequent injection must be distinctly smaller than the previous one. Some patients appear so susceptible to the remedy as to be totally unsuited for the treatment with subcutaneous injections. In these the remedy may be employed by percutaneous introduction (by means of energetic friction upon the cleansed skin). Of the thirty-nine personal patients subjected to the treatment, not less than thirty had been under observation for six months and more; twenty-five were subjects of pulmonary tuberculosis, while in eleven others there was both pulmonary and laryngeal involvement. Of the latter seven had been considered cured before the institution of the new treatment. In six slight reddening of the cicatrices became evident only in conjunction with febrile reactions. In none was there any aggravation of the laryngeal condition, but in two, in whom the injections were repeated frequently during three months, there occurred diminution in the thickenings present in the mucous membrane of the larynx. In one case there was, in conjunction with the febrile reaction, complaint of slight pain referred to the cicatrix. Existing ulcers displayed only slight redness of their margins. The impression was gained that ulceration improved more rapidly under the combined treatment than under treatment with lactic acid alone. Just as the febrile reaction was less marked than after the use of the old tuberculin, so also was cough increased to a less degree and the local auscultatory phenomena were less pronounced. In all patients who had noteworthy expectoration striking and permanent diminution was observed. Under such conditions the impairment of resonance grew less, as did also the râles, and the physical signs of infiltration receded distinctly. No renal or intestinal complications were noted, although albumin was found in the urine in eight per cent. of the cases treated with the old tuberculin. In the case of a patient not entirely free from mixed infection the treatment was employed in view of the relatively low temperature (37.7°, 37.8° C. —99.9°, 100° F.), but it had soon to be interrupted, as it proved useless.

Rembold publishes, in the same journal, an analysis of eighty-two cases of pulmonary tuberculosis treated in 1890–91 with tuberculin. Of these, reports could be obtained concerning seventy. Of this number twenty-seven could now be recognized as being instances of mixed infection and thus unsuited for the treatment. All of these died—twenty-three during the first year following the treatment, two in the second, and two in the third. Of the remaining forty-three cases of unmixed tuberculosis, twelve were classified as severe, fifteen as of moderate severity, and sixteen as mild. Of the first, ten died in the course of the first four years following the termination of the treatment. Two were still living and permanently improved. Of the second group, seven died also during the first four years, and seven were living and permanently improved, while one was permanently cured. Of the third group, one had died in the fourth year, three were permanently improved, and twelve were permanently cured. Upon the basis of this experience the conclusion is expressed that in case of mixed infection tuberculin is without any favorable action; and that, while in cases of unmixed tuberculosis of the lungs little is to be hoped for in severe cases, marked and permanent improvement may be anticipated in many cases of moderate severity, and almost certainly good results, even to complete cure, in the mild cases.

Acute Yellow Atrophy of the Liver in a Girl Twelve Years Old.—In *The Lancet* for July 17, 1897, Fison reports the case of a girl, twelve years old, who three weeks before coming under observation had complained of general pains, lasting for three days and followed by what was thought to be a bilious attack, with vomiting after eating and headache. Jaundice had been present for ten days. There was no history of fright or mental shock. The jaundice was pronounced and the child appeared very ill. The temperature was 101.4° F., and the pulse 92. The tongue was coated. There was much bile in the urine, but none in the fæces. No physical abnormality of heart or lungs could be detected, but the liver appeared to be considerably enlarged. There was complaint of persistent pain in the right hypochondrium, with occasional nausea and impaired appetite. The jaundice varied greatly in intensity from day to day. In the course of a few days the temperature returned to normal, but the jaundice and the other symptoms remained the same. Several days later the liver appeared to be smaller, but the general condition was

unaltered. On the following day the child suddenly became drowsy and unable to perform any action or answer questions. The reflexes were not abolished, but urine and fæces were passed into the bed. The temperature was slightly above the normal; there was no delirium. In the course of a little while hemorrhages were noticed over the sacrum and convulsive movements took place in the arms, followed by rigidity. Coma now set in, and death took place sixty hours from the onset of the acute symptoms. No leucin or tyrosin was found in the urine. Upon post-mortem examination a number of subcutaneous petechial hemorrhages were found. The liver weighed three pounds and eight ounces and was flabby; the capsule was wrinkled, especially on the under surface of the right lobe. On section the substance of the organ was distinctly firm, of a light yellow-ochre tint, but free from red areas, although there were a few minute hemorrhagic patches. The lobules were indistinctly outlined. The gall bladder was filled with green bile mixed with an excess of mucus. The ducts were normal and unobstructed, but at the papillary orifice in the duodenum there were some slight inflammation and œdema, which prevented the ready expression of the bile. The portal vein was normal. The glands in the portal fissure were slightly enlarged. On microscopical section very few natural liver cells were seen, and they were full of granules. The liver tissue was to a great extent replaced by granular and fatty *débris* contained in a reticulated homogeneous nucleated structure, the nuclei probably being derived from liver cells. No leucin or tyrosin was observed. The capsule of the liver was slightly thickened. The pancreas was normal The spleen was greatly congested and rather soft. The kidneys weighed three and one-half ounces each; the cortex was pale. The adrenals were normal. The stomach contained altered blood and presented patches of submucous hemorrhage. The intestines also were the seat of a large number of submucous hemorrhages, especially in the cæcal region. The bladder was normal. The muscle of the uterus was bile stained. The brain weighed three pounds two ounces; the dura was bile stained and the brain tissue was normal. The lungs weighed eight ounces each, and presented a few subpleural petechial hemorrhages. They were œdematous and the larger bronchi contained muco-pus. Larynx, trachea, bronchial glands, and thyroid were all normal. The heart weighed one and one-half ounces; its muscular structure was bile stained, as was also the pericardial fluid; the valves were normal. The peritoneal cavity contained a considerable amount of bile-stained fluid: numerous subperitoneal hemorrhages were present, especially along the greater curvature of the stomach and in the great omentum.

Gastric Ulcer Perforating into the Pericardium.—Fenwick (*Lancet*, August 14, 1897) has reported the case of a man, fifty-five years old, who suddenly became ill and died within a few minutes. He had previously been in perfect health, and had not complained of pain after eating and had not suffered from vomiting or other symptom of disease of the stomach. After partaking of a meal consisting of tea, fish, and bread and butter, he arose from the table, complaining of pain and palpitation. After walking a few yards he sat down, and his wife, noticing that he looked very pale, administered some whiskey and water, but he expired in about a minute. Upon post-mortem examination the pericardium was found to contain several ounces of tea, which smelt of whiskey, together with some particles of fish. On the lower surface of the pericardium a small aperture was discovered, admitting a stout probe, which passed downward through the diaphragm into the abdominal cavity. The anterior surface of the stomach was firmly adherent to the under surface of the diaphragm, and on opening the viscus a chronic ulcer, almost one inch in diameter, with indurated edges, was seen to be situated about the centre of the lesser curvature. From the base of the ulcer a sinuous track led upward and to the right, through the substance of the pericardium. The stomach contained fourteen ounces of undigested material, composed of tea, fish, and sodden bread. The lungs were emphysematous, the right adherent to the chest wall. The heart was extensively infiltrated with fat; the valves were normal. All the other organs were apparently healthy.

A New and Easy Method of Examining Malarial Blood.—In a paper published in *The Lancet* of July 10, 1897, Macleod points out that for diagnostic purposes the examination of fresh malarial-blood films immediately after preparation is without doubt most to be relied upon. This is, however, not always convenient, and in a large practice it is often very inconvenient, so that one is driven to the examination of stained films at more convenient times. The staining of such films is an uncertain and troublesome process, so far as results that can be relied upon for diagnostic purposes are concerned. Macleod has succeeded in finding plasmodia in a preparation made by drawing across one cover glass the edge of another square cover charged with a drop of blood. He subsequently found that the same result could be effected by the use of a strip of ordinary notepaper, instead of the cover glass, for the purpose of spreading the film. The straight edge of a half-inch strip is drawn its full length through a drop of blood on the finger tip not larger than the head of a pin, the finger tip and the cover glass being previously cleansed thoroughly in the usual way. If too much blood be taken on the strip the film will be too thick and useless. The edge of the strip is quickly drawn across the cover glass, the strip being held nearly at right angles to the surface of the glass and before the blood has had time to dry upon the paper. In this way is spread on the cover glass (or slide if preferred) a fine film of blood which dries very quickly, and in it many excellent fields will be found, with the corpuscles lying on the flat and practically unaltered. The cover glass must not be fixed to the slide by any medium that will rub between the two, causing everything to disappear from view, but it must be mounted dry. It can be gummed to the slide by a strip of thin paper, with a window exposing the blood smear, when the latter can be examined with a dry or an immersion lens. With a good quarter-inch objective crescents and the larger pigmented parasites, and with an oil twelfth the smaller pigmented forms, can easily be seen. The specimens can be thus preserved and examined at any subsequent time, and even stained later. The film on a slide can be examined with a dry lens without the intervention of a cover glass; then stained, dried, and examined without a cover glass or with a cover glass with or without balsam. If an oil-immersion lens is used, the film when dried and unstained should be on the cover glass, as the layer of air between the cover glass and the slide, if the film is on the latter, prevents the oil working at its best. The films should be carefully protected from dust before they are mounted. The color of the protoplasm of the parasite is not quite the same dried as undried, and of course no movement of parasite or of pigment is possible in the dried state. Even the unpigmented parasites have been detected in the dried form as rings or signets, and they have been stained. Blood films treated in the manner outlined are subjected to less interference than when fixed by heat, alcohol, ether, or other means, or when treated with one or more staining solutions, washed, dried, etc.

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THE EFFECTS OF CHANGE OF CLIMATE UPON MAN AND ANIMALS.

THE problems of the relations of climate to the health of man are varied and complicated. That environment does exercise a very strong influence on race is universally allowed, although we are still greatly in the dark as to its effects on the human organization. Much light has been brought to bear on the subject of climatology within recent years, it has been intelligently studied, and in consequence a more accurate knowledge is spreading of the influence of climate in regard to health and disease. Especially is this the case in relation to disease. Change of air is often as curious as it is beneficial in its effects. Extreme purity is naturally an important factor, but after all it is but one factor. In many instances it is by no means essential that a patient should go to the seaside or even to the country in search of health; a change in itself is often of the greatest benefit. It is related on good authority that a man suffering from asthma and bronchitis, who lived in a healthy part of the country, found great relief by residing for a time in the slums of Whitechapel. Change of climate has an even more powerful effect on animals than on man; in fact, man is the only animal that can adapt himself to any circumstance of life or meet any environment. Dr. Richard Newton, in a paper read before the American Climatological Society, gives the results of his observations on the effects of climate on men and animals at Fort Stanton, N. Mex., sixty-one hundred and fifty feet above sea level. His opportunities for study were limited, but, as he remarks: "The great need in the study of climatology at the present moment appears to be more investigation of individual cases, more ascertained and established facts in relation to the action of climatic changes upon people or animals." He describes the effect of the change of climate upon the fever-stricken Texan cattle, and points out that if they survive the winter, and when the disease germs are killed by the frost, they soon wonderfully improve and increase in weight. Horses suffer acutely when brought from the plains to high altitudes, and it is stated that it takes twelve months or even longer for them to become acclimatized. Dogs, as is well known, endure climatic changes better than any animal except man.

Dr. Newton's deductions as to the effect of change of climate on man agree in the main with those of other observers. He disagrees, however, with the view held by Dr. Solly, that high altitudes are inimical to rheumatism; his experience teaches the reverse. No one will dispute the point that change of climate is of benefit in phthisis, yet climate treatment of this disease is beset with many difficulties and needs to be applied with much discrimination. The rule may be laid down as one to be followed in most cases, that in the early stages of phthisis a sea voyage or journey to a distant clime will do good, but that when the progress of the disease is far advanced if a change be taken at all it should be limited. The fact, too, should not be forgotten that one of the most important *desiderata* for consumptive invalids is plenty of sunshine. The causes for the health-giving properties of a change of air are obscure; at any rate, up to the present they have not been satisfactorily explained. A biological solution of the problem is sometimes suggested, that as early man was of necessity a wanderer, these nomadic habits have left their impression upon every cell and fibre of his being, and thus it is largely a question of heredity.

THE COMPARATIVE INTELLECTUAL CAPACITY OF MEN AND WOMEN.

SIR WILLIAM TURNER, at the meeting of the British Medical Association at Montreal, once again brought forward the old assertion that because the brain of a man weighs absolutely more than that of a woman, therefore a man is possessed of a greater amount of brain power than is a woman. This theory until recent times was on all sides conceded to be true, and was regarded as a convincing proof of woman's intellectual inferiority. The Russian Professor Darkchevitch took up the cudgels in defence of the weaker sex, and demonstrated to the satisfaction of the majority that the fact of a man's brain weighing slightly more than a woman's was worthless as a testimony of his superior intellectual capacity. Professor Darkchevitch contends from the result of his researches that the sexes as regards brain power are on an equality, and backs up the argument in support of his theory with many convincing illustrations. For instance, Skobeleff's brain weighed less than that of forty individual common soldiers; yet no one would dream for this reason of making the assertion that these men were the superior of Skobeleff in ability. Liebig's brain also was under the average weight.

The opinions on this matter are diverse and various. A large number of persons still hold to the views of Sir William Turner, and with him conscientiously believe that the lesser weight of woman's brain implies in itself the possession of less mental power. On the other hand, many side with Darkchevitch and say that her cumulative and retentive powers are fully equal to those of a man. The question may here be asked: Has woman's intellectual inferiority ever been clearly proved? That it has been is probably the opinion of most persons. From an anatomical and physiological

point of view also she is by many authorities relegated to a position lower than that occupied by man. The supporters of the theory of woman's intellectual inferiority point out, too, with triumph that in scarcely any branch of science, art, or literature has she ever reached quite the front rank. This is all true enough, but it must at least be granted that the cause for a part of her failure should be put down to her comparative lack of opportunity, and the fact should be taken into consideration that up to the present time from the conditions of her life she has been heavily handicapped in the race for fame. May not also the difference in the brains of men and women be looked for not so much in the ponderosity as in the quality? A woman's brain from the nature of things is to a certain extent of another type. The natural rôle of a woman differs widely from that of a man, and she is provided with or has evolved brains suited to her situation. Nevertheless, in these times it often happens that a woman from the stress of circumstances is prevented from fulfilling her natural mission and is compelled to compete with men. She has shown her capability successfully to do so, but in the action must necessarily lose many of her feminine characteristics. The wisest course to take will perhaps be to leave the final settlement of the question in abeyance until the evolution of the new woman has been more fully accomplished.

ULCERATIVE ENDOCARDITIS SUCCESSFULLY TREATED WITH ANTISTREPTOCOCCIC SERUM.

A FURTHER addition is made to the small number of cases of ulcerative endocarditis thus far treated with antistreptococcic serum. Washbourn (*Lancet*, September 18, 1897, p. 707) reports the case of a ward maid, twenty years old, who came under observation complaining of pains in the joints and general malaise. The only significant point in the family history was the death of her father from pulmonary tuberculosis and heart disease. The patient had previously enjoyed good health. Her immediate illness had existed for four days, setting in with pains in the joints, headache, and shivering. She was well nourished and appeared healthy. Especial complaint was made of headache and pains in the knee and thigh. Heart, lungs, and urine were found normal, and there was no swelling or other evidence of disease in any of the joints. The temperature was 100.6° F.; the respiration, 24; the pulse, 104. By the following day the temperature had become normal, and it remained so for three days. At the end of this time it again rose, and for six weeks thereafter the patient suffered from irregular pyrexia, the temperature rising as high as 105° F., and rigors and perspiration were frequent. Heart, lungs, urine, ears, eyes, vagina, and rectum appeared to be perfectly normal. The blood showed slight leucocytosis and slight decrease in hæmoglobin. Some carious teeth were removed, but there was no sign of inflammation in the alveoli. The patient suffered much from constipation, which required the frequent use of aperients. In spite of treatment with quinine and sodium salicylate, she gradually became worse; the rigors were more frequent, the appetite was lost, and pallor and emaciation set in. A distinct diastolic bruit now developed on the left side of the sternum, with its point of maximum intensity in the third intercostal space. It was decided that the pulmonary valve was affected and that the patient was suffering from ulcerative endocarditis. Antistreptococcic serum was injected, the injections being continued daily, with the exception of three days, for nearly nine weeks. At first doses of twenty cubic centimetres were employed, but later these were reduced. Throughout the period of treatment one thousand and thirty cubic centimetres of serum were injected in fifty-nine doses. During the first fortnight of treatment there were only two slight rigors, although the pyrexia persisted. At the end of this time the temperature became normal and remained so for twenty days. The patient now appeared so well that the injections were given on alternate days, but the temperature rising again, the injections were once more given daily. The general condition of the patient began to improve five or six days after the commencement of the injections, and three weeks later she was to all appearances quite well. When she passed from observation she appeared to be in perfect health, although the diastolic bruit in the pulmonary region was still present. At no time did the heart show any sign of enlargement. The only inconvenience noticed from the frequent injection of the serum was slight pain at the site of injection and an urticarial rash which lasted for a few days.

HYSTERICAL PARALYSIS OF THE EXTERNAL RECTI MUSCLES OF THE EYES.

WHILE the symptomatology of hysteria is, comparatively speaking, an open page, the pathology of the disease conversely is practically a sealed book. Although the recognition of well-marked and typical examples of the disease is easy, it is to be feared that many cases are forced into the category of hysteria "by exclusion"—that is, from ignorance as to their exact nature and inability to explain the symptoms present. Hysteria may simulate almost any form of organic disease, and there is scarcely a symptom, subjective or objective, that it may not reproduce; so that at times the diagnosis may remain shrouded in the deepest doubt. A decision can sometimes be reached empirically, one may say, by the skilled observer, from a ready appreciation of the significance of minor and collateral phenomena that attain scarcely to the dignity of symptoms and do not lend themselves readily to verbal description—in a word, from the *tout ensemble* of the case.

A case illustrating some of the points referred to has been reported recently by Dr. Buchanan, in *The Lancet* for July 17, 1897. This occurred in a young woman, thirty years of age, who complained of headache, giddiness, and difficulty of vision. The head-

ache had been present for thirteen days and was soon associated with giddiness, and this in turn was followed by the difficulty in vision. There was nothing significant in the family or personal history of the patient, and there was no evidence suggestive of a neurotic basis for the symptoms. In other respects than those noted she was in perfect health. The headache was almost entirely frontal, not tending to one side more than to the other, generally beginning with pain in the eyes. It was distinctly worse after using the eyes for a time, ceasing at night, and often being present on waking, more especially after the patient had been at work as a dressmaker the night before. The vertigo was general and there was no tendency to fall to one side more than to the other. The patient could stand well with the eyes closed, the feet together, and the hands raised high above the head. She could not "walk a line" well, and an attempt to grasp anything evidently increased the difficulty of the process, so that the visual effort appeared, in part at least, to be the cause of the deficiency.

On examination the external rectus muscle of the right eye was found to be almost completely paralyzed, without convergent strabismus, however. Homonymous diplopia also was present. Ophthalmoscopic examination revealed neither error of refraction nor change in any degree of the fundus of either eye, and there was no evidence of internal ophthalmoplegia. The visual fields were normal for both color and white light. The knee-jerks were normal, and there was no evidence of any organic disorder. The headache and the vertigo appeared to be rather the results than the companion symptoms of the paralysis. A guarded prognosis was given, complete ocular rest was ordered, and the prolonged use of a mixture containing potassium iodide and bromide with nux vomica was recommended. The paralysis rapidly became complete, and convergent strabismus developed. The headache became much less severe and less frequent, but the vertigo continued in much the same degree.

After the lapse of six weeks it was found that the right eye had entirely regained its powers of movement, whereas the external rectus of the left eye was paralyzed and there was marked left convergent strabismus. The left eye also ultimately recovered completely its powers of movement, and in a short while the patient was able to resume her work without inconvenience. She continued in perfect health during the subsequent two years that she remained under observation.

After a careful consideration of all of the possibilities in the case, it came to be looked upon as one of hysterical origin, and it must be admitted that in the present state of knowledge this diagnosis cannot be controverted. In cases of this sort the clinician is pretty much in the position of the man who persisted in spelling socks "sox," and when spoken to upon the subject propounded the somewhat startling and unanswerable query: "If s-o-x don't spell socks, what in thunder does it spell?"

Chicago has entered a claim as a meeting-place for the fourteenth international medical congress in 1903.

THE INFLUENCE OF ENVIRONMENT UPON THE BIOLOGIC PROCESSES OF THE VARIOUS MEMBERS OF THE COLON GROUP OF BACILLI.

As a result of an experimental study carried out in the laboratory of hygiene of the University of Pennsylvania, Dr. Adelaide Ward Peckham (*Journal of Experimental Medicine*, vol. ii., No. 5, September, 1897, p. 549), starting from the assumption that the typical colon bacillus and the typical typhoid bacillus represent the types of the colon group of bacilli that present the greatest divergences in biologic peculiarities, reaches the conclusion that there is a series of closely related forms that may be regarded as intermediate or transitional, and which serve to establish a biologic relationship, either near or remote, between these two typical processes. The typical colon bacillus may be regarded as the type of this group, for the reason that its functional equilibrium, as observed in the intestine, is so permanent a quality that it may readily be perpetuated in what are ordinarily regarded as favorable artificial circumstances, and that with the continuance of such conditions there is no conspicuous tendency on the part of this organism to deviate from what may be considered its norm; whereas, on the other hand, with all the other members of this group that were studied there is not only a lack of uniformity in the adjustment of the functions, but such as exists is readily disturbed under artificial environment—though even with the typical colon bacillus functional modifications are possible under particular conditions.

When the members of the colon group are cultivated under circumstances favorable to the development of both the function of fermentation and that of proteolysis, fermentation invariably takes precedence, and no evidence of proteolysis is manifested until after fermentation has ceased. The cultivation of all the members of the colon group under circumstances that favor the development of one function, viz., that of proteolysis, at the expense of another, viz., that of fermentation, results first in an apparent increase of vigor; but this is of temporary duration, and is quickly followed by decline and death of the cell. The result of this increased activity of the proteolytic functions is the formation of much larger amounts of indol by typical colon cultures than was obtained by any other method. By the method of experimentation through which it was possible to accentuate the proteolytic activity of the typical colon bacillus, as caused by an increase of indol formation, the function of indol formation was induced not only in typical colon bacilli that had been devoid of it, but as well in every specimen of typical typhoid bacilli to which access was had. One of the differential tests between the typhoid and the colon bacillus—namely, that of indol formation upon the part of the latter and the absence of this function from the former—is regarded as of questionable value, for the reason that by particular methods of cultivation indol production was shown to accompany the development of a number of specimens that there was every reason to regard as genuine typhoid bacilli.

As the result of the experiments made, together with

the observations of others, there seems no doubt that the bacillus coli communis at times possesses pathogenic properties, and that by artificial methods of treatment it may often be brought from a condition of benignity to one of virulence.

The spleen of a typhoid patient has always been regarded as the only trustworthy source from which to obtain the typical typhoid bacillus. In addition, it was found that other members of the colon group may also be present in this viscus; in fact, from such spleens could be isolated practically all of the known varieties of this group.

From the experience thus gained the value of the serum test for the differentiation of typhoid and colon bacilli would seem to be questionable. The irregularities noted, however, may be attributed as due more to the method of application than to defects of the principles involved; for by the use of dried blood it is not possible to make the test with constant or accurate or even approximately accurate dilution of the serum.

News of the Week.

New York's Lepers.—The four lepers who have been confined for some time on North Brother Island escaped a few days ago, with the apparent consent of the health authorities, and came to the city. They are now in the temporary charge of the commissioners of charity, awaiting permanent disposition. One was a Chinaman, one a colored man, one a Swede, and one an Irishman. According to the daily papers, the health board is not at all troubled about the escape, as its members do not regard leprosy as sufficiently contagious to be a source of danger to the community.

A Gift to London Hospitals.—The firm of Barnato Brothers has distributed a sum equivalent to over $80,000 among the London hospitals. It is announced that the money is given in fulfilment of the known intentions of Barney Barnato, the South African millionaire who committed suicide last June by jumping overboard from the steamer on which he was travelling from Cape Town to England.

The Yellow Fever.—Up to October 19th the total number of cases of yellow fever in the South has been 1,649. The proportion of deaths has been rather higher during the past week, bringing the mortality rate up a little above ten per cent. The disease has invaded Baton Rouge and some other places where what was supposed to be a most effective quarantine has been maintained from the first day the disease prevailing at Ocean Springs was pronounced to be yellow fever. The authorities, who cannot believe that their shotgun quarantines could possibly be evaded, comfort themselves with the assertion that the doctors know nothing of the fever, either of its nature or of the mode of its spread. The record for Tuesday of this week was: New Orleans—new cases, 37; total cases, 865; deaths to-day, 7; total deaths, 100. Mobile—new cases, 6; total cases, 170; deaths to-day, 1; total deaths, 22. Edwards—new cases, 4; total cases, 463; deaths to-day, 3; total deaths, 30. Patterson—new cases, 3; deaths to-day, 1. Baton Rouge—new cases, 1. Pascagoula—new cases, 2; total cases, 15. Scranton—new cases, 13; total, 194. Cayuga—new cases, 3; total cases, 18; deaths to-day, 1. Flomaton, Ala.—new cases, 16; total, 20. It is said that a suspicious fever has been prevailing for five or six weeks in Montgomery, Ala., but the health board has steadily maintained that it was not yellow fever. Early this week, however, the board admitted that there were two genuine cases in the city, and now the impression prevails that all the other cases were also of the same disease.

The Plague is reported from Madras, so that now it prevails on both coasts of the Indian peninsula.

The Leprosy Congress.—The closing session of the International Leprosy Congress was held in Berlin on October 16th. The discussions covered nearly every point relating to the etiology, pathology, bacteriology, symptomatology, and treatment of leprosy. To judge from the cable reports of the congress, there has been little brought forward that added to our knowledge of the disease. Babes, of Bucharest, in a paper on the bacteriology of leprosy, stated that Hansen's bacilli were found in great numbers in the mucous excretion, which was thus one of the chief means for conveying infection. The members of the congress were unanimous in their belief that Hansen's bacillus was the specific pathogenic micro-organism, and that it finds in man alone of all animals a suitable soil for its growth. The treatment was declared to be as yet palliative only and not curative; orrhotherapy was discussed at length, and the conclusion arrived at was that it has not yet been found of service in leprosy. The question of isolation in the prevention of the disease was also thoroughly discussed. Hansen, of Bergen, Norway, argued at length in favor of isolation, and said that his experience justified the prediction that, owing to the rigid isolation so long practised in Norway, the disease would disappear entirely there by the beginning of the twentieth century. If the same measures were followed universally, leprosy would be eradicated quickly. He insisted upon the observance of the most scrupulous cleanliness. This, he added, was more strictly observed in the United States than in Europe, the result being, despite immigration, that the disease had not spread there. Besnier, of Paris, held that isolation was not necessary if proper precautions were taken to guard against contagion. At the closing session the opinion was adopted by the congress that leprosy, while contagious, is not hereditary, and it was held that isolation is desirable and under certain circumstances is to be enforced by the authorities. The congress was closed by Virchow, who urged the co-operation of government and science. He hoped this congress would be the first of a series of international debates concerning various diseases of as yet obscure nature.

The Strafford District (N. H.) Medical Society.—The nineteenth annual meeting of this society was held in Dover on October 13th, under the presidency

of Dr. A. Noel Smith. The title of the presidential address was "The Economic Worth of the Physician."

A Decision against the Health Board.—The appellate division of the supreme court has handed down a decision that the health department of this city exceeded its authority and acted without due warrant of law in condemning and destroying four rear tenements in Mott Street some time ago. It was not denied that the tenements were unfit for human habitation, but it was contended that the buildings might have served some other purpose and should not have been razed. The appellate court decision will be appealed to the court of appeals.

Typhus Fever in Mexico City.—The unsanitary condition of the city and the protracted rainy season are causing much sickness in Mexico. During the past three months over six hundred cases of typhus fever have been reported, and there have been about one hundred and fifty deaths from that disease.

Ambulance Ships.—It is stated in the annual report of the surgeon-general of the navy, recently made public, that new methods of succor for the wounded must be devised to meet new conditions, and, with this object in view, plans for an ambulance ship have been prepared under the supervision of Medical Director W. K. Van Reypen. A recommendation for authority to establish a hospital corps for the navy is also contained in the report.

Small-pox in Atlanta.—Several cases of small-pox have developed in Atlanta within the past two weeks, and as a result the board of health has decided to begin compulsory vaccination throughout the city. It is not thought here that the disease will assume an epidemic form.

Health Statistics of New Brunswick.—In the annual report of the board of health of the city of New Brunswick to the New Jersey State board of health, the population of New Brunswick at the last census is given as 19,010; the number of births for the year ending June 30th were 408; deaths, 499; drowning cases, 13; deaths from railroad accidents, 11; and suicides, 3.

A Memorial Operating-Room in the Jamaica Hospital.—Miss Mary R. King, of Great Neck, Long Island, has offered to furnish and equip the operating-room of the Jamaica Hospital, now building on New York Avenue, in memory of her aunt, the late Miss Cornelia King, of Jamaica, who had taken great interest in this work.

Hydrophobia in Prussia.—According to official statistics, 107 persons died of hydrophobia in Prussia in the years from 1877 to 1894, but there was not a single death from that cause in 1895, although 368 cases of mad dogs were reported and 906 suspected animals, in addition, were killed by the police.

Dr. Lewis Balch, ranking major of the national guard, has been retired from the tenth battalion, of Albany, of which he was the surgeon.

Lay Treatment of Enuresis.—According to newspaper accounts two little girls, inmates of an orphan home at Madalin, were shut up in a pigpen and kept there for forty-eight hours on bread and water, as a punishment for wetting the bed. If this report is true, it would seem in order for the trustees to engage a new matron or instil a little common sense and humanity into the head and heart of the present incumbent.

Killed for Evading Quarantine.—A negro was lynched by a mob at a small settlement about fifteen miles from New Orleans, because he had been in the city and had evaded the shotgun quarantine established everywhere against the yellow fever.

The Chicago Medical Society has recently moved into the Stewart Building, where sufficient space has been rented to provide for a meeting-hall, committee rooms, a reading-room and library, cloak rooms, etc. It is hoped to make this the centre for all the medical societies of the city. The society has been in existence forty-five years, and has a membership of nearly eight hundred.

Illegal Practice of Dentistry.—A man who was recently convicted of practising dentistry without previous registration, as required by the law of this State, was fined $150 in special sessions. The three justices agreed in regarding the accused's action as a clear violation of the law, and said that they believed the dental law to be for the general good of the public, and expressed their pleasure in the opportunity afforded them of upholding the law. The man's employer was sharply rebuked for consenting to his violation of the dental act, and, perhaps as a mark of contrition or in reparation of his wrong, he paid the prisoner's fine.

The Syracuse College of Medicine.—Four names have been added to the faculty of this college, the opening session of which for the new year was held on October 5th. Dr. Charles W. Hargitt has been appointed lecturer on embryology, and will be assisted by Dr. F. P. Knowlton. Drs. W. L. Wallace and George B. Broad have been appointed instructors in anatomy.

Premature Burial.—The United States consul at Turin has sent a communication to the state department, stating that leading physicians in Italy are now engaged in preparing reports and exhibits relating to the phenomena of trance, and that papers on the means of distinguishing real from apparent death are expected from writers in all parts of Europe. Prizes will be awarded for papers offering the best solution of this problem. The consul says that not only the medical profession but many lay persons are interested, and that the medical section of the national exposition to be held at Turin in 1898 is to be largely devoted to the subject.

A Dental College "in Petto."—It is reported that Dr. Thomas W. Evans, the well-known dentist in Paris, intends to leave the bulk of his large fortune, estimated by some at upward of $30,000,000, to charitable and educational institutions in this country. It is said that he purposes to establish an elaborately equipped dental college in Philadelphia, in which the tuition is

to be practically free to deserving students. He has recently been in this country, and has consulted with many members of the dental profession in the leading cities concerning his plans for a new school.

Racial Immunity to Tuberculosis.—Some interesting observations, we learn from the *Medical Press*, have recently been made public by two Parisian physicians in respect of a group of people inhabiting St. Ouen, a district of suburban Paris, who appear to enjoy complete immunity from the scourge of phthisis. These observations bear on ninety-eight families, comprising five hundred and eleven members, of whom none has succumbed to consumption since 1883. As a matter of fact, this immunity seems of old standing, for researches extending as far back as 1870 revealed no record of death due to this cause. Tuberculosis is responsible for something like three deaths per thousand inhabitants per annum, and it is specially fatal among nurses and hospital attendants; indeed, during the last ten years phthisis claimed two hundred and seventeen victims out of five hundred and ninety-nine deaths among hospital attendants in Paris alone.

Decline of the Plague in China.—The United States consul at Amoy has reported to the state department that the bubonic plague, which has raged in that section of China for three months, is now regarded as having run its course.

A Trial of Typhoid Vaccine is being made on a large scale at Maidstone, England, where one of the severest epidemics of the disease ever known is now prevailing, fifteen hundred people out of a population of thirty-two thousand having already been stricken. The experiments are being conducted under the direction of the pathological laboratory of the State Army School at Netley, by Professor Wright and Surgeon-Major Temple. It is said that these have so improved the method that they are able to obtain Widal's reaction from the blood of the vaccinated, which is taken as a proof that the individual is protected by the injection. Enough vaccine has been sent to Maidstone to inoculate the whole population if necessary.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending October 16, 1897. October 9th.—Assistant Surgeon A. Farenholt detached from the *Vermont* and ordered to New York navy yard. October 11th.—Surgeon C. G. Herndon ordered on temporary duty at the naval museum of hygiene. October 12th.—Assistant Surgeon W. B. Grove detached from naval laboratory, New York, and ordered to Mare Island Hospital. October 13th.—Passed Assistant Surgeon C. P. Bagg detached from the *Marion* and ordered to the *Adams;* Assistant Surgeon M. K. Johnson detached from the *New York* and ordered to duty with the *Vicksburg;* Assistant Surgeon R. Spear detached from the naval laboratory, New York, and ordered to the *New York*. October 14th.—Surgeon C. Biddle detached from marine rendezvous, San Francisco, ordered to Washington in charge of patient, then to report at the navy department.

Malignant Malaria.—It is reported from St. Petersburg that malaria, which has been prevalent at Tashkend, Asiatic Russia, for four years, has now become virulent, and the deaths from that cause are estimated to number several thousand. The Russian garrison at Merv, where influenza as well as malaria prevails, has been transferred to Krasnovodsk, on the Caspian Sea, to prevent its being annihilated by disease.

The Idaho State Medical Society held its fifth annual meeting at Boise City on Tuesday and Wednesday, September 15 and 16, 1897. The newly elected officers are: Dr. C. A. Hoover, Montpelier, *President;* Dr. R. C. Coffey, Moscow, *Vice-President;* and Dr. Ed. E. Maxey, Caldwell, *Secretary* and *Treasurer*. The next meeting will be held at Moscow, Idaho, the first Tuesday in September, 1898.

The New Jamaica Hospital.—The laying of the cornerstone of the new building for the Jamaica, Long Island, Hospital, which is to be located on New York Avenue, that village, took place on Saturday afternoon last. The cornerstone was laid by Miss Gale, the president of the board of trustees of the Hospital Association. The new building will probably be completed by January.

Obituary Notes.—Dr. Theodore Todd Munro, of Union, S. C., died by suicide on October 10th, at Atlanta, Ga., whither he had been taken for treatment of the opium habit.—Dr. Joseph C. Wheaton died at Millville, N. J., on October 13th, after a brief illness. He enjoyed a large practice and was active among the poor and needy.—Dr. Newton E. Bates, surgeon-general of the United States navy, died in Washington on October 18th, at the age of sixty years. He was appointed surgeon-general to succeed Surgeon-General Tryon on October 1st, and was obliged on account of the illness which finally resulted in his death to take the oath of office in bed. His illness at that time was not regarded as serious, but developed alarming symptoms a few days ago. Dr. Bates was appointed assistant surgeon in the navy from New York State in June, 1861. He became surgeon in 1865, medical inspector in 1881, and for nine years prior to his appointment as surgeon-general was a medical director with the relative rank of captain. He was the President's family physician.—Dr. James P. Daly, of this city, the Tammany candidate for coroner in the Borough of the Bronx, died suddenly on October 15th. He was a graduate of Bellevue Hospital Medical College in the class of 1886.—Dr. Girard Robinson Ricketts died at his home in Proctorville, Ohio, September 20, 1897. He was born in Virginia in 1828, and was graduated from the Western Reserve Medical College of Cleveland, Ohio, in 1855. His three sons, Drs. Edwin S., B. Merrill, and Joseph V. Ricketts, are all practising physicians in Cincinnati.—Dr. William H. Ford, president of the board of health of Philadelphia, died suddenly, October 19th, at his summer home in Belmar, N. J., aged fifty-eight years. He was well known as a writer on hygiene and sanitation. He had been a member of the board of health for twenty-seven years.

Society Reports.

NEW YORK STATE MEDICAL ASSOCIATION.

Fourteenth Annual Meeting, Held in New York, October 12, 13, and 14, 1897.

CHARLES PHELPS, M.D., PRESIDENT.

Second Day—Wednesday, October 13th.

(Continued from page 571.

Hysteria and a Study of the Symptoms Observed during the Inter-Paroxysmal Period.—DR. WILLIAM D. GRANGER, of Westchester County, read this paper. He said that hysteria must be considered as essentially a psychosis, the predominant symptoms of which were attributable to the cortex of the brain. The symptoms of the interparoxysmal period were classified thus: (1) Disturbances of sensation, such as anæsthesia, paræsthesia, and hyperæsthesia; (2) disturbances of motion, such as paralysis, contractures, and tremor; (3) vasomotor, visceral, and nutritional disturbances; (4) mental symptoms; and (5) unclassified symptoms. Disturbances of sensation, particularly analgesia, were rarely absent in the graver forms of hysteria. The most frequent form of disturbance was a hemi-anæsthesia affecting exactly one-half of the body. Every one, the speaker said, was familiar with the "hysterical spine." Pains in the joints were generally confined to the larger joints. All sorts of pains were experienced in the head and face. The classical "hysterical clavus" of Sydenham was an intense pain of circumscribed area, usually at the vertex. The pains in the abdomen were quite scattered, yet in general they were more or less connected with the ramifications of the ovarian plexus of nerves. The ovarian zone was, of course, the one most commonly affected. In hysterical paralysis the patient usually dragged the limb, instead of swinging it as did the true paralytic. The electrical reactions would also be found to be normal and the skin would be unchanged. In connection with the well-known hysterical spasm of the throat, one often observed that the patient would refuse food. It was here that we met with the cases of deception, commonly called "fasting girls," but aside from the cases of palpable fraud there were well-authenticated instances in which such hysterical patients had been able to live for a long time upon a comparatively small amount of nourishment. The symptoms connected with the chest were insignificant when compared with those referable to the abdomen. Vomiting of blood was occasionally one of the stigmata of hysteria. Hysterical œdema was a very rare condition, due to vasomotor disturbance. The reports of extremely high temperature could be put down as fallacious, although a pseudo-hysterical fever had been noted, in which there was no actual rise of the body temperature. A rise of only two or three degrees was sometimes observed in hysterical cases, and was not amenable to treatment by the usual antipyretic drugs.

DR. HANAN, of Rensselaer County, detailed at length his experience with a case of hysteria, which some surgeons, notably a certain eminent one from New York City, had insisted was a case of organic pelvic disease demanding immediate operation. He had been astounded and disgusted to see this patient placed on the operating-table, and then at the last moment the operator refuse to operate. Notwithstanding various diagnoses and treatments, this patient was still in much the same condition as at first.

DR. VAN DE WARKER said that to his mind the most remarkable thing about this case was that the woman had, during all this trying period, succeeded in retaining her tubes and ovaries.

Massage as an Occupation for the Blind.—DR. ARTHUR Y. BENNETT, of Erie County, in a paper with this title, made the statement that there were over four thousand blind persons in New York State, and that so far as he had been able to ascertain from circular letters of inquiry probably not more than from six to ten per cent. were able to support themselves. Among blind women the percentage was very much smaller. He was of the opinion that the blind should be able to make massage their own peculiar profession. One of their special qualifications for such work was their well-known extraordinary delicacy of touch. Moreover, the blindness itself was an actual advantage, because it enabled the massage operators to carry on the necessary manipulations without being able to detect various bodily deformities and blemishes, about which most people were very sensitive. It was bad enough to expose the body to their physician, but it was many times worse to do this in the presence of a strange massage operator.

DR. THORNTON, of Buffalo, expressed the belief that this valuable suggestion should receive the hearty co-operation and support of the medical profession.

Differential Diagnosis of Pelvic Cellulitis and Peritonitis.—DR. ELY VAN DE WARKER, of Onondaga County, read the paper. He said that it was his aim to show that pelvic peritonitis and cellulitis were distinct entities, and that each disease had clinically discernible traits by which each could be differentiated. For example, the masses of peritonitis and cellulitis occupied positions so different that this alone should prevent the confusion of the two conditions. He had found one important symptom in cases of cellulitis—*i.e.*, retraction of the thigh. There was a good anatomical explanation for the fact that this symptom was so characteristic of cellulitis. It was never seen in uncomplicated pelvic peritonitis. Phlebitis and enlargement of the limb were also indicative of the condition. Another very highly characteristic and unfailing sign of pelvic cellulitis was the existence of a well-defined mass of cellular infiltration into the lateral wall of the vagina and continuous with the lateral vaginal vault. The remainder of the paper was devoted to an elaboration of these views.

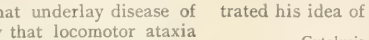
Wednesday, October 13th—Night Session.

The New Epoch in the Study of Pathology, by DR. IRA VAN GIESON, was the first paper. Dr. Van Gieson said it sounded a little sententious to speak of the "new epoch," but we could often speak of the old with new terms and better ideas. There were four cardinal factors which gave new views of the pathology of the nervous system. First, that the nerve fibre was not separate and distinct in character from the cells, but was the extension, as it were, of the cell. The two were anatomically and physiologically a unit. The tendency to think that the white matter and gray matter of the brain differed led to confusion, and it was a great gain to understand that the fibre was the outgrowth of the cell, whether that be motor or sensory. Second, that the linking of physiological chemistry and pathological anatomy aided in the understanding of the phenomena hitherto obscure. Third, the great advancement in cytology, by which it was known that the cells were in themselves a microcosm. This advancement in the knowledge of nerve-cell structure had been made by the biologists in the last few years. It was to be expected that the study of pathology would now be devoted more to the changes in the cells themselves than to the mass, for the cells had structural relations within themselves even as had the different organs of the body. Fourth, the comparison of the pathology of the nerve cells with that of other parts of the body. Singularly the nervous system had been studied as a

separate part of the body. The fact that the pathology of the nervous system had not been correlated with that of other parts of the body, had retarded its study. What will happen in the cellular structure of the kidneys and the liver when toxins come in contact with them may be assumed as happening also when toxins come in contact with cellular tissues of the nervous system. We might flatter ourselves that we knew much of the physical basis that underlay disease of the nervous system, but to say that locomotor ataxia was caused by sclerosis of the posterior columns of the spinal cord was to give not the cause, but the result of some changes that had taken place in the nerves. It did not explain the beginning of the disease. We were acquainted with what could be seen with the naked eye or the lower power of the microscope, but as to cell structure nothing was known, for it was not visible when sections were hardened in Müller's fluid. Dr. Van Gieson emphasized the point that the method of examining nerve cells by the use of Müller's fluid destroyed all opportunity of studying the internal structure of the cell. Pathological conditions seemed complicated, but he thought they could all be reduced to three forms—degeneration, inflammation, and necrosis. Instead of each disease having a different pathological lesion, he thought all could be traced to one of these three acting with varying intensity. These processes were found in the nervous system, and while the results might be modified, yet they were homologous to the same processes in the kidney or liver. Disease might be defined as the chemical reaction between the toxin forces on the one hand and the body forces on the other. If X represented the toxic forces and Y the body forces, the disease was represented by the ratio between these. The disease varied as the toxic forces varied or the body force varied; hence it might be represented as $dX : dY$, in which d represented differentially the varying force. The toxic force was influenced by amount of poison, how long acting, etc.; the body force by age, sex, heredity, etc.

Dr. Van Gieson discussed at some length the resisting forces of the body, and showed how they counteracted the toxic forces and how disease varied in relative proportion to the variation in these forces. By toxin he did not mean the result of bacterial life, but used the term in the broader sense of applying to all deleterious material which might impair the body. The results of the varying of body and toxic forces might be compared to the changing of the relative position of a few pieces of glass, producing many varying conditions. He then compared the structure of the brain to that of the kidney. The kidney was composed of parenchyma and stroma. The parenchyma was composed of cells which could be compared to the nerve cells; the stroma to the neuroglia. When there was a disturbance in the kidney, a lack of blood supply, too much blood, presence of any toxins, we saw the result in what we called cloudy degeneration. The cells were affected, became cloudy, broke down, and were destroyed, the result varying with the amount of toxin and the length of time it acted. The brain did not escape this similar result and hence followed delirium of fevers, etc.; cloudy swelling, it might be said, of the brain cells. This swelling is not seen on examination, because of the use of Müller's fluid. By the use of the blackboard Dr. Van Gieson showed how the fibrillæ of the nerve cells crossed, and how where they crossed there were minute nodes called microsomes. These were acted upon by the toxin, began to break down, and if the process continued the result would be the cloudy swelling of the cell and finally its destruction. This cloudy swelling explained delirium, which, when occurring by itself, was called insanity.

As we conclude in the case of the kidney what the prognosis is to be, so with the brain. The kidney recovered in full if not affected too long and too severely; so the brain. The one was the homologue of the other. The prognosis was affected by the body force. Thus insolation occurring in alcoholics was of doubtful prognosis on account of the body force and the condition of the cellular structure. The following diagram illustrated his idea of recovery:



There was a point beyond which there was no recovery—where the cell structure was affected; where the cells became broken down (cytoclasis, cell destruction)—but up to this point there was a possibility of recovery when the poison was removed (cytolysis, cell resolution). When the poison ceased to act, the cells began to restore their normal condition (cytothesis).

There was more hope of restitution in cases of acute infection than in chronic. A small amount of poison acting for a long time would make repair less hopeful than the action of the acute attack. Thus syphilis produced in its insidious way more damage to the cell than the acute fever, and made cytothesis less likely to take place. On the ground of cytoclasis it was easy to understand the existence of locomotor ataxia. The nerve cell underwent degeneration by the action of insidious poison. This resulted in the death of the fibre, and finally by inflammatory restitution its place was taken by tissue and it became a permanent lesion. Seeming improvement could be explained by understanding that some of the cells had not gone on to cytoclasis, and when the poison abated for a short time they began cytothesis and thus the symptoms might improve for a week or so.

The Conservative Surgical Treatment of Fibro-Myoma.—Dr. E. E. Montgomery read a paper upon this subject. He said that hysterectomy, vaginal or abdominal, could be considered conservative when performed to save life. He would not justify the retention of the uterus if there was disease of the tubes and ovaries, but in many cases these could be saved. Growths could be attacked per vaginam or by way of the abdomen—per vaginam by dilatation of the cervix, incision of the cervix, removal by torsion or by enucleation from the capsule. Curetting of the uterus might be employed to stop bleeding. A tumor that was pedunculated could be removed by three or four twists, but this could not be done if the tumor was encapsulated and partially inclosed in the walls of the uterus. Then there was danger from hemorrhage. Some had obtained favorable results by cutting off the blood supply from the tumor. This, as done by Martin, included ligation of the whole base of the broad ligament. It could be done without entering the peritoneal cavity, but there was some danger of ligating the ureter. This arrest of blood supply caused diminution of the tumor. He wished to assert that by using these various methods it was possible to remove tumors without sacrificing the body of the uterus. If the growth was in a woman near the climacteric, the uterus might well be removed, but if in a young woman the organ ought to be saved if possible. The cervix could be dilated with the finger or with tents, using one large one or several small ones, allowing them to remain from twelve to twenty-four hours. Careful cleansing was necessary. The vagina and cervix could be cleansed with formalin solution, the vagina being afterward packed with iodoform gauze. If the growth was near the fundus the cervix might be incised, a lateral incision extending well up but not entering the peritoneum being preferable. If pedunculated, the tumor might be removed by torsion; if encapsulated, by splitting the capsule, enucleating with a blunt dissector in preference to the

finger; and if the tumor was large, some morcellation might be necessary. After removal the incisions in the cervix were brought together by sutures, and the whole was thoroughly cleaned and packed with gauze. For the ready accomplishment of removal of a tumor through the vagina the uterus must be movable and the tumor not larger than the fist. If the case was not suited to this method, the tumor must be removed through the abdominal wall. Mural or intramural tumors were not to be thus considered.

Some Remarks on Ovarian Surgery.—Dr. A. Palmer Dudley read the paper on this subject. He read this paper in answer to some criticism on his work and to put on record some work he had done in contradistinction to radical operations. He thought the pendulum had swung too far, and radical operations were often done when conservative work would give better results. The operation of hysterectomy had become almost perfect. The French were so expert that child-bearing was becoming a very grave question, the government offering pensions to those who raised large families. He thought the government might well pension its surgeons and thus save the child-bearing power of the women. The question was: To what extent can conservative operations be performed with safety to the patient? A number of years ago he had seen the removal of a healthy ovary followed by the recovery of the patient, and had determined to see if the ovaries when only partly involved could not be operated upon and the unaffected portion saved. He had operated on a woman, removed a portion of one ovary, brought the edges together, and sewed them with fine silk. The woman became pregnant in a few months afterward. He had records of sixty-eight patients and all had done well. Eight of these had since borne children. In all these cases he had not seen a recurrence of any inflammation that could be detected by manual touch. He had never treated the ovaries with the cautery; he punctured the cysts, sometimes scratching the sac until it filled with blood. He thought the cautery destroyed too much healthy tissue. It was best to save all the tissue possible, but when necessary the operation had included nearly the entire ovary. In operations on the ovary he never used animal sutures, but fine silk. The tubes could be partially removed with good results. Even pus tubes could be saved by removing the portion in which there was pus, splitting the end remaining, sewing the mucous membrane to the peritoneal covering, thus leaving a cup-like end which performed the function of the fimbriated extremity. To this the ovary was attached by a single suture of silk. Some reasons why radical operations should not be performed when avoidable were, retaining the integrity of the home, avoiding nervous symptoms sometimes worse than the original disease, and saving the women from barrenness.

Dr. Fred Holme Wiggin presented a large tumor removed from a patient at the City Hospital. The woman was forty-two years old, was never pregnant, and had suffered from tumor over a year. She was weak, but suffered such pain that she and her husband asked for the operation. On account of the patient's condition the tumor was rapidly removed and the uterus sewed up; the patient recovered.

Dr. Dudley mentioned a case of a young girl suffering from a large tumor. He opened the abdomen and the uterus, removed the tumor, and sewed the uterus up, leaving a gauze drain from the abdominal wall through the vagina. Afterward the gauze was drawn up a little, cut off, and the remainder withdrawn through the vagina. The patient recovered.

Dr. E. D. Ferguson said he considered the question of myomectomy important. Fibromas were seldom single but were multiple—many small ones, seeds as it were. It was a question if leaving the uterus in this condition was conservative surgery for the patient. In subjects nearing the climacteric he thought it best to perform hysterectomy, but of course in the case of a young woman it was necessary to save the uterus if possible. Still it was a question if myomectomy would not become a fad, to the detriment of the patient.

Dr. J. E. Janvrin said he wished to congratulate Dr. Dudley on his conservative work. Most of the men who did much operating took this same ground of conservative surgery. He thought this was the safe ground. Dr. Montgomery's paper had, in a new way, presented facts relating to an old field and he congratulated the doctor on his success. The removal of tumors from the uterus had been done in a somewhat crude way for years. All tumors of the uterus, when the tubes and ovaries were in a healthy condition and the woman was young, should be dealt with in this way.

Dr. Wiggin said that in women under forty years of age he always left the uterus unless it was so diseased as to demand removal.

Dr. Montgomery said he would not suggest operation to save the uterus if the climacteric was near at hand. He was interested in Dr. Dudley's paper, and he had not before heard the suggestion as to leaving the end of the tube with a cup-like receptacle for the reception of the ovum. He had known removal of a diseased ovary to bring about the return of menstruation in a woman who had been irregular but who was not at the time of operation pregnant.

Third Day—Thursday, October 14th.

Officers Elected.—*President*, Dr. Douglas Ayres, of Fort Plain; *Vice-Presidents*, Second District, Dr. C. E. Fritts, of Hudson; Third District, Dr. H. W. Carpenter, of Oneida; Fourth District, Dr. C. C. Frederick, of Buffalo; Fifth District, Dr. N. W. Leighton, of Brooklyn; *Members of the Council*, First District, Dr. W. H. Robb, of Amsterdam; Second District, Dr. E. M. Lyon, of Plattsburg; Third District, Dr. W. L. Ayer, of Owego; Fourth District, Dr. J. G. Truax, of New York.

Subscription to the Rush Monument Fund.—Dr. Thomas H. Manley, of New York, moved that the treasurer of the association be authorized, in conformity with the pledge of the representative at the last meeting of the American Medical Association, in Philadelphia, to pay to the Rush monument fund the sum of $2,000, in the name of the New York State Medical Association. After some discussion and explanation the motion was carried without a dissenting vote.

General Considerations concerning Auto-Intoxication.—Dr. H. A. Hanbold, of New York, read a paper with this title. He said that the theory of auto-intoxication had found but little acceptance in the profession up to recent times. The explanation was to be found in the statement of Albu, of Berlin, that the general practitioner knew but little of physiological chemistry, which was necessary to an understanding of the subject. But recent investigations into the poisons developed spontaneously in the body in connection with general metabolism had given the subject considerable importance. The development of the science of bacteriology had led to the belief that the infection itself constituted only a portion of the etiological factors concerned in disease. In the majority of instances intoxication was secondary to infection, the intoxicants being the products of infection; but we were also justified in believing that primary intoxication was a frequent cause of disease, and that poisons might develop within the body. Examples were to be found in the saliva of poisonous snakes, animals affected with rabies, and in tetanus. The facts in our possession substantiating the theory of auto-intoxica-

tion were still few in number, but they constituted a firm basis for experimentation. Auto-intoxication consisted in a poisoning of the organism with the products of metabolism, existing normally but present in excessive quantity, or with abnormal toxic substances. The latter class was again divided into those undergoing further modification and those existing in the body only in minute quantity. In the gastro-intestinal canal the nutritive constituents underwent certain changes which rendered them capable of assimilation. The end products of disassimilation were for the most part simple compounds, such as water, the inorganic salts, urea, and the urinary salts, but the intermediate products of metabolism were far more complex in nature and difficult of investigation. Under pathological conditions they accumulated in the body and acted as auto-intoxicants. Gautier called these intermediate substances "leucomains," and believed them to be the cause of many pathological conditions. Disturbances of metabolism resulting in auto-intoxication were not limited to the albuminoids, but were due to the accumulation of intermediary products of the fats and carbohydrates. Under normal conditions it was claimed there always existed small quantities of certain toxic substances formed in connection with the processes of metabolism, but under unnatural conditions these poisonous substances might accumulate in the system in such quantity as to give rise to auto-intoxication. The toxicants circulating in the blood acted as irritants to the organs. If this irritation were transitory, the intoxication would be acute; if the disturbance were frequently repeated, it would result in a chronic auto-intoxication. It was naturally a task of much difficulty to prepare a clearly defined classification of these newly born poisons. Under the head of auto-intoxications von Jaksch, Kobert, Schwalbe, and Bouchard included all the diseases the result of a *contagium vivum—i.e.*, the infectious diseases; but, although our present knowledge justified the belief that most of the symptoms of the infectious diseases were produced by an intoxication with the modified products of metabolism, it should be remembered that these modifications were caused by microorganisms. This was but another way of saying that these intoxicants were the result of matters introduced from without—that they were exogenous poisons.

The author then took up briefly: (1) The origin or source of auto-intoxication; (2) the conditions governing its development; and (3) its manifestations or symptomatology. Under the first head were mentioned auto-intoxications arising from: (1) The skin—as the phenomena following severe burns; (2) the lungs—as carbonic-acid poisoning; (3) the kidneys—as uræmia and eclampsia; (4) the suprarenal capsules—as Addison's disease; (5) the gastro-intestinal canal (including not only the various constitutional disturbances consequent upon diseases of the stomach and intestines, but acute yellow atrophy of the liver, icterus gravis, cholæmia, and diabetes mellitus); and (6) the thyroid gland—as myxœdema, cachexia strumipriva, and possibly Basedow's disease.

As to the conditions governing the development of auto-intoxication, it should be said that it occurs only when secreting or excreting organs are functionating improperly. Individual predisposition was an important factor in the causation of auto-intoxication, and was almost certainly a neuropathic one. It was evident that if this individual element was not an important etiological factor, auto-intoxications would be much more frequent.

As might be expected, the symptomatology was extremely complex; for, although a single organ might be at fault, the resulting disturbances were usually very general in character. Aside from the very large number of auto-intoxications referable to an organ or definite part of the body, there were a number—such as chlorosis, pernicious anæmia, leukæmia, and the various cachexias—that found expression only in a general disturbance of the metabolism.

Asepsis and Antisepsis in Obstetrics, from the Standpoint of Present Scientific Knowledge.—Dr. George Tucker Harrison, of New York, read this paper. He said that in the whole history of medicine he knew of no more pathetic story than that of the illustrious Semmelweiss, whose memory should be cherished and revered by all who took an interest in obstetrics and in the welfare of puerperal women. It was left for this great man to make the first grand and successful effort to reduce the appalling mortality from puerperal fever. The first clew that he had received was at an autopsy on a medical man who had died as a result of infection from a dissection wound. He was at once impressed with the fact that the changes in the blood and lymph channels bore a striking resemblance to those observed in post mortems on women dying of puerperal fever, and this picture pursued him night and day until the truth dawned upon him. He found that, in the division of the hospital in which the mortality among puerperal women was so terrible, it was the custom for the students to come directly from the post-mortem room to the obstetric wards. The order accordingly went forth that all those in attendance on these lying-in women should invariably wash the hands with chlorine water before making any examinations. The good effect of this innovation was immediate and remarkable, the mortality being greatly diminished; indeed, at the present time the key to avoidance of this dreadful scourge was found in careful cleansing and antisepsis of the hands, and in making as few examinations as possible. The author of the paper said that he wished to enter a most emphatic protest against douching and scrubbing the vagina before labor—a practice advocated by some obstetricians. In his opinion such treatment was not only unnecessary but pernicious, if for no other reason than that it removed the normal protective vaginal mucus and caused abrasions of the vaginal mucous membrane. The dry, harsh feeling of the vagina after a bichloride douche was an indication that the use of antiseptics might even serve to retard and obstruct labor. Only the external genitals should be cleansed; cleansing of the internal genital organs should be entirely omitted. We should distinguish clinically between putrid or saprophytic endometritis and the septic variety. In the former a granulation area was soon formed and afforded a barrier which the bacteria could not penetrate. If this barrier was broken down by the curette, general infection might ensue. He believed that the exaggerated use of local therapeutics was responsible for many deaths. We had no means of ascertaining with certainty when the process might be considered to be localized. He had long since ceased to use disinfectant irrigations before and after operative procedures.

Dr. Eden V. Delphy asked if Dr. Harrison objected to all operative measures in puerperal sepsis.

Dr. Harrison replied that his doctrine was that local therapeutic measures were justifiable only when it might be safely assumed that the septic process was localized in the uterus. If it was not thus localized, there could be no sense in such treatment.

Dr. Delphy cited the case of a puerperal woman, who had had a rapid pulse and a temperature of 105° F. at the time he had been called. On curetting the uterus, foul pus had escaped. The patient was in collapse for two hours after the operation, but eventually recovered. He had operated upon other severe cases with good results. It was true that there had been too much meddling with the vagina, both before and during labor. It ought to suffice for the physician to get

himself and the outside of his patient clean. Of course it was possible that auto-infection might occur from an old pyosalpinx. He did not know how the physician was to tell whether or not the septic process had stopped at the uterine wall.

Dr. Harrison, in closing, remarked that he thought Dr. Delphy had been very fortunate in the case he had cited, if there had been pus in the uterus.

Gyves and Trigs (Bonds and Obstacles).—Dr. H. D. Didama, of Syracuse, read a paper with this quaint title. He took up first the question of venesection, and showed that previous to 1847 the medical profession had been held in the "gyves" of a so-called experience, and that the leaders and authorities had become so habituated to the bonds that they felt no galling. Only forty years ago it was still the opinion of such masters as the great Thomas Watson that the value of phlebotomy in pneumonia was well attested by experience. Nevertheless the treatment was not such a great success after all, for the statistics of one of the English hospitals were published about that time, and they showed that out of six hundred and forty-eight patients treated by venesection, two hundred and twenty-two—or more than one in three—died. In 1865 John Hughes Bennett had published in detail the cases treated by him for fifteen years in the University Hospital by mild supporting treatment without venesection. The mortality in this series was one in forty, and in the simple uncomplicated cases scarcely one in one thousand. In 1860 our own Flint had given utterance to the opinion that experience and pathological knowledge showed that general blood-letting did not exert a direct controlling effect on an inflammatory disease.

The remainder of the paper was devoted to a consideration of the place alcohol should hold in rational medicine. The author quoted from various sources to show the inconsistencies and absurdities of teaching of which medical observers were guilty in connection with the use of alcoholics in the treatment of disease. Thus, on the one hand, there were those who thought alcohol was a depressant rather than a stimulant, that it was not a food, that it did not promote but on the contrary retarded digestion, and that it was the cause of many diseased conditions. On the other hand, the great majority of the teachers of medicine continued to advocate alcohol as the best of all stimulants, and appealed to the experience of the wise and illustrious physicians, extending back to the dawn of history, as ample justification of their practice. How many had laid aside all prejudice, and had actually tested in a dispassionate and scientific manner the non-alcoholic treatment of disease? History was prone to repeat itself, and the end of venesection should be remembered. Dr. Didama then read a list of names of eminent members of the medical profession who indorsed the non-alcoholic treatment of disease, after a double experience—an ancient and a modern one—and closed with an earnest plea for the more general adoption of these views.

The Modern Treatment of Yellow Fever.—Dr. A. M. Fernandez de Ybarra, of New York, read this paper. He said that the best practice consisted in giving at the outset of yellow fever a cathartic, a full dose of castor oil being preferred to mercurials or salines. Quinine acted badly, and for the control of the fever it was much better to use moderate doses of aconite or digitalis. Jaborandi was used by some physicians, and it acted beneficially in a double way —*i.e.*, it promoted perspiration and relieved the congestion of the kidneys. Under no circumstances should opium be used in any form; it was extremely dangerous, owing to its effect upon the heart and kidneys. Care should be taken that the surface of the body was not suddenly chilled, as this would increase the visceral congestion. As a rule, alcoholics were not well borne, unless it might be iced champagne.

Committee on Hospital and Dispensary Abuses.—The following were appointed on this committee: Drs. F. H. Wiggin, S. B. W. McLeod, and Parker Syms, of New York; Dr. A. A. Hubbell, of Buffalo; and Dr. E. D. Ferguson, of Troy.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Twenty-Third Annual Meeting, Held in Louisville, Ky., October 5, 6, 7, and 8, 1897.

The association was called to order by Dr. Horace H. Grant, chairman of the committee of arrangements. Prayer was offered by the Rev. E. L. Powell, after which an eloquent address of welcome was delivered by Governor Bradley. Dr. William Bailey followed with an address on behalf of the local profession.

The president, Dr. Thomas H. Stucky, of Louisville, then delivered his address, in which he summarized the splendid work that had been done by the association.

Drs. Love and Wheaton offered resolutions against the present quarantining of Louisville by the State of Indiana.

SURGICAL SECTION.

Cases in Ophthalmic Surgery.—The first paper read before this section was by Dr. J. M. Ball, of St. Louis, entitled "Report of Some Cases of Ophthalmic Surgery." The author reported several cases of injury to the eye in which the proper surgical treatment proved satisfactory. One case of interest was a pseudoglioma removed by enucleation. The specimen was exhibited. Another was the case of a man, sixty years of age, who had been given sixty grains of quinine within twelve hours, in whom the next morning there was total blindness. A diagnosis of quinine amaurosis was made.

Dr. Wheelock inquired if there could not possibly be a syphilitic infection in the case of amaurosis reported, to which the author replied that such a possibility had been eliminated from the diagnosis.

Plastic Operation for Restoring Closed Lids.—Dr. K. K. Wheelock, of Fort Wayne, contributed a paper with this title. He reported a case in which an eye had been enucleated in 1881 in consequence of smallpox. An artificial eye had been worn for twelve years, when the socket had become so contracted that it was impossible longer to introduce the artificial eye. The technique of the operation for the restoration of the cavity to its normal size was described.

Dr. Stephenson said that these were always interesting cases. Those occurring as the result of burns usually gave the most trouble in fitting an artificial eye. Much could be done oftentimes by any method which would gradually stretch the tissues.

Dr. Wilder said that there was no more difficult class of work in ophthalmic surgery. The general surgeon should appreciate the necessity of preserving as much of the conjunctiva as possible. Most patients wanted to wear an artificial eye too soon after enucleation.

Dr. Wheelock, in closing, remarked that if he had a similar case to deal with he would operate entirely with the Thiersch grafts. These should be applied from the tip of the finger, so as to be adapted to any part of the orbit.

The Removal of Adenoids from the Vault of the Pharynx.—This paper was read by Dr. L. C. Kline,

of Indianapolis. The author stated that there was a great diversity of opinion regarding the use of anæsthetics for the removal of adenoids. The majority of patients could be operated upon with equally good results by the use of cocaine. The author preferred the gradual operation to that done at one sitting, for the reason that there was less danger of otitis and hemorrhage. A forceps which the author uses was exhibited. When an anæsthetic is employed a mouth gag is used. In tuberculous cases the application of ichthyol was very beneficial. Various astringents could be used with advantage, but surgery was the only sure relief.

Surgery of the Air Passages in Children.—Dr. J. Homer Coulter, of Chicago, followed with this paper. He considered the subject one of great importance, because of the high percentage of deaths from diseases of the air passages during childhood, because the respiratory and circulatory functions were being crowded to their vital capacity, and because reflexes in childhood were more prominent and frequent than in adult life. The parents of to-day should be taught that, with our modern methods, technique, and usually favorable prognosis, surgery in children was not the nightmare it formerly was. There was no longer any question of the bad effect of nasal obstruction upon adjacent organs. Any of the causes of nasal obstruction in children would tend to septum deflection in adult life, and if for no other reason the physician was bound to give them possible relief. Catarrhal deafness was almost always due to nasal obstruction. The entire field for pathological conditions of the nose did not lie in the postnasal space, nor was there any good reason why occlusion of the anterior chambers of the nose should not produce as many reflexes as does hypertrophy of Luschka's tonsil. Foreign bodies in the nose and throat and the method of their removal were then considered. The after-treatment was important, and could not often be left to parents with any degree of satisfaction.

Dr. Crile said that in all cases of surgery of the air passages an important point was the consideration of the "arrest area." Ordinarily the physician should not perform a cricothyrotomy unless it was necessary.

Dr. Thomas suggested that many diseases of the air passages in children were due to a systemic disturbance or to reflexes. Judgment to differentiate when to use surgery and when therapeutics, was absolutely essential.

Treatment of Wounds by the Open Method.—A paper on this subject was read by Dr. J. B. Taulbee, of Mount Sterling, Ky. Our present methods of treating amputations were different from those of a quarter of a century ago. A routine method was never a good one; hence each individual case was a law unto itself, both as to irrigation and the kind of drainage, and as to whether or not temporary drainage should be instituted.

Dr. Ochsner said that the least irritation to the tissues in abdominal wounds should always be observed. Large wounds would always heal primarily if there were lack of irritation of the tissues, exact coaptation, and the stitches were not drawn too tightly. The number of infected wounds in herniotomy was greater than in laparotomy, because the tissues were more greatly damaged.

Dr. Lawrence said that it was more reasonable to suppose a wound would be healthy if drainage was free. A properly cleansed private room at home with a good nurse was better than any general hospital. Silver-wire buried sutures would produce both sinuses and atrophy of the muscles.

Dr. Goldspohn stated that the only microbes that had indefinite life were those of the bacillus of tuberculosis and the gonococcus. Primarily aseptic wounds should be treated as such and not as open wounds.

Dr. Dunn said that when we did not have germs we could not have pus. In over two thousand abdominal sections which he had seen there had been no failure to secure primary union, and a stitch-hole abscess developed in only one case.

To Drain or Not to Drain.—Dr. Arch. Dixon, of Henderson, Ky., read this paper. For some time past drainage after abdominal section had been growing less and less in favor. There were wounds which required drainage, and others which did not. Aseptic wounds did not require it, but contaminated or infected wounds did. The author reviewed the arguments against the use of drainage in the peritoneal cavity. Drainage was not effective in removing infection; infection might occur through the drainage tube. The removal of the tube was painful, bladder complications were possible, hernia might result, and frequent removal of the tube was necessary.

Dr Goldspohn called attention to the two methods of abdominal operations—one in which the smallest possible opening was made, and the other in which a large wound was made. He pointed out the advantages claimed for each method of operating.

Dr. Cordier said that if two cases exactly alike were taken, and the operation, surroundings, and care of each be identical, one drained and the other not, we would almost invariably obtain more satisfactory results in the case in which drainage was employed.

Hysterectomy.—Dr. F. F. Lawrence, of Columbus, read a paper with this title. In what cases is hysterectomy justifiable? We must consider: (1) How many would have died without it; (2) who many would have been hopeless invalids without it; (3) how many could have been cured by other means; and (4) the remote conditions or reflex results in those upon whom the operation has been performed. Hysterectomy was ordinarily performed for cancer, pyosalpinx, fibroma and myoma, tuberculosis, and prolapsus. Hysterectomy for cancer was of doubtful utility, but when necessary should be done by the abdominal route. In the case of pus tubes the operation should be limited to those in which the walls of the uterus were the seat of the disease. Simple adhesions were not sufficient grounds for the performance of this operation. Small fibroids involving the lower segment of the uterus only should be treated tentatively. If the small fibroids were in the body of the uterus, they should be treated either by curetting, by removal of the tubes and ovaries, or by hysterectomy, as the case demanded. If small fibroids occurred near the menopause, curettage with electricity was sufficient. For enlarged fibroids after the menopause, hysterectomy was the only thing to be considered. In myoma or tuberculosis, this operation was likewise the only thing to be resorted to. By removing the ovaries and tubes, all of the diseased tissue was not taken away. Any method of operating was to be judged by the safety from complications, by the preservation of a firm pelvic floor, by the facility of operating, and as it afforded the best satisfaction and general results to both patient and operator.

Dr. Goldspohn opposed the removal of the uterus for septic disease alone in every case. The vaginal route should be more appreciated by American operators.

Dr. Ochsner said that while his experience with hysterectomy had been favorable, yet he was becoming more and more cautious about advising its performance. In one case he advised the operation, as he considered the case beyond the help of even this operation. The woman was treated tentatively, had since given birth to two children, and was now healthy.

Dr. Newman said that better results would follow a perfected technique.

Pelvic Disease without Local Symptoms.—This paper was read by Dr. Henry P. Newman, of Chicago. The speaker said that pelvic disease of an aggravated type was often present without noticeable local symptoms; that reflex symptoms began in mere functional disturbance, and might become so serious as to endanger the life and health of the patient, and give rise to misdirected treatment which did not recognize the causes of the real trouble. It was necessary to understand the relative importance of pelvic irritation, and of certain obstinate and severe affections of more distant organs. This was very essential to a correct diagnosis in many cases. In all cases of chronic invalidism in the female, failure to exclude pelvic disease, in the same manner as we excluded diseases of the other important organs, was unscientific and reprehensible. The cause of medicine would be advanced when practitioners made comprehensive diagnoses.

The Diagnosis of Surgical Diseases of the Kidneys, Bladder, and Prostate.—Dr. Bayard Holmes, of Chicago, contributed this paper. The author called attention to some methods of diagnosis of special value, and related at length his experience in their application, demonstrating by means of the Kasper cystoscope his method of catheterizing the ureters. He further demonstrated that the kidney could be exactly localized by auscultatory percussion.

Diagnosis by Inspection of the Urinary Tract.—Dr. Joseph R. Eastman, of Indianapolis, read this paper. The use of the cystoscope was particularly important in the male. Its value in diagnosticating vesical calculus, foreign bodies, neoplasms, and pathological conditions resulting from gonorrhœa, locating fragments after litholapaxy, etc., was very apparent. In the female its range of usefulness was still wider and its application more simple. The author described and demonstrated in a clear manner the difficulties and technique of catheterization of the ureters.

Dr. Cordier said he had recently made some experiments with the *x*-rays in bladder work. He had, by placing a small photographic plate in the vagina and the tube above the abdomen, secured very excellent photographs. In the male the plate could be placed in the rectum and similar results secured. Foreign bodies or calculi could thus be positively detected.

Primary Tuberculosis of the Rectum, with Report of Cases.—Dr. Leon Straus, of St. Louis, read a paper on this subject. Tuberculosis of the rectum was a surgical disease. A thorough microscopical examination must be made in every case of suspected ulceration. The author reported four cases of removal of the ulcerated rectal tissue and described his operation. Recovery followed in all of the cases but one. His conclusions were that: (1) Primary tuberculosis of the rectum is not so infrequent as is generally supposed. (2) It is surgical. (3) It cannot be diagnosticated positively and invariably by the usual clinical symptoms; the microscope must be employed. (4) Local treatment will not cure these cases; they can be cured only by thorough curettage or by excision, or by both. (5) Some of the most hopeless cases are cured by repeated operations. (6) All suspicious cases should be subjected to the microscope. (7) We have sufficient evidence that the cases reported are cured.

Diseases of Rectum and Sigmoid as a Factor in General Disturbances.—Dr. J. R. Pennington, of Chicago, read this paper. Undoubtedly various authorities are agreed that the *materies morbi* of a large number of somatic, mental, and nervous diseases have their origin somewhere in the gastro-intestinal tract. At just what point in the canal is a mooted question. The importance of the rectum and sigmoid in many auto-intoxications is entirely overlooked and the consequent primal defect not located.

Treatment of Hernia in Old Men.—Dr. A. J. Ochsner, of Chicago, read the paper. It was a well-known fact that hernias in men become more troublesome after the age of fifty, due to relaxation of tissue, a tendency to obesity, and lowered vitality in general, according to most authorities; but the author was convinced that the more important cause was the pressure exerted in evacuating the bladder and rectum, or the presence of an enlarged prostate. The author described his operation for the radical cure of hernia in connection with castration for enlarged prostate. In cases in which there was simply hypertrophy, the gland subsequently decreased in size very rapidly, affording much relief. If the surgeon had perfect control of his methods, securing perfect asepsis, the operation was perfectly safe. It relieves the patient of much discomfort, and every argument in favor of operation for the radical cure of hernia was applicable to the operation for resection of the spermatic cord for the relief of conditions due to enlargement of the prostate gland. It was as yet too early positively to determine whether or not the favorable results obtained by the author in his cases would be permanent, but he had every reason to believe that they would.

Postoperative Hernia in Appendicitis.—Dr. Robert T. Morris, of New York, read a paper on this subject. Operators for appendicitis were now using a much smaller incision than formerly, in order to avoid the unfortunate effects of a hernia. These hernias were caused by the fact that the lines of muscle traction at this point were different in different muscles. A pad over the seat of operation induced hernia by bringing on absorption of the new connective tissue as it was being formed. The margin of each muscle should be separated with the greatest care in operating; care should likewise be taken in dividing the peritoneum. In closing the wound each different layer of muscular tissue, as well as the peritoneum and fascia, should be united with the same tissue from which it was separated at the beginning, so that the lines of muscular traction would not be disturbed, and hernia was not so likely to be produced. No bandage or pad should be applied. The patient should be kept in bed for at least twenty-one days following the operation.

Dr. John Young Brown, of St. Louis, made some remarks on appendicitis, in which he said conservatism had given place to knowledge in this disease. This knowledge was sufficiently comprehensive and accurate to afford a satisfactory working basis. Infectious appendicitis should be isolated, for the same reason that a case of diphtheria was isolated.

Dr. Morris, of New York, said that making a date to operate in a case of appendicitis was certainly undesirable. The surgeon could not always wait until the third day. Rigor meant that toxins were entering the circulation and producing an impression upon the sympathetic system.

Tuberculin in Dermatology was the title of a paper by Dr. A. Ravogli, of Cincinnati, in which the author drew the following conclusions: 1. Tuberculin is a valuable aid in dermatology, both as a diagnostic and therapeutic measure. 2. In lupus it acts remarkably well as a systemic treatment, particularly in conjunction with other means for the purpose of reducing infiltrations. 3. After a large number of injections he has never had any bad effects. 4. Old tuberculin has given him more marked reaction, both general and local, than the new. 5. In cases in which ordinary remedy had an influence, tuberculin promptly caused a disappearance of the eruption, healing of the ulcerations, and a general improvement in the condition. 6. If relapses occur after the use of the remedy has been discontinued, we are not justified in blaming the remedy therefor. 7. To insure recovery, tuberculin must be used in small doses for a long time at short intervals.

Mothers and Daughters.—Dr. B. Sherwood Dunn, of Boston, read a paper with this title, in which he stated that higher education, according to many authorities, was detrimental to motherhood. He pointed out some of the fundamental errors in modern education and the training of girls, showing that although on the care of our children depended their lives, their moral welfare or ruin, yet in our modern system of education not a word of instruction relative to the treatment of offspring was ever given to those who would become parents. He considered at length the necessity of more careful physical training of girls. Labor, exercise, and food were considered important elements in their training, and above all they should have a proper knowledge of the physiological functions peculiar to their sex. Parents must decide themselves as to how these important points should be taught.

Dr. Joseph Eichberg, of Cincinnati, read a paper descriptive of cases of typhoid fever treated with cold baths.

Further Observations in the Use of Hydrogen Dioxide in the Treatment of Blepharitis Marginalis.—This was the title of a paper by Dr. S. C. Ayres, of Cincinnati. This disease unchecked produces gradual destruction and atrophy of the hair bulbs from ulceration. Mercurial ointments have long been used, and are well adapted to some cases but irritating to others. An alkaline wash is very beneficial in softening the crusts, but in hydrogen dioxide the author thinks we have a remedy which both softens and dissolves. After using the remedy, with a dressing probe or scoop the crusts can be lifted off. The dioxides will always be a valuable adjunct to other rational measures in the treatment of this disease.

Dr. Max Thorner, of Cincinnati, said he had used this remedy extensively and had seen the results from its use in Dr. Ayres' hands, and almost invariably he had most satisfactory results. However, in recent years the remedy had fallen into disuse.

Chronically Diseased Tonsils.—Dr. H. W. Whittaker, of Columbus, read a paper on this subject. Seriously diseased tonsils are frequently underestimated in importance and left untreated, when they are undoubtedly very injurious to general health. In chronic disease of the tonsils there may be either hypertrophy, hyperplasia, or atrophy. Hypertrophy of the tonsil is found in the child; hyperplasia in the adult. The causes which induce chronic tonsillitis may be predisposing or exciting. Among the former the most important is heredity; among the latter are diphtheria, scarlet fever, and the exanthemata. The author gave a comprehensive description of the symptoms usually present. Prognosis is good, providing excision is properly performed. The voice is vastly improved both in tone and quality after excision of the tonsils, and no deleterious sexual changes or perversion will ensue. In the treatment it is necessary to consider the hygienic, prophylactic, local, constitutional, and surgical measures. The details of each were noticed and thoroughness was insisted upon.

Hypertrophied Faucial Tonsils.—Dr. J. F. Barnhill, of Indianapolis, followed with this paper. It was strange that the laity still had absurd notions relative to the functions of the various tonsils. The system suffered little or nothing from ablation of normal glands. The author's classification of cases was: (1) those in which the patient claims never to have suffered inconvenience from the tonsils; (2) those in which there is quinsy or tonsillitis one or more times a year; (3) a small, flat, yet pathological gland. In all cases the diseased crypts should be cleared out. The patient was a most valuable assistant. The bad results of pathological tonsils were enumerated, and they were stated to be a cause of reflex neuroses and to act as obstructive bodies, as absorbents, and as auto-infectious bodies. Various methods of treatment and removal of the tonsils were considered, and the merits of each were pointed out.

Insanity of Adolescence.—Dr. Frank P. Norbury, of Jacksonville, read a paper on this subject, in which he drew the following conclusions: (1) Adolescent insanity is a pure psychosis, dependent upon hereditary factors and acquired conditions which especially inhibit the higher psychical centres and later the sensory motor functions of the cortex. (2) The vasomotor and trophic centres are involved in it. (3) The sympathetic nervous function is disturbed, from which it is apt eventually to lead in the female to suppressed menstruation, or even excitation, producing nymphomania. (4) Masturbation is a complication which in the male is apt to cause reflexes. (5) There is no period in life more important than adolescence.

The Treatment of Cerebro-Spinal Syphilis.—Dr. A. E. Sterne, of Indianapolis, read the paper. In the treatment of syphilis of the brain and cord, the ordinary therapy is wholly inadequate, if not entirely wrong. The dose is too small; the potassium salt is inferior to the sodium salt, particularly in large doses. The syphilitic lesions of the brain and cord may involve the meninges, the brain and cord tissues with gumma formation, the bony parts, and the blood vessels. The author drew attention to three important points in diagnosis and therapy: First, in producing the reflex with the percussion hammer there occurs at the moment of the hammer blow a second prolonged contraction across the muscle. Second, the iridic reflex to light is sometimes difficult to determine and is not always present. The third point is wholly prognostic in value, and relates to capillary pulsation; when this occurs, it indicates high arterial tension and serves as a guide in the use of heart stimulants.

The Motor Neuron in Practical Diagnosis was the title of a paper by Dr. Hugh T. Patrick, of Chicago. The author made a concise statement of the more practical relations of the neurons of the motor tract. A neuron, as he explained, is simply a nerve unit, and the motor tract is made up entirely of two distinct sets of neurons, an upper and lower. A lesion of either set causes paralysis, but the customary accompanying symptoms are radically different in the different groups. The *rationale* of these differences was briefly pointed out, and it was explained that in a lesion of the upper neurons the paralysis is spastic, accompanied by increased deep reflexes, no atrophy, and no change in electrical reactions. On the other hand, in a lesion of the lower neurons, the accompanying and distinctive signs are flaccidity, loss of deep reflexes, atrophy, and reaction of degeneration. It was further stated that it makes no difference whatever which part of the neuron is affected, the result in all respects being exactly the same.

Tobacco Neuroses.—Dr. Zenner, of Cincinnati, read a paper on this subject. In very many instances tobacco is only one of the many causes of the existing malady. Among the other factors often conjoined with tobacco and which make the diagnosis more difficult, are alcohol, coffee, mental strain, worry, etc. Syphilis also often plays an important part. The neuroses traced to tobacco are functional diseases of the heart, amblyopia, tremor, vertigo, neurasthenia, some forms of neuralgia, rarely angina, and the lesser nervous disturbances, epilepsy, and various psychoses; even paresis has been attributed to it, although without sufficient reason in every case. The treatment is entire abstinence from the use of the weed. The mere lessening of the amount usually fails altogether. Frequently entire abstinence for a year or more permits a return to the use of tobacco in moderation without harm.

Penetrability of Vaporized Medicaments in Air Passages.—A very instructive and exhaustive paper was read by Dr. Homer M. Thomas, of Chicago, entitled "Experimental Work on the Penetrability of Vaporized Medicaments in the Air Passages." Do vapors enter the alveoli of the lungs? All observers thus far have questioned such a possibility. The greatest difficulty has been in the mechanism of the instruments for vaporization, in that they have failed to break up the oil in sufficiently fine particles for it to enter the alveoli. The author related in detail the results of his experiments, mostly on animals, during the past two years, and gave his reasons for believing that under proper conditions the medicament will enter the healthy lung, even to the alveoli. A variety of microscopical slides were exhibited, taken from the lung of a patient in whom inhalation had been practised shortly before death, which plainly showed the oil globules in the alveoli.

Dr. C. A. Johnson, of Chicago, followed with a paper on the same subject. He related his experience in the use of the instrument in forty tuberculous cases, and directed attention to the point that the solution employed must be a weak one, as too strong a solution produces irritation and consequent hypersecretion. The first symptom of improvement was relief from the dyspnœa, and the next a lowering of the temperature.

Epistaxis in the Most Serious Form, with Report of a Case Necessitating Ligation of the Common Carotid.—Dr. Max Thorner, of Cincinnati, the author, said that in using the term epistaxis, reference was made to hemorrhages in which blood comes from the nose, and those cases in which it merely passes through the nose. In the latter category is included bleeding from the pharynx, naso-pharynx, the accessory cavities, larynx, lungs, and stomach, as well as in cases of fracture at the base of the skull. The author considered serious cases only, those in which the ordinary styptics fail to check the hemorrhage. He referred to four cases in which the radical operation of tying one or both carotids was practised, two of which proved fatal. The paper closed with a reference to a case in his own practice. It was that of a man struck with an iron ring across the bridge of the nose and right side of the face. Unconsciousness and profuse bleeding from the nose followed. The patient was removed at once to the hospital and the nose plugged. During the next eighteen days the nose was tamponed repeatedly both anteriorly and posteriorly, but each time after removal of the tampons the hemorrhage started afresh within seventy-two hours. The patient becoming almost exsanguinated, with high pulse and increased temperature, an operation was decided upon. The common carotid was ligated. The hemorrhages did not recur, and the patient was discharged one month after the operation.

Scoliosis.—Dr. William E. Wirt, of Cleveland, contributed a paper on the treatment of scoliosis, in which he referred to the use of dry heat at high temperature for the treatment of this condition. He recalled the fact that he had originated this treatment three years ago, and had been experimenting extensively along this line continuously ever since. He explained in detail the apparatus used to inclose the heat about the joint, and by reference to several well authenticated cases showed the certain value of dry heat in the therapeutics of scoliosis.

The Thyroid Glands.—Dr. I. N. Love, of St. Louis, spoke on "The Thyroid Glands from a Clinical Standpoint." He gave an interesting historical review of serum therapy, and particularly of thyroid therapy, and drew valuable deductions from his experience with it.

Some Phases of Extra-Uterine Pregnancy.—Dr. A. H. Cordier, of Kansas City, read a paper entitled "Some Phases of Extra-Uterine Pregnancy." This condition was not recognized and diagnosticated as it should be by the general practitioner. The application of common sense and good judgment was the best guide to the successful termination of ruptured tubal pregnancy. If a blood vessel was injured and bleeding it should be tied. The diagnosis was usually not very difficult. A very important point was the menstrual history, and this should be thoroughly investigated. The pathology of these cases was of little value at the bedside. A tube having once ruptured would continue to give trouble. The dangers of the condition far outweighed the dangers of good surgery employed in these cases. Operation should be performed at the earliest possible moment. Clots did not always form. No case was devoid of danger until the bleeding vessel was firmly tied.

The Treatment of Suppurating Fistulous Tracts.—This paper was read by Dr. E. J. Senn, of Chicago. The primary dressing should not be disturbed for four or five days, when it is removed and repeated if necessary. Nitrate of silver or other caustics should not be used, as the granulations are only superficially destroyed, leaving a necrotic area, which should be avoided. If the granulations are persistently sluggish, the wound should occasionally be packed with gauze saturated with balsam of Peru, as this agent stimulates the regenerative capacity of embryonal cells without impairing the vitality of the surrounding tissues. In the author's hands most obstinate fistulæ have yielded under the treatment suggested when previous antiseptic irrigation over estimated periods of time proved of no value.

One of the pleasant features of the closing scenes of the meeting was the presentation of some handsome pieces of furniture to Drs. Stucky, Grant, and Tuley, on behalf of the exhibitors present, in recognition of the work done by these gentlemen for the success of the meeting.

Amendments to the constitution, enlarging the duties of the secretary and providing a salary for his services, were adopted; action was also taken with regard to the permanent preservation of the transactions of the association.

A resolution rescinding the action previously taken relative to the reported quarantining of Louisville by the State of Indiana was unanimously passed.

Officers Elected.—The following officers were elected: *President*, Dr. John Young Brown, of St. Louis; *Vice-Presidents*, Drs. A. J. Ochsner, of Chicago, and A. P. Buchman, of Fort Wayne; *Secretary*, Dr. Henry E. Tuley, of Louisville, Ky.; *Treasurer*, Dr. Charles A. Wheaton, of St. Paul. Place of meeting, Nashville. Time, second Tuesday in November, 1898.

After adopting resolutions of thanks to the various committees, the association adjourned.

For Injection in Small Dose, for emaciation, cachexia, etc., after lingering chronic diarrhœa, just as in the adult in tardy convalescence, postoperative shock, and neurasthenia, Cheron's solution:

℞ Ac. phenic.,
Sod. chlor.,
Sod. phos.,
Sod. sulphat. ..... āā 1 gram.
Aq. dest. ..... 100 "
M. S. Five grams injected twice daily.

Debilitated children often increase in weight under this medication, but if continued too long the injections produce a condition of sleeplessness, unrest, with crying, etc., and may cause true lymphatic engorgement.—Therapeutic.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE GENERAL MEDICAL COUNCIL ELECTION—SIR W. FOSTER—MR. HORSLEY—TYPHOID AT MAIDSTONE—INCREASE OF THE EPIDEMIC—WATER SUPPLY POLLUTED—DR. WASHBOURN FINDS THE BACILLUS—A DANGER TO EAST LONDON SUPPLY—DR. PARKES ON SANITATION—MEDICAL SOCIETY OF LONDON.

London, October 1, 1897.

THE contest for the seat in the Medical Council so inauspiciously vacated by Dr. Rentoul is creating unusual interest. In London and the large centres the excitement is rising as the day for decision approaches, but it is feared that in country districts the apathy of the profession may prevent the poll being as heavy as could be wished. The indifference that has marked some elections has prevented some reforms and has rendered governments unwilling to enlarge the powers of the council. The voting-papers will be issued to-morrow and must be returned on or before the 9th. They will be counted on the 11th, and the result stated at a meeting on the 15th. Mr. Jackson has withdrawn in favor of Sir Walter Foster, M.P., M.D., who on returning from the meeting in Canada immediately issued an address. His views are pretty well known, as he was a member of the council for ten years and was not willing to come forward last year for a third term. This in some degree is against him, as is also his close association with the British Medical Association and the manner in which he was first nominated by that body. On the other hand, Sir Walter's experience in parliament is a valuable qualification, and in the House of Commons he has been a consistent advocate of professional rights. As parliamentary secretary to the local government board, he gave general satisfaction and was able to further professional interests. Should the Liberal party regain power within a moderate period, he might obtain higher office. On Wednesday there was an influential meeting in London to support him, in which he stated his opinions and replied to questions—in fact, was subjected to a rather unpleasant and personal cross-examination. On a voté being taken, his supporters were fifty-four against seven.

To-night there is to be a meeting of Mr. Victor Horsley's supporters at the West End and another in the Northeast of London, and to-morrow a meeting at Norwich. His candidature has been received with such favor that he might have confidently looked for success, but the appearance of Sir W. Foster in the field quite alters the conditions. The contest will most probably lie between these two. I have previously stated the names and claims of the other candidates. Mr. Horsley's scientific position and Sir W. Foster's political opportunities seem to be the points most talked about.

The typhoid, fever epidemic at Maidstone, announced in my last, has spread during the week with such rapidity that it is becoming a national calamity. More than a thousand cases are notified, and that in a population of a little over thirty-two thousand. In fact, at 6 P.M. yesterday eleven hundred and forty cases had been notified. The previous day the number reported was nine hundred and fifty, and there is no sign of the rapid rate of increase diminishing. Of course all business in the town and district is practically suspended, and the one thought of the survivors is how to arrest the plague. The hospital accommodation was of course insufficient to cope with such an emergency, but other buildings have been fitted up in the greatest haste. Thus the Salvation Army placed its barracks at the service of the sanitary committee, as did the trustees of the Wesleyan schools. Boiled milk, soup, and other supplies are being freely distributed, and a large number of nurses has been engaged, while more than one hundred young men are working as night nurses in order to give some rest to the friends and attendants of the patients. On the advice of the government inspector, three substations have been opened by the guardians, at which the nurses can obtain all necessaries for the patients on applying for them.

The origin of this deadly epidemic has been traced to pollution of one of the springs from which the town draws its drinking-water. The medical officer of health seems to have been alive to the possibility of this contamination, and at an early period to have fixed on the source of danger and brought the matter under the notice of the authorities. The incriminated springs were unprotected in open meadows, where hop-pickers had been allowed to encamp, and it has since been ascertained that cases of typhoid had occurred among them. To-day the water company is discussing the necessity of cutting off all the supply from these springs. It seems there was some difficulty in obtaining enough water from the others, but a gentleman of the neighborhood has placed at the disposal of the authorities some additional springs of undoubted purity. Surely at the very first the suspected supply should have been shut off, and there will be no little discussion as to where the blame of not doing so must rest. Dr. Washbourn was called in as a bacteriological expert, and has found the bacillus typhosus in the water of the suspected springs.

A terrible object-lesson is thus before the country, and the newspapers are full of details and suggestions. And yet very little attention has been paid to a statement that in East London boys and men are in the habit of bathing in one of the tanks of the water company. This must be rendered impossible, for the danger is obvious, and the company ought to take immediate measures to protect its water from such a source of danger and pollution.

Dr. L. Parkes gave a lecture on Monday at the Parkes Museum, on the "Outcome of Sanitation," in which he showed how much sanitary science has done for this country.

Next week the work of the Medical Society will begin, when Dr. Sansom, the incoming president, will give an address on "Nervous Disturbances of the Heart," and Mr. Anderson will read a paper on "John Ardern, the Father of English Surgery."

OUR PARIS LETTER.

(From our Special Correspondent.)

DR. LAPORTE'S CASE—SYMPATHY FOR HIM—THE PRACTICE OF MEDICINE—OVERCROWDING AGAIN THE SUBJECT OF AN ESSAY—TREATMENT OF CORYZA—VOMITING DURING PREGNANCY—INCREASE IN THE PRICE OF BREAD, ETC.

Paris, September 25, 1897.

THE unfortunate case of Dr. Laporte, about which I wrote you in my last, is arousing considerable sympathy, not only among the laity but more especially among the medical profession. It seems that the doctor was absolutely without the means to procure the instruments (forceps) necessary in such cases, and that in the operation on Madame Fresquet the packer's needle was used in place of the basiotribe. For his defence Dr. Laporte cites the authority of Penard and Abelin, who have published a much-appreciated treatise on obstetrics, and who state very judiciously, at least so

affirms the accused, that if the accoucher or doctor has not at hand the necessary instruments he is justified in using such objects as they may deem best adapted to the accomplishment of their task. Other and distinguished surgeons have done the same, only they were successful. If the operation in this case had succeeded perfectly and the mother had made a good recovery, Dr. Laporte would have been a very clever man instead of being in prison. As there was also no criminal intent whatever, but evidently only a humanitarian effort to deliver the woman and alleviate her sufferings, numerous physicians are taking active steps to have the judge, M. Bertulos, place Dr. Laporte at liberty provisorily.

The question of mental unsoundness has also been raised, but Dr. Laporte is considered as absolutely responsible for his acts, and he himself assumes the responsibility, stating that while he used instruments such as works on surgery do not recommend, he was constrained to do so by the urgency of the case.

The governmental authorities are still at work regulating the practice of medicine, determined to prevent illegal exercise, and the following details of an official act will be read with interest: By decree, the law of November 30, 1892, on the practice of medicine in France, is rendered applicable to the colonies, excepting protectorate countries. There are, however, certain specifications, of which the principal are: 1st, The list of epidemic diseases, the divulging of which does not engage professional secresy, shall be drawn up by order of the minister of the colonies in accordance with the opinion of the Academy of Medicine and that of the consulting committee of hygiene of France. The declaration should be made by every or any civil or military doctor, health officer, indigenous doctor, or *sage femme* practising in the colonies. 2d. In French colonies in the Indies is maintained an institution for indigenous doctors. Further, where it is deemed necessary the practice of medicine may be authorized by decree, and special schools for indigenous doctors shall be established under the same regulations.

The right to practise dentistry, in conformity with the provisions of article 82, is given to every dentist proving that he was inscribed on the patent roll on January 1, 1897.

The work at the École de Médecine just now is not exactly of a scientific character and is limited to getting things in order for the beginning of the scholastic or academic year next month. One of the most important changes is the new library. The transfer from the old to the new library having been completed some time since, many thousands of volumes are now in their places on the shelves of the new library, which is quite imposing in appearance and is provided with long tables for the use of professors, students, and general practitioners.

Among recent publications is one that only accentuates what has been several times referred to in my letters from Paris, viz., the overcrowding of the medical profession. The title is "Obstruction [Encombrement] and Depreciation of the Medical Profession," and the author is Dr. L. Grellety, consulting physician at Vichy.

The abortive treatment of coryza, a disease or the commencement of a disease so common at this time of the year, is attracting professional attention. Dr. Maurel, of Toulouse, suggests placing small wads of iodoform cotton in the nostrils, which he finds occasions neither inconvenience nor irritation. He also recommends iodoformic vapors, placing them in direct contact with the staphylococci of the nasal cavities. The coryza heals rapidly under their influence, and, what is more important, the descending bronchitis that so often follows is prevented or reduced to a minimum. Dr. Maurel, however, wisely adds that in order to obtain these results the coryza must be taken at the very beginning. In my own experience I have never found anything better than a snuff consisting of equal parts of subnitrate of bismuth, chlorate of potassium, and sulphate of quinine.

Professor Tibone, of the Faculty of Medicine of Turin, finds the best and most rapid way of stopping persistent vomiting during pregnancy to be hypodermic injections of cocaine given in the epigastrium. He recently tried it very successfully in a number of cases in which hypodermic injections of morphine had had no effect. Thanks to these injections of cocaine in doses of one centigram or about one-fifth of a grain, repeated once or twice a day, almost immediately after meals, the patients were able to retain what they had eaten, without the cocaine having any bad after-effects upon either the pulse, respiration, or temperature. Little by little the general condition of the patients improved, the weight of the body increased considerably, and the vomitings did not recur even after the injections of cocaine had been stopped.

A propos of the case of Dr. Laporte, who has not only some of the leading newspapers but the profession and public sympathy with him, I quote from a recent "Précis d'Obstetrique" by no less men than Drs. Ribemont-Dessaigne and Le Page, of the Faculty of Paris, a standard work (see page 1,215). There is, so to speak, no instrument that has not been used to open the cranial cavity of the fœtus. Numbers of doctors, not having at their disposal special instruments, have used what they had at hand—kitchen knives, scissors, etc. There is therefore no lack of authority for performing craniotomy with whatever instrument may, in the judgment of the physician, be deemed most fitting in want of the regular instruments prescribed for that purpose and in cases of great and immediate urgency.

The annual meeting of the Anglo-American Continental Medical Society takes place next month. The date is October 12th. The question of the formation of a branch society on the Rivièra is still pending.

Just now many of those physicians who practise in the south of France and on the Rivièra are passing through Paris—our confrère, Dr. Linn, of Nice, among others, is returning thither. Dr. Linn's book on the health resorts of Europe has taken a well-merited place as authoritative in climatological literature. He has observed cases of catarrhal affection cured by a simple sojourn in the dry air of Nice.

The rise in the price of bread, which falls heavily upon the Paris poor, has been caused by the unusually bad year for cereals. All the railways, in a spirit of alleviation, have reduced their tariffs for the transportation of cereals.

Yesterday was the second anniversary of Pasteur's death, and it was fittingly remembered at the Institut.

THE PULMONARY ORIGIN OF THE CREPITANT RÂLE.

To the Editor of the MEDICAL RECORD.

SIR: "If we are to draw conclusions, our methods must be accurate, our deductions must be logical, they must stand the test of careful scientific analysis, they must conform to known physical laws." These are the exact words used by Dr. Louis H. Jones, in his article supporting the interpleural origin of the crepitant râle, which appeared in the issue of the MEDICAL RECORD of June 5, 1897. I fear, however, that the above just considerations can in no wise be applied to the paper with which the doctor would have us join him in considering the crepitant râle of interpleural origin. I heartily indorse the doctor in the sentiment expressed in the closing sentence of his article, that

we should not accept all new teachings without investigation, but likewise object to the resuscitation of individual opinions that have justly never received any serious consideration from scientific medical men.

Before beginning my defence for the pulmonary origin of the crepitant râle, let me say that the point at issue is not whether we can have a real pleural rub not to be distinguished from a crepitant râle, but whether or not this râle is of pulmonary origin. We know that at times we may have a pericardial rub indistinguishable from a heart murmur, yet this does not establish its endocardial origin. So, therefore, Dr. Jones' quotation from Osler has no direct bearing on the subject.

The study of Leaming's work on the lungs leads me to believe that his enthusiasm led him to fit the cases to his theory rather than the reverse. In all his post mortems in which he had heard crepitant râles, he found signs of either recent or of adhesive pleurisy, but he also found presence of pneumonia or of phthisis; therefore the presence of crepitant râles prior to death could be explained either by the pneumonic or tuberculous process without the presence of the pleural condition. Had he in any of his post mortems been able to demonstrate undoubted crepitant râles with only pleural inflammation, then his opinion would have been greatly strengthened. We, on the other hand, who hold the opposite view, can present cases in which crepitant râles were present, and in which at the post-mortem table no evidence of pleural involvement was found complicating the pneumonia. These cases are uncommon, but they do exist. This is particularly true of central pneumoniæ.

Leaming states (page 23) that "central pneumonia without interpleural plastic exudation is unaccompanied by râles, either crepitant or subcrepitant;" but in contradiction to this I quote from the article by Juergensen on "Pneumonia," in Ziemssen's Encyclopædia, page 84: "Even in central inflammation of the lungs the râle may often be detected; but Laennec makes too sweeping a statement when he says that a comparatively unpractised ear can discover by the crepitation the existence of central infiltrations no larger than an almond." If the crepitant râle depended for its existence on the movement of one layer of pleura on the other, why would it not be present at times during expiration, as is frequently found in real pleural friction sounds, and why should we not hear it during the stage of complete consolidation, when the quantity of exudate is greatest in amount?

Dr. Jones states that the crepitant râle is sometimes heard in this stage; this is undoubtedly the case, but then it is due to the fact that some vesicles are not quite full of exudate, or to the presence of inflammatory œdema in the vicinity of the pneumonic area.

In support of this I again quote from Juergensen: "Over the parts which have become solid with infiltration, this sign is absent," etc. Furthermore, we all have seen cases of pneumonia in which during the course of the disease either in the adjoining lobe of the same side or on the opposite side have developed pure crepitant or subcrepitant râles, and yet on post-mortem nothing but a little hypostatic congestion or œdema was found. It has been observed that if a patient lies on his back for a short time or sits up in bed in a cramped position, it is possible to hear distinctly over the lower parts of the lung posteriorly typical crepitant râles, which disappear at once after a few deep inspirations. This is due to a temporary atelectasis, and the râles are produced by the air separating the collapsed vesicles. Here the pleura cannot be involved. We know that in the real friction rub the phenomenon is best heard over the more movable parts of the lung, and that after a few deep inspirations it often disappears. But this is not so in the case of the crepitant râle. The supporters of the intrapleural origin claim that the sound is heard directly beneath the ear, and therefore originates in the pleural cavity. Is not the râle generated in the vesicles immediately beneath the visceral layer of pleura just as close to the ear; and furthermore is not the lung in this state of consolidation in excellent condition to convey to the ear most distinctly those râles generated more deeply in the lung? Is it not for this reason that Skoda called these râles "consonating râles"?

I hope these few arguments will succeed, if not in convincing the readers where the crepitant râle is generated, at any rate in persuading them that the râle is not of intrapleural origin. Let us go a few steps farther and attempt to establish the site of origin of this disputed râle. Dr. Jones says that crepitant râles cannot be produced by the separation of the walls of the air vesicle, for, he says, atmospheric pressure prevents the collapse of the vesicle and the residual air prevents the tidal air entering the smaller bronchial tubes in mass. Regarding this latter opinion I will say that physiology teaches us that the residual air is in excess of the tidal, and it constantly occupies the bronchioles and the air vesicles; but is it not this very air that rushes in to dilate the air vesicles during an act of inspiration pushed onward by the means of the tidal air entering the trachea and bronchi? During expiration a portion of this same residual air is forced out into the bronchioles again, and in the mean while constant exchange of gases according to the laws of diffusion is going on. Leaming himself says, on page 20: "In unhurried healthy respiration the air enters in a body to the bronchi as far as the third or fourth division, when it becomes instantly mixed with the residual air, becoming a component part of it, and by its addition equally dilating the distensible true respiratory system." Regarding the atmospheric pressure preventing total collapse of the air vesicle, I concur, but this does not prevent the air vesicle becoming filled with exudate thrown out from its walls. This exudate, in my opinion, is at first only small in amount, so that when the intrapulmonary pressure is lowered by an inspiratory act the air rushes in, as explained above, until the pressure rises sufficiently to overcome the cohesive power of the exudate, distending the vesicle and giving rise to the crepitant râle. This of course would occur toward the end of inspiration when intrapulmonary pressure is greatest, and it is exactly at this period that crepitant râles in pneumonia are best heard. It may be objected to this opinion by those holding the other view that, if such is the case, why do we not get the same condition in the so-called stage of complete consolidation? The reason is that in this latter stage of pneumonia the vesicle is overfilled with exudate, so that it might be considered as distended by the exudate as it would be in health by air. This can be proved on post-mortem by the fact that the lobe affected with pneumonia is larger than normal, so much so that the imprints of the ribs are on its surface; also by the fact that the pressure of the exudate on the capillaries of the alveoli of the lungs is sufficient to produce ischæmia of the lobe. Furthermore, the exudate becomes more solid in the alveoli, and the air would tend to press the exudate more firmly against the wall of the vesicle. Wintrich has succeeded by auscultating the excised lung of an animal to hear râles distinctly when air was forced into it.

This is briefly what I have to offer in objection to the intrapleural origin of the crepitant râle; I sincerely hope it carries some conviction with it to those who have been patient enough to follow to the end the pathological and clinical facts mentioned in my discussion.

Guido E. Cagliéri, B.Sc., M.D.

520 Montgomery Street, San Francisco.

TAPEWORMS.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Referring to the recent article by Dr. Chamberlin,[1] in which he makes the statement that tapeworm disease seems to be almost entirely confined to womankind, and to the later communication by Dr. Dowling,[2] in which he cites cases in men, I have thought that the following statistics upon the subject would not be uninteresting to the readers of the MEDICAL RECORD:

CASES OF TAPEWORM IN MAN.

Total Number of Cases Reported.	Sex of Patients. Female.	Male.	Authority.
173	117	56	Wawruch.
247	151	96	Crisp.
26	16	10	Seeger.
240[3]	129	111	Monti.
10[3]	7	3	Roger.
367	241	126	Krabbe.
1,063	661	402	

It will be seen from these statistics that about sixty-two per cent. of the cases reported by the six authors cited were among women, and about thirty-eight per cent. among men.

A moment's thought will, I believe, make the reason of this difference clear to us. We certainly cannot assume that women are from sex predisposed to tapeworm infection, but we should recall that they are more exposed to such infection from the fact that they, more than men, prepare food for the table.

I am not familiar with the statistics which Dr. Chamberlin cites from the French army, namely, one case of tapeworm disease in every 36,000 men, but find it extremely difficult to accept the proportion given. Bérenger-Féraud[4] gives the following figures for the maritime hospitals in France, but does not state the sex of the patients:

CASES OF TAPEWORM IN MAN IN MARITIME HOSPITALS OF FRANCE—1861 TO 1890.

1861 to 1865	33	cases in	130,927	patients, or	0.20	per 1,000
1866 " 1870	95	" "	152,822	" "	0.62	" 1,000
1871 " 1875	422	" "	137,361	" "	3.06	" 1,000
1876 " 1880	1,108	" "	130,898	" "	8.45	" 1,000
1881 " 1885	1,505	" "	155,646	" "	10.05	" 1,000
1886 " 1890	2,253	" "	152,352	" "	14.80	" 1,000

The statistics for our own country are very incomplete, but I have shown elsewhere[5] that on the Federal side during our late war, "in a total of 5,548,854 patients from July 1, 1862, to June 30, 1866, only 566 were diagnosed as having tapeworms, or 1 in 9,803."

Unfortunately our American statistics have not taken the various species of tapeworm into account, but so far as I can judge from the specimens which physicians and others have sent to this bureau for determination from various parts of the country, Tænia saginata, the beef-measle tapeworm, is by far the most common form with us; Tænia solium, the pork-measle tapeworm, is much less common. I have seen only three cases of Bothriocephalus latus in the United States, and only one case of Hymenolepis diminuta (Tænia flavopunctata). No cases in man of Hymenolepis murina (Tænia nana,) Dipylidium caninum, Davainea Madagascariensis, Bothriocephalus cordatus, Bothriocephalus Mansoni, or Krabbea grandis have as yet been sent to us.

As for Ward's new species (Tænia confusa), his original specimen is the only material of this kind I have examined. This worm, which presents most remarkable segments, will soon be described in detail by one of Ward's pupils, and until this publication appears it will be lost time to discuss the form. Suffice it to say that physicians should be on the lookout for a tapeworm with enormously long (twenty-seven to thirty-five millimetres) segments, and should send the specimen, if found, either to Prof. Henry B. Ward, University of Nebraska, Lincoln, Neb., or to me, or to some other helminthologist for zoölogical determination. I am particularly anxious to obtain a complete specimen with head, for I feel convinced that the head which Ward has described does not belong to the body he studied, but to a specimen of Dipylidium caninum—a view which has already occurred to Ward.

In connection with the question of treatment which Dr. Chamberlin discusses, I take the liberty of adding three suggestions which may be of service to your readers. Two of these suggestions are based upon the natural habits of the tapeworm.

It is generally assumed that a tapeworm is a low kind of animal without nerves. On the contrary, he has a very complicated nervous system which demands that we must treat him with a certain amount of respect. In the head the tapeworm possesses well-developed ganglia, and running from these are two enormous lateral nerves which extend through the entire worm, giving off branches to every segment. An insult to the end segment will thus be communicated to the head. Now, it is a frequently observed phenomenon that if a tapeworm, more particularly a delicate species, is suddenly thrown into cold water, it will often break into several pieces. It is also a frequently observed fact among physicians that when a patient is passing a tapeworm the parasite will suddenly break in two. A moment's reflection will show that the tapeworm in this latter case is passing from the warm bowels to the cold air, perhaps into a cold porcelain vessel. To fool the parasite, care should be taken to prevent this sudden change of temperature. This can be very easily done. The patient should be instructed to use a vessel containing warm water.

Again, tapeworms have a habit of "tying themselves up into a knot," with the head in the centre, and they are frequently expelled in this form. If, however, they meet with any obstruction in the lower bowels, they have an opportunity of extricating their heads and thus of gaining hold of the walls of the intestine. The clearing out of the lower bowels is therefore all-important in treating for tapeworms.

Finally, it is essential that the mixture used for treatment should not be so old that it has lost all its anthelmintic properties.

Disregard of the three details in treatment here suggested will account, I believe, for the majority of the failures in treating for tapeworms.

Dr. Chamberlin well remarks that the symptoms of tapeworm disease are not well defined. If we take all the symptoms ever described for all diseases, shake them up in a hat, and pick out any combination of them at random, we obtain a clinical history of tapeworm disease. In experimenting upon myself with tapeworm infection (Tænia saginata was the species used), the most constant symptom I have noticed is one which I have never seen directly mentioned in any article. During the time of infection, it would very frequently happen as I walked along the street or across the room that I suddenly felt a peculiar sensation almost exactly similar to the sensation one feels upon the sudden descent of an elevator.

Notwithstanding the indefinite clinical picture (its indefiniteness almost makes it definite), I can see no

[1] "The Treatment of Tapeworm, with Report of Cases," Medical Record, liii. (9), August 28th, 1897, p. 313.

[2] "Tapeworm in Men," Medical Record, liii. (11), September 11, 1897, p. 400.

[3] Children.

[4] Original reference not consulted; table is copied from Railliet, 1893, Traite de Zool. Méd. et Agric., i., p. 238.

[5] "Notes on Parasites," 32: "On the Rarity of *Tænia solium* in North America." Veterinary Magazine, ii. (5), May, 1895, pp. 281 to 286.

earthly excuse for diagnosing tapeworm when no tapeworm is present. At the first suspicion of tapeworm a microscopic examination of the fæces should be made. If tapeworms are present and large enough to cause any trouble, they will also be large enough to fill the fæces with their characteristic eggs. If no eggs are found in this examination, we can conclude either that there are no tapeworms present, or that if present they are too young to cause any serious trouble. It is indeed to be regretted that the microscopic examination of the fæces is not so general as that of the urine.

CH. WARDELL STILES, PH.D.,
Medical Zoölogist, Bureau of Animal Industry.
WASHINGTON, D. C.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 16, 1897:

	Cases.	Deaths.
Tuberculosis	205	101
Typhoid fever	44	7
Scarlet fever	115	7
Cerebro-spinal meningitis	0	4
Measles	85	5
Diphtheria	127	15
Laryngeal diphtheria (croup)	4	1
Chicken-pox	8	0

Medical Men in Germany.—Statistics recently published show that the proportion of medical men to population in the leading towns of the German empire is as follows: In Charlottenberg the ratio is 1 doctor to every 624 inhabitants; in Halle-on-Saak, 1 to 684; in Munich, 1 to 778; in Frankfort-on-the-Main, 1 to 785; in Königsberg, 1 to 792; in Berlin, 1 to 807; in Stuttgart, 1 to 810; in Breslau, 1 to 834; in Dresden, 1 to 943; in Hanover, 1 to 974; in Stettin, 1 to 1,042; in Danzig, 1 to 1,064; in Leipzig, 1 to 1,082; in Aachen, 1 to 1,162; in Brunswick, 1 to 1,203; in Dusseldorf, 1 to 1,227; in Cologne, 1 to 1,250; in Hamburg, 1 to 1,284; in Nuremberg, 1 to 1,336; in Magdeburg, 1 to 1,339; in Bremen, 1 to 1,364; in Dortmund, 1 to 1,556; in Altona, 1 to 1,752; in Elberfeld, 1 to 1,960; in Chemnitz, 1 to 1,987; in Barmen, 1 to 2,082, and in Crefeld, 1 to 2,145.—*British Medical Journal.*

Nightsoil and Ashes for Manure.—Experiments made by the farm committee of the town council of Crewe in the direction of mixing crude nightsoil with fine ashes and sulphuric acid proved so successful in 1895 that last year covered mixing sheds and screens were erected for that purpose. The dry ashes are thrown on the screen by hand. The screen is a two-decker, and as it moves the broken crockery, glass, tins, etc., are thrown off to the top screen, whence they are removed and used in road-making. The lower screen catches the combustible matter (chiefly cinders), which is put in the stokehole and used to raise the steam. There is left only the fine ash under the screen, which is wheeled to another part of the shed and spread on iron plates covering the flue leading from a small furnace to the boiler chimney. This small furnace is used for the combustion of paper and large articles which could not conveniently be put in the stokehole, and supplies heat to the flue over which the fine ashes are spread. When the ashes are fairly dry, they are sprinkled with commercial sulphuric acid to the extent of about four per cent. by weight. After a few days the acidulated ashes are wheeled into the mixing-shed and thrown on the top of the crude night-soil, which has been tipped there during the previous night. From an analysis which has been made the manure is found to contain twenty-six per cent. of organic matter.

A Propos of the recent French barber-shop sanitation, the following clipping from the *Medical Press* is of interest: "A proprietor of a barber's shop has very justly been fined £5 and costs for attending to his business while still passing through the peeling-stage of scarlet fever."

Toads.—The ancient belief that the toad was a venomous animal has been lately shown to be not altogether without foundation. The cutaneous glands of the toad do secrete a venom which is in a high degree toxic when introduced into the circulation. The production of venom is by no means confined to the common toad and land salamander, but is met with in allied species, the natterjack and tropical toads, and to a small extent the frogs. The creatures are unable voluntarily to eject the venom, which is secreted only in response to some reflex irritation and has a purely defensive function.—*Science Progress.*

Nitroglycerin in Children.—Dr. Angel Money states in *The Lancet* that nitroglycerin appears to have no toxic effects in infants and small children even in very large doses. He constantly prescribes one minim of a one-per-cent. solution to infants under the age of two years every two or three hours in place of sweet spirits of nitre.

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the United States Marine Hospital service, during the week ended October 16, 1897:

YELLOW FEVER—UNITED STATES.

		Cases.	Deaths.
Alabama, Bayminette	October 14th	1	1
Flomaton	October 14th	4	
Wagar	October 11th	1	
Mobile	October 1st to 15th	77	9
Georgia, Atlanta	October 8th	1	
Louisiana, New Orleans	October 1st to 15th	346	50
Franklin	October 14th	1	1
Mississippi, Biloxi	October 1st to 15th	268	7
Clinton	October 9th to 14th	2	1
Edwards	October 1st to 15th	179	16
McHenry	October 1st to 15th	20	1
Natchez Yuma	October 11th and 12th	9	1
Pascagoula	October 14th	2	
Scranton	October 1st to 15th	122	4
Texas, Galveston	October 9th to 12th	12	
Houston	October 11th	3	0

YELLOW FEVER—FOREIGN.

Brazil, Para	September 18th to 25th	..	5
Rio de Janeiro	August 28th to September 11th.	1	1
Cuba, Cardenas	September 25th to October 2d	..	1
Cienfuegos	September 26th to October 3d	..	2
Sagua la Grande	September 18th to October 2d	75	6
Jamaica, Kingston	September 18th to 25th	4	2
Mexico, Vera Cruz	October 1st to 7th	3	
U. S. of Colombia, Panama	September 23d to October 3d	1	1

CHOLERA—FOREIGN.

India, Bombay	September 7th to 14th	..	42
Calcutta	August 28th to September 4th	..	6
Madras	September 3d to 10th	..	8

PLAGUE—FOREIGN.

India, Bombay	September 7th to 14th	..	27

SMALL-POX—UNITED STATES.

Alabama, Birmingham	October 3d to 4th	4	(3 varioloid).

SMALL-POX—FOREIGN.

Brazil, Manaos	September 11th to 25th	65	7
Rio de Janeiro	August 28th to September 11th.	13	
China, Hong Kong	August 21st to 28th	..	1
Cuba, Sagua la Grande	September 18th to October 2d	40	2
India, Calcutta	August 28th to September 4th	..	1
Spain, Madrid	September 14th to 28th	..	7
Russia, Moscow	September 11th to 18th	1	
Odessa	September 18th to 25th	1	
St. Petersburg	September 11th to 25th	12	3
Warsaw	September 18th to 25th	..	6

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Original Articles.

ANTISEPTICS IN EYE SURGERY.[1]

BY HENRY D. NOYES, M.D.,

NEW YORK.

FOR operations on the eye, meaning especially extraction of cataract, experience has shown that the usual antiseptic methods of surgery must be modified in several particulars. I can best set forth my own practice and the practice of my colleagues of the New York Eye and Ear Infirmary, under the heads of, first, the operator; second, the instruments; third, the field of operation; fourth, the dressings.

1st. As a rule the surgeon puts on a clean white sack, either over or in place of his ordinary coat. His hands are carefully scrubbed with soap and water, and powdered borax is freely sprinkled on the brush. Special attention is given to the nails, and the borax has a potent effect in getting rid of grease and dirt. After the scrubbing, immersion in a sublimate solution, 1 to 3,000, leaves the hands sufficiently purified for an operation when the fingers do not come in contact with the field, and with the sense of touch unimpaired. The operator will not have need to touch any other part than the lids, and all other contacts are by instruments.

2d. All instruments, except knives and needles, are put in boiling distilled water for about ten minutes, then laid in ninety-five-per-cent. alcohol for ten minutes, and transferred to a clean and sterilized porcelain tray and covered by a towel wet in sublimate solution, 1 to 1,000. The alcohol is used for this purpose only once. Knives and needles are simply plunged for a minute in boiling water and then laid in alcohol with the other instruments. All are very carefully wiped with muslin or cotton wet in alcohol. Sometimes at the last moment a knife or curette or probe may be dipped in a bottle of alcohol and smartly shaken to throw off excess of fluid. If made of platinum, a probe or spatula may be passed through an alcohol flame. Rubbing carefully will cleanse smooth and straight instruments. Forceps, scissors, and speculum, and all instruments having joints and holes are subjected to rigorous treatment before and after an operation. They must be perfectly clean when put away and will then be ready for sterilization when next required. They are stored in metal racks on glass shelves within a tight cabinet.

3d. The patient has a warm bath, and is to be attired in clean clothes for lying in bed. Should there be manifest irritation of the lids or of the conjunctiva, suitable treatment is adopted until a safe condition is attained. It is the habit of some surgeons to bandage the eye for twenty-four hours in order to detect chronic conjunctivitis, and not to operate so long as any secretion exists. The majority of surgeons, and I include myself, are satisfied with inspection to discover the condition of the parts, and regard bandaging as giving occasion to secretion, and so far tending to create what we wish to avoid. A moderate degree of chronic conjunctivitis is common to old persons, and if the secretion is mucoidal and not copious it does not forbid an operation, neither will treatment wholly remove it. Chronic inflammation of the lid borders and ectropion demand effective treatment. Chronic dacryo-cystitis, as is well known, constitutes a serious danger. There is usually no time for ordinary treatment, and the destruction of the sac by cautery or its removal by dissection is doubtless the wisest proceeding, and will demand at least two or three weeks before extraction can be ventured. We do not fail to realize the dangers of the complication when the lacrymal disease is clearly manifest, but I speak from a sad experience when I remember that suppuration may attack the cornea several days after the operation, as the result of dacryo-cystitis which had for years been in abeyance, but was lighted to fresh activity by the reaction of a perfectly normal cataract extraction. One must therefore not be satisfied by negative objective evidence as to lacrymal disease, but also remember to inquire into past history on this point. Bad nasal catarrh has also a dangerous character and might be inhibitory until sufficiently mitigated by treatment. Pterygion as an evidence and complication of chronic conjunctivitis may demand removal and subsequent treatment until no serious irritation remains. It is well known that germs are found in great numbers under the edges of a pterygion, and their hiding-places must be abolished. Supposing the case free from or relieved of the complications specified, and the patient in bed, the parts about the eye are scrubbed with soap and water, special attention being given to the eyebrows, and rinsed off with a sublimate solution, 1 to 3,000. The edges of the lids are carefully wiped with a pledget of cotton dipped in boric-acid solution.

Towels wrung out of sublimate, 1 to 1,000, are wrapped around the head and under the chin. The lids being separated by the speculum, the conjunctival sac is thoroughly flushed with a two-per-cent. solution of boric acid or the physiological salt solution. The stream from the rubber bulb is directed especially into the culs-de-sac above and below, into the semilunar fold, and into the outer angle. Shreds of secretion may be caught by the speculum, and great pains must be taken to remove all such material. By this proceeding all coarse flocculi are removed, and this is all that can safely be attempted. Sublimate solution, 1 to 10,000, is equally admissible and has a coagulating property greater than the above solutions, but in no case is any fluid of an irritating character employed. It is well known that micro-organisms are always present on the normal conjunctiva, and washing cannot remove them, but it does carry away shreds and flocculi in which doubtless plenty of germs are contained. What proportions are harmless and what are pathogenic we cannot know. But all strong antiseptics cause irritation and unfavorably influence the healing process. Perhaps, as Randolph has suggested, this is explained by conversion of harmless germs into others of a pathogenic quality. The anæsthetic solutions of cocaine or any other drug, and in my practice atropine solution, four grains to the ounce, which have

[1] Read in the section of ophthalmology at the meeting of the British Medical Association in Montreal, September 1, 1897.

already been employed, are absolutely sterile and furnished fresh for each operation in half-drachm bottles, corked and sealed, and not used again unless sterilized anew.

At the close of the operation I frequently let the stream from the bulb play forcibly on the wound to wash away clots and débris, and it often forces its way into the anterior chamber. I may gently press open the wound and often succeed in expelling material.

I have given up the practice of irrigating the anterior chamber by a pipette or instrument entered within it. Panas' fluid, the biniodide of mercury, 1 to 20,000, injected into the chamber, I have seen in several instances to bring about patchy opacity of Descemet's membrane, and I have ceased to use it. In flushing the eye, whether before or after the section, the speculum may be lifted from the globe to give the fluid freer access. If, as is usual with me, the speculum has been removed before the lens is delivered, the upper lid is held by a strabismus hook and the lower lid by the finger of an assistant. It is none the less easy to wash off the eyeball.

If prolapse of the vitreous has occurred, the greatest care should be used to excise all that may intrude between the lips of the wound, because it is a most fertile medium of infection. This remark applies to the normal and not to fluid vitreous.

4th. Dressings. The absorbent cotton, the bandage whether of gauze or flannel, the muslin patches, have been kept in an oven for two hours at a temperature of about 300° F., inclosed in a perforated tin box and then are placed in a covered glass jar and are exposed to the air only at the moment when called for. No antiseptic substances are employed to medicate them —reliance is placed upon the efficacy of dry heat and careful seclusion and frequent renewal. If a bandage is to be used, the muslin patch is dipped in sublimate, 1 to 3,000; the dry cotton, as it lies upon the eye before the bandage is applied, is wetted with the same solution. The moist dressing is a comfort to the patient and facilitates escape of fluid from the lids. It is my habit to remove and renew the dressing every twenty-four hours, and under the same precautions. I always assure myself whether a normal process of healing is taking place, and if any sign of infection appears I am prepared immediately to institute treatment. I may remark that the continuous use of water as hot as can be borne, about 110° to 115° F., with cotton compresses, is the effective treatment to stay the progress of suppuration. If there be exudation in the anterior chamber, I usually remove it and may also attempt irrigation by sublimate, 1 to 3,000. I have seldom used the actual cautery or pure carbolic acid on the wound, and in most cases the degree of reaction forbids much interference beyond the use of hot fomentations.

Within five years in my private practice two cases have occurred in houses where at the time of operating I have discovered that there was a foul water-closet in the vicinity of the patient's room. I adopted all available precautions to prevent mischief in the details above narrated, and ventilated the rooms thoroughly before operation, yet suppuration attacked the wounds. One eye escaped unharmed. The eye of the other patient was badly damaged. In such cases the pernicious germs must be in the air in too great numbers to be dispelled or neutralized, and the lesson is to refuse to operate in places of such unsanitary surroundings. Whatever exceptions may seem to invalidate the rule, it is certainly the wisest and most salutary for the patient to restrict operations to properly constructed and properly administered hospitals. It is evident that in eye surgery we are limited in great degree to measures of asepsis rather than of antisepsis, and that our attention must be given chiefly to the purity of the hands and especially of the instruments, the solutions, and the dressings.

THE PRECIPITATION OF EARTHY PHOSPHATES FROM URINE BY HEAT.

By J. B. NICHOLS, M.D.,

THE frequent appearance of a cloudiness or precipitate upon boiling urine, clearing with the addition of acid, is a phenomenon familiar to those who have had the least experience in the examination of this fluid. Some explanations have been offered as to the cause of the precipitation, most of them in a measure true, but no one of them adequate alone to account for all the phenomena which present themselves. The subject is usually mentioned very briefly and imperfectly in the standard works on the urine, and it seems generally to be little understood. It is the purpose of this paper to present the results of a study of this point.

The phenomena present in the ordinary manipulations of urine are these: On being heated in a test tube, as in testing for albumin, to a point at or near the boiling temperature, a white cloudiness or precipitate appears in some (not all) specimens of urine, which clears up when a drop or two of acid is added —a reaction which distinguishes phosphates from an albuminous precipitate. If the urine be cooled again after the cloudiness has been developed by boiling, the precipitate is totally or partially redissolved, and the fluid clears either entirely or in part.

Composition of the Precipitate.—The precipitate thus thrown down by heat consists of phosphates of calcium and magnesium. Some observers have asserted that calcium carbonate, calcium sulphate, calcium oxalate, and a proteid compound also occur in the precipitate (Sommer and Scharling, Stokvis, Méhu), while by others the presence of magnesium phosphate has been denied and ignored. In a couple of analyses made by me, the precipitate being very profuse, I found the phosphates of both calcium and magnesium present, while carbonates and sulphates were absent. The magnesium phosphates being more soluble than those of calcium, it is probable that the calcium salt might be present alone in cases in which only a slight precipitate is produced by heat; the carbonate, sulphate, and oxalate of calcium are probably precipitated in boiling urine only exceptionally, if ever, while proteid substances would be absent in non-albuminous urine.

The "earthy phosphates" which occur in the urine are the orthophosphates of calcium and magnesium. These phosphates are as follows:

$CaH_4(PO_4)_2$, variously called tetrahydro-calcic phosphate, acid calcium phosphate, dibasic calcium phosphate, monocalcic phosphate.

$CaHPO_4$, monohydro-calcic phosphate, monobasic calcium phosphate, dicalcic phosphate, neutral calcium phosphate.

$Ca_3(PO_4)_2$, tricalcic phosphate, normal calcium phosphate: it is also frequently called basic calcium phosphate, though, it would seem, from the strict meaning of the term, inaccurately.

$MgH_4(PO_4)_2$, tetrahydro-magnesic phosphate, monomagnesic phosphate, acid or dibasic magnesium phosphate.

$MgHPO_4$, monohydro-magnesic phosphate, dimagnesic phosphate, neutral or monobasic magnesium phosphate.

$Mg_3(PO_4)_2$, trimagnesic phosphate, normal or "basic" magnesium phosphate.

These phosphates are readily transformed from one to another by changes in the surrounding conditions; they exist in the urine in rather indefinite proportions, varying according to circumstances. In general, they are only slightly soluble in pure water, the normal salts being least and the dibasic salts most soluble; the magnesium phosphates are somewhat more soluble than the calcium phosphates. They are quite soluble in acid fluids, even if only slightly acid. Certain neutral salts, as sodium chloride, also have considerable solvent power over the earthy phosphates. Their solution in the urine is believed to be chiefly due to the presence of acid salts, especially acid sodium phosphate, NaH_2PO_4, to which the acidity of the urine is generally mainly attributed, also to CO_2, NaCl, etc. The earthy phosphates are insoluble in alkaline media, and hence are precipitated from the urine upon the addition of alkalies.

Cause of the Precipitation.—Numerous explanations have been offered as to the cause of the precipitation of the earthy phosphates from urine by heat.

1. The appearance of the precipitate when urine is heated and its re-solution on cooling readily suggest the hypothesis that the earthy phosphates are less soluble in hot than in cold media. This explanation is offered by Dalton, Roberts, Kober, Fowler, and Woody, and, partially, by Jones. It is perhaps a superficial conclusion and not based on critical investigations (which in this case, indeed, present peculiar difficulties); yet in the various discussions of the subject which I have found I have never seen this view specifically denied or questioned. It is certainly very unusual for the solubility of solids to decrease with heat, but such cases, as that of calcium hydrate, occur. While this factor may possibly be operative, and perhaps in high degree, the occasional failure of the precipitate entirely to redissolve on cooling shows, however, that it can not be the sole element involved in the case of the urine.

2. One of the chief explanations of the precipitation of the phosphates by heat is based on the supposition that the chemical nature of the phosphates varies with changes of temperature, less soluble salts being formed by heat. This theory, which is generally attributed to Scherer, has been held or concurred in by Carles, Huppert, Jones, Ott, Parkes, Schaffner, Smith, Stokvis, Van Nüys, and Wynkoop, and quoted by numerous others.

According to Huppert's revision of Neubauer and Vogel's work on urine analysis, which apparently presents the best chemical knowledge of the subject, the solubilities of the earthy phosphates and the changes effected in them by heat are as follows: $CaH_4(PO_4)_2$ is soluble in about 700 parts of pure cold water; $CaHPO_4$ in about 6,700 parts; $Ca_3(PO_4)_2$ in about 100,000 parts. $MgH_4(PO_4)_2$ is quite soluble in water; $MgHPO_4$ (anhydrous) in about 1,000 parts of cold water; $Mg_3(PO_4)_2$ (the freshly precipitated amorphous salt) in about 5,000 parts. Their solubilities are increased in the urine by the presence of acid and neutral salts, which also retard the changes brought about by heat. Dibasic phosphate, if in sufficiently concentrated solution, on being heated, partially breaks up into phosphoric acid and monobasic phosphate, thus:

$$CaH_4(PO_4)_2 = H_3PO_4 + CaHPO_4.$$

The monobasic salt being much less soluble remains partially undissolved. Owing to the insufficient concentration of the solution of $CaH_4(PO_4)_2$ this reaction is not supposed to take place in the urine. On heating sufficiently concentrated solutions of the monobasic salts, they partially break up into the dibasic phosphates, which remain in solution, and the normal phosphates, which being only slightly soluble are partially precipitated, thus:

$$3(CaHPO_4) = CaH_4(PO_4)_2 + Ca_3(PO_4)_2.$$
$$3(MgHPO_4) = MgH_4(PO_4)_2 + Mg_3(PO_4)_2.$$

The chemical theory of Scherer and others, then, is this: On heating urine, if the earthy phosphates are in sufficiently concentrated solution, the monobasic salts partially break up into the insoluble normal phosphates, which precipitate, and the soluble dibasic phosphates. On cooling, the reverse process is supposed to take place and the precipitate wholly or partially disappears. Under the conditions present in the urine the occurrence of any changes in the dibasic phosphates is disregarded.

According to this theory, accompanying the formation and precipitation of normal phosphates there should be an increase in the acidity of the solution due to the increased quantity of the acid dibasic phosphates formed. That boiling increases the acidity of urine which precipitates phosphates on heating has been asserted by some observers, and this is confirmatory of the hypothesis under consideration. Other observers have not found this increase of acidity; and Brett asserted that it is apparent rather than real, and is due to a more marked action of fluids upon litmus paper while hot. My own experiments have been too few to warrant any definite conclusion as to the relative acidity of such urine while hot; still, I have not been able to find any increase in the acidity over what it was before boiling. I have constantly found boiled urine after cooling to be materially diminished in acidity. It is worthy of notice that an increase of acidity would probably promote the solution of the normal phosphates formed.

By adding to a solution of $CaCl_2$ or of $MgSO_4$ one of Na_2HPO_4 (not in excess), and filtering away the precipitates, clear solutions free from CO_2 will be obtained, containing phosphates of calcium and magnesium respectively, which, on boiling, will give precipitates that will clear partially but not wholly on cooling. This result may in the case of fresh solutions be partly due to a more active reaction between the sodium phosphate and the calcium and magnesium salts taking place under the influence of heat, resulting in an increased production of calcium and magnesium phosphates; but aside from this it cannot be explained on any other theory yet offered than that of a chemical change in the earthy phosphates being effected by heat. This theory is, therefore, at least in part, probably true with respect to the occurence of the phenomenon in urine. That it is the chief, or even a prominent, factor in the case cannot, I believe, be affirmed until it is shown that these phosphates are not absolutely less soluble in hot than in cold fluids.

3. It has occurred to me that the supposition (hinted at in the preceding paragraph) might be entertained that under the influence of heat a more vigorous reaction might occur between the sodium and potassium phosphates and calcium and magnesium salts other than phosphates in solution in the urine, resulting in an increased formation of the earthy phosphates. This supposition may be dismissed with the remark that these phosphates may be precipitated by heat from artificial solutions in which no other phosphates are present, and that in the urine calcium and magnesium do not normally occur to any extent except as phosphates.

4. Salkowski about 1883 presented the theory that calcium phosphate occurs in the urine in a weak combination with sodium or potassium phosphate, which is broken up by heat, causing the calcium phosphate to separate and precipitate. No other authority appears to have accepted this view, and it has been combated

by Smith. As the precipitation by heat may occur in artificial solutions in which no sodium or potassium salts are present, this theory may be dismissed from consideration.

5. After prolonged heating the precipitate, or its persistence after cooling, may be partially due to loss of fluid by evaporation. This, however, cannot account for the precipitation as it occurs in the ordinary brief boiling in a test tube.

6. An explanation of the phenomenon in question which has gained considerable currency is that the earthy phosphates are, partially at least, held in solution in the urine by free carbon dioxide, CO_2, and that upon its expulsion by heat they are precipitated. This theory was first presented by Brett, in 1836; it has been held also by Heller, Landois, Loebisch, Neubauer, Salkowski and Leube, Tyson, Ultzmann and Hofmann, Vogel and Zülzer.

Carbon dioxide dissolved in water gives it a degree of acidity, due to the presence of virtual carbonic acid, H_2CO_3. The gas is expelled from watery solution by heating; it may also be driven out with some facility, without heat, by vigorous agitation. The earthy phosphates of the urine are soluble in water containing CO_2, as in other acid media; and a permanent precipitate is obtainable in such solutions on dissipating the gas either by heating or, to a less extent, by vigorous agitation. Free CO_2 is a normal ingredient of urine; and the natural inference follows that it has some solvent influence over the earthy phosphates there and that its expulsion by heat or otherwise would tend toward their permanent precipitation.

The acidity of urine is usually (after the fluid has cooled, at least) materially and markedly diminished by boiling. This fact, pointed out by Brett in 1836, I have verified by repeated trials, determining the acidities by titration with decinormal sodium hydrate solution, phenolphthalein being used as the indicator; the color of urine interferes somewhat with a close estimation of the point of neutralization when phenolphthalein is used, but the results were sufficiently accurate for comparative purposes. Within certain limits it appears that the longer the heat is applied the greater is the decrease of acidity and the more profuse is the precipitation. I have also been able to effect a slight diminution of the acidity of urine by vigorously shaking it, though I have never produced a precipitate in this way.

It is probable that the decrease of acidity of urine caused by heating is due to the expulsion of CO_2. From *a-priori* considerations precisely that result is to be expected from the presence of CO_2 in the urine; reasoning by exclusion there is no other acid principle in the urine upon which heat is capable of producing so marked and rapid an effect; and the behavior of urine in this respect corresponds closely with that of solutions of CO_2.

The expulsion of CO_2 and the diminution of acidity caused by heating urine, with the resultant decrease of solvent power over the earthy phosphates, readily suggest themselves as a cause of the precipitation of the latter. Moreover, I have found the precipitate produced by boiling when the urine is fresh (CO_2 being then present) to be more profuse than on subsequent boiling (when CO_2 is absent) after the first precipitate is filtered out. The re-solution of the precipitate on cooling, and the fact that turbidity can be produced by heat in solutions of the phosphates free from CO_2, on the contrary, show that the expulsion of this gas is not the chief cause of the precipitation; but it must have some action in the case, especially, perhaps, in the instances in which the precipitate does not entirely redissolve on cooling.

A cursory investigation was made to determine whether the expulsion of CO_2 might not account for the occasional precipitation, by heat, of the carbonate, sulphate, and oxalate of calcium reported by some observers. Calcium carbonate is somewhat soluble in water containing CO_2, and is precipitated by heating; but I could produce no similar result with the sulphate or oxalate. Calcium carbonate is also precipitated on boiling solutions of calcium bicarbonate or calcium carbamate, which may under certain unusual circumstances occur in urine.

7. The transformation of urea to ammonium carbonate by heat is an old explanation, attributed to Henry, of the precipitation of the earthy phosphates, and has recently again been presented by Shattock. The re-solution of the precipitate on cooling is fatal to this theory; also the fact that the precipitation may occur in solutions free from urea. Heat, it is true, slowly decomposes urea, and if the ammonium carbonate produced remained in the urine the effect would be a decrease of acidity; but the heat that acts on the urea also drives out the NH_3 and CO_2, and it is hardly conceivable that under ordinary circumstances ammonium carbonate could remain in the fluid. The precipitation after prolonged boiling, cited by Shattock in favor of his theory, is probably due to evaporation of the fluid.

8. The theory that the earthy phosphates are held in solution in urine by ammonium chloride, whose decomposition by heat causes them to be precipitated, was presented by Rees and Barlow in 1836, but has received no support. This hypothesis may possibly be correct enough in a degree so far as artificial solutions are concerned, but it can have little share in the explanation of the phenomenon as it occurs in the urine, for the following reasons: The clearing of the precipitate on cooling alone overthrows it. Ammonium chloride occurs in normal urine only in minute proportion, and its solvent influence on the earthy phosphates is insignificant in comparison with that of sodium chloride and the acid salts of the urine. The earthy phosphates give a precipitate on heating also when dissolved in an aqueous solution of sodium chloride, which is certainly not dissipated by boiling; and the same precipitate is obtainable in numerous other artificial solutions containing no ammonium chloride. Rees stated that the acidity of urine is increased by boiling, and accounted for it by loss of ammonia.

Among the experiments made by me the following may be cited for its general bearing on the subject: A quantity of earthy phosphates was obtained by adding sodium hydrate to urine, and filtering, washing, and drying the precipitate at room temperature. A saturated solution of these phosphates was made in water containing CO_2; on boiling in a test tube a profuse precipitate was obtained, clearing somewhat but still marked on cooling, and about half the CO_2, as determined by volumetric acidimetry, was expelled; after vigorously shaking in a test tube a slight precipitate was obtained, the CO_2 being decreased one-half. A saturated solution of the phosphates was made in a solution of NaH_2PO_4 of a strength about equal to that of the urine; on boiling in a test tube a profuse precipitate appeared, which on cooling was nearly or entirely redissolved, the acidity of the solution not being diminished; on dilution with about double the amount of the NaH_2PO_4 solution no precipitate occurred on heating. A solution of the phosphates was made in the above-noted solution of NaH_2PO_4 to which CO_2 had been added; on boiling a profuse precipitate was formed, which cleared only partially on cooling, most of the CO_2 being expelled; no precipitate could be obtained by brisk agitation, although CO_2 was driven out to the same extent as by boiling. A saturated solution of the phosphates in one-per-cent. solution of NaCl gave a slight precipitate on

boiling, clearing when cool. It thus appears that the precipitate forms on heating whether CO_2 is present or not; but when it is present the precipitate is more persistent on cooling. The expulsion of CO_2 by shaking has much less effect in producing the precipitate than has heating.

From all the considerations above presented the following conclusions seem justified: The precipitation of the earthy phosphates from urine by heat is mainly due either (*a*) to their chemical nature being altered by heat, less soluble salts being formed, while the process is reversed on cooling and the salts redissolve; or (*b*) to their being less soluble in hot than in cold media and being therefore thrown down by heat, redissolving on cooling. Possibly both these factors are operative, and the former one certainly is to some degree. Another cause, which is perhaps especially manifest in those cases in which the turbidity persists after cooling, is the expulsion of CO_2 and loss of acidity caused by heating, which diminish the solvent power of the urine over the earthy phosphates. After prolonged boiling the precipitate or its persistence on cooling may be also partially attributed to evaporation of a portion of the fluid.

This statement does not entirely clear up the obscurity of the subject, but it defines the sphere of operation of certain factors and limits the field within which the true main cause of the precipitation is to be found.

Circumstances under which Precipitation Occurs.—The occurrence of the precipitate depends upon the degree of concentration of the earthy phosphates in solution in the urine; turbidity will be produced by heating only when the concentration is so great that when the fluid is heated the point of saturation is passed. This explains why the phenomenon does not occur with all specimens of urine. If in relatively strong solution, the phosphates will be profusely precipitated by heat, and (especially in connection with the lessened acidity caused by boiling) the precipitate will not entirely clear on cooling; in a less degree of concentration the fluid will become turbid on boiling and entirely clear again after cooling; while in relatively weak solution there will be no precipitate whatever on heating. This view is confirmed by the fact that upon cautiously adding alkali to urine that gives no precipitate on boiling, thus increasing the relative concentration of the phosphatic solution by diminishing the acidity, a point can be reached where the fluid will become cloudy on heating and clear again when cool; and by carrying the process still further a precipitate which persists on cooling can be obtained with heat. A similar result can be obtained by adding calcium chloride, which increases the amount of calcium phosphates present and so augments the phosphatic concentration.

It is to be observed that the concentration of the solution of phosphates in the urine depends upon two distinct factors: (*a*) the absolute quantity of earthy phosphates present, and (*b*) the amount of the substances (acid phosphates, CO_2, chlorides, etc.) which hold the earthy phosphates in solution. Hence the occurrence of the precipitate on heating urine has in itself no significance as to the quantity of earthy phosphates present; it indicates simply their relative concentration in the fluid, and may be due either to excess of phosphates with high acidity of the urine, or, as is usually the case, to low acidity with a smaller amount of phosphates. It is to a slight degree susceptible of a positive or corroborative interpretation, taken in connection with a known high acidity as to the quantity of earthy phosphates, or in the presence of a sediment as to its phosphatic nature. The phenomenon occurs alike in urine from healthy and diseased persons, and has little or no clinical significance.

Literature.—I have been unable to find the original writings of Henry, Scherer, Schaffner, Sommer and Scharling, and Beneke, who have made studies of this subject. Aside from numerous works which make only a bare mention of the phenomenon, the following list exhibits the literature bearing on the subject which I have found:

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The rank and file of the profession manifests the strongest possible feeling against the present dispensary abuses.

THE DIFFERENTIAL DIAGNOSIS BETWEEN MALARIAL AND TYPHOID FEVERS.[1]

By J. F. JENKINS, M.D.,

JACKSON, MICH.

THE difficulties in making a diagnosis between malarial and typhoid fever are in many instances very great, from the fact that typhoid fever presents itself under so many and varied conditions, the type at one time being very marked, at another time assuming many of the phases of malarial fever. Sporadic cases occurring in country districts and very generally in villages are not infrequently diagnosed malarial fever, and doubtless the deaths reported to local boards of health under the head of malarial fever are usually due to typhoid fever.

Dr. Osler states in a paper recently read by him that "north of Mason and Dixon's line physicians are prone to diagnose malaria for other disease; south of the line they are more prone to diagnose other disease for malaria; in both regions it is a source of greater error than any other affection." There are many localities in this State, as well as other States north of Mason and Dixon's line, where malarial fever still prevails, especially during the autumnal months, and it is in these sections that it is so frequently found a difficult question to determine whether the patient has malarial or typhoid fever.

In each and every case the source of infection should be thoroughly investigated, and in many instances such an investigation will give material aid in arriving at a correct diagnosis.

It is seldom that typhoid fever commences with a pronounced chill, while malarial fever is usually ushered in with a chill, more or less severe, followed by high fever; sometimes typhoid fever commences with a distinct chill—that is, with a shaking chill; but the temperature rise is not so abrupt, never reaching 103° to 105° F., as it usually does in malarial fever within the first twenty-four or forty-eight hours. The development of typhoid fever is in the large majority of cases slow and insidious; there are a feeling of weariness, general malaise, some fever, which increases day by day, and under these conditions quinine may be administered in antiperiodic doses and may lessen the pyrexia, but, like the annual overflow of the Nile, it is certain again to make its appearance. In malaria epistaxis is rare, while in typhoid fever in its incipient stage it is frequently present, especially among the young, but seldom occurring in patients beyond the age of fifty. In malarial fever the pulse rate will not be very much increased by taking the patient suddenly from bed and placing him in the upright position, while in the incipient stage of enteric fever the pulse rate is greatly increased by such a change of position. In the early stage of typhoid fever this alteration of position will frequently assist in determining the nature of the fever.

Where the malarial fever prevails, and it is a question whether or not the infection is the product of the Eberth's bacillus or the hæmatazoa of malaria, ten grains of quinine given every three or four hours until thirty grains are administered, and this amount repeated every twenty-four hoursf or two or three days, will materially assist in differentiating the disease. The infection of malaria will be destroyed by quinine, while in typhoid fever the drug may reduce the pyrexia, but it will soon reappear. Among the lagoons of Northern Indiana, more than a quarter of a century ago, the writer followed out a plan similar to the one above mentioned, and frequently found that instead of malarial infection the only factor in the case was the infection of typhoid fever. These fevers commonly had all the characteristics of typhoid fever, excepting that they were invariably accompanied by profuse perspiration. The local physicians termed them "slow fevers," and finally they assumed the name of typho-malarial fevers, but post-mortem examinations whenever made disclosed the pathological lesions of typhoid fever.

The importance of making an early diagnosis in typhoid fever is generally admitted, because the hygienic and dietetic management of the disease is absolutely of more importance than internal medication; the lesion in the alimentary canal often leading to fatal results, even in apparently the mildest form of enteric fever.

Within the past few years the microscope has made us familiar with the typhoid bacillus, and bacteriologists have mde us acquainted with its natural history, its growth, its favorite habitat for development, how it behaves within and without the body, its most favorable conditions for propagation, and how to avoid and destroy the bacilli outside the body. These facts are still leading us to more certain methods of diagnosis, and we may look forward to methods which will be more definite in making out a differential diagnosis of fevers instead of depending upon symptoms.

Ehrlich's test, or what is termed the diazo-reaction, appears to have a limited value. This test, which it is not necessary to describe here, typhoid fever responds to after the first week; it may be used to determine whether the infection is due to the Eberth's bacillus or the hæmatozoa of malaria.

Another means of diagnostic import in fever supposed to be typhoid is in the examination of the stools microscopically for the Eberth's bacillus; if it is found, it is evident the patient has enteric fever.

The serum diagnosis of typhoid fever has been undergoing investigation during the past year, but its practical usefulness is still an unsettled question. The difficulty in Widal's or Johnston's test, as well as others above mentioned, is that it requires an expert, and hence it is almost useless in general practice.

The discovery of the hæmatozoa of malaria by Laveran is at least next in importance to the discovery of the tubercle bacillus by Koch. It has given the medical profession an intelligent concept of malarial fever in its various manifestations, and the literature on this subject has already been cleared of an immense amount of rubbish which has enveloped the medical practice of the past.

The combined infection of Eberth's bacillus and the hæmatozoa of malaria seldom occurs, excepting as it may still linger in the mind of some medical hayseed, who, Rip-Van-Winkle-like, continues to hold fast to the opinion that malarial fever develops into typhoid fever, or is in some way dovetailed into it. On this question permit me to quote Dr. Osler, who states that "among the one thousand cases of malaria and the five hundred cases of typhoid fever which have been at my clinic, almost every one of which has had a blood examination, there has been but one doubtful case of double infection."

Double infection so infrequently occurs that it will seldom enter as a factor in the differential diagnosis between malarial and typhoid fever.

[1] Read at the annual meeting of the Michigan State Medical Society.

Dyspnœa of Uræmia.—

℞ Ether sulph. ..... ℥i.
S. Two or three teaspoonfuls in a little sweetened water.

Or ether can be administered hypodermatically in doses of two or three cubic centimetres, every three hours, and in the intervals it can be given by the mouth. It produces abundant diuresis and calms respiratory spasm.—LEMOINE *and* GALLOIS.

A NEW OPERATION FOR MALIGNANT DISEASE OF THE TESTICLE—THE NECESSITY OF A MORE EXTENSIVE OPERATION THAN CASTRATION FOR CARCINOMA, SARCOMA, ETC., OF THE TESTICLE.

By J. COPLIN STINSON, M.D.,

In deciding on an operation for malignant disease of the testicle, the problem is to remove the disease thoroughly. Castration is an operation which can be performed with very small danger to life, but whether for sarcoma or carcinoma the operation is not attended by large success, so far as complete cure is concerned. There is some evidence that it may be attended by permanent success, and there is still further evidence that the operation may be an excellent palliative measure, even when there is no cure. Thus in ninety-nine cases collected by Butlin there were four deaths from causes directly connected with the operation. Many of the patients were not traced, but there were five cases of sarcoma well at the end of from twenty months to two years, and two cases of carcinoma without recurrence at the end of forty-two months and one hundred and eight months respectively. While these results are encouraging, yet I am sure that with a radical operation still more encouraging results can be obtained. The objects of my paper are to describe an operation which will yield a greater number of permanent cures than will castration, and to report a case in which I operated by the radical method.

The following structures should be removed by operation in order to give our patient the best possible chance for permanent cure:

1. The diseased testicle and its coverings.

2. The portion of the scrotum containing the diseased organ, including in addition the raphe of the scrotum and the septum scroti.

3. The spermatic cord, its vessels, etc., as high as the internal inguinal ring.

4. The inguinal glands, fat, adhesions, etc.

The operation is performed as follows:

1. An incision is made from the external inguinal ring downward and inward to the beginning of the raphe of the scrotum. The cut follows the sulcus between the scrotum and penis. It is then carried downward and backward, parallel with and external to the raphe of the scrotum, and terminates at the scroto-perineal junction. The incision divides the tissues of the scrotum.

2. A second incision, which is slightly curved, is made from the external ring downward, following the sulcus between the scrotum and the thigh and the perineum. It terminates by joining the first incision at the scroto-perineal junction. This also divides the layers which form the scrotum.

3. The scrotum, the testicle, and its coverings, the median raphe, the septum scroti, etc., are as a mass freed from all their attachments except to the cord, up to the external inguinal ring. Any masses of fat, glands, adhesions, etc., should also be freely removed with these structures.

4. A third incision is made parallel with and about one-half an inch above Poupart's ligament, from the external ring to one-half an inch above the internal inguinal ring. It divides the structures superficial to the aponeurosis of the external oblique. The latter is well exposed and divided in the direction of its fibres to about one-half an inch above the internal ring. The cut edges are lifted and freed from the structures beneath, so as to expose the cord, etc., up to the internal ring. The cord, etc., are separated from the surroundings from the external ring to high up within the internal ring, care being taken also freely to remove all mass of fat, glands, adhesions, etc., in the rings and canal.

5. Make moderate traction on the cord so as to draw it out as far as possible from the internal ring, and secure it high up within the internal ring with a clamp. Divide below it. Any bleeding vessel or vessels are ligated separately with fine catgut. The raw surface of the stump is covered over by bringing together with continuous sutures of catgut the cut edges of the external coat of the cord. When the clamp is removed the sutured edges of the cord at once slip back into the abdomen.

6. The cut edges of the aponeurosis of the external oblique and the pillars of the external inguinal ring are brought together with continuous sutures of chromicized tendon or chromicized catgut.

7. The flap of skin covering the inguinal glands is dissected downward and all of the inguinal glands and fat removed. If the glands are adherent to the skin, the latter is also freely removed.

8. The flap is now replaced and the cut edges of the skin of the groin and the scrotum are united with fine silk sutures without drainage. A small strip of bichloride gauze may be inserted for a short distance in the lower angle of the scrotal wound and left in place for a day or so. All hemorrhage should be arrested before the wound is closed.

Dressings and after-treatment: Bichloride-of-mercury gauze or sterilized gauze is placed next to the wound. The dressing is held in position by long strips of adhesive plaster, then a layer of cotton, and then a firm spica and T-bandage. Care should be taken to avoid infection from urine and fæces; keep the patient in bed two weeks. Dress the wound on the seventh day or earlier, if there are indications when the silk sutures are removed. The firm dressings on the inguinal region are not removed till one month after the operation.

In June, 1897, I had an opportunity of operating on a patient for carcinoma of the testicle by this radical method.

History of the patient: Age, forty-five years; general condition good. In the last week of May or the 1st of June, 1897, he noticed that something was the matter with the left testicle, which was about twice the normal size. Some days afterward the skin in front of the body of the testicle broke down and a sloughy mass formed. It was not painful. I saw the patient June 23, 1897. Examination showed the left testicle enlarged to about three times the normal size, not painful or tender to the touch. In front and connected with the skin was a sloughy convex surface, about an inch and one-quarter in diameter. The mass was part of the testicle and bled freely on being picked with thumb forceps. The skin for about one-quarter of an inch around the protruding mass was moderately hard and indurated; the edges were raised and appeared to grip the mass. The cord was thickened. The glands in the left groin had been removed about a year before for chancroidal infection and abscesses. The prostate appeared to be normal for a man of his age. I made operation June 24, 1897. Chloroform was administered by the drop method by Dr. G. Gross. The steps of the operation were the same as described above, with two exceptions: the skin incision made from the external ring downward and inward to the penis, and external to the raphe of the scrotum, was carried higher on the root of the penis and encroached on the scrotal tissue of the normal testicle for about one-half an inch. This was done in order that the incision should be removed as far as possible from the indurated skin. No dissection was done for the removal of glands in the groin, as these had been extirpated about a year before. The stump of the cord was whipped over with

fine chromicized catgut. The cut edges of the aponeurosis of the external oblique and the pillars of the external inguinal ring were united with chromicized catgut sutures. The cut edges of the skin of the groin and the scrotum were brought together with fine catgut. A narrow strip of moist bichloride gauze was inserted for a short distance in the lower angle of the scrotal wound. This strip was removed thirty hours after the operation, and the dressings were reapplied. The wound healed by primary union. Recovery was uninterrupted. The patient will be kept under observation. I believe that in treating cases of malignant disease of the testicle a more thorough operation than castration should be performed.

In the radical operation I describe, the incisions are made wide of the diseased organ. The cord, etc., are removed as high as possible away from the testicle, while the thorough extirpation of the inguinal glands, fat, etc., also removes channels by the way of which infection might spread or in which infection is already present. No incision is made into diseased tissues, and thus secondary infection is prevented. The septum scroti and the raphe of the scrotum are removed, as they are formed by the junction of the series of coverings which invest the testicle and which make up the different layers of the scrotum. Even with such free removal of the scrotum there is quite sufficient of this tunic left, so that its cut edges can be brought accurately together without tension, and without making the slightest degree of pressure on the testicle. This is due to the extreme flabbiness of the scrotal tissues. There is every reason why this, the thorough operation, should be performed. It can be easily and quickly done. The mortality should be at or about *nil*, and I am sure time will show, if our cases of malignant disease of the testicle are operated upon by this radical method, that we shall have a large percentage of permanent cures.

326 Kearny Street.

THE TREATMENT OF HYDROCELE BY THE INSERTION OF STERILIZED CATGUT WITHIN THE TUNICA VAGINALIS.

BY GEORGE G. VAN SCHAICK, M.D.,

NEW YORK,

SURGEON AND PATHOLOGIST TO THE FRENCH HOSPITAL; SURGEON TO THE ST. VINCENT DE PAUL ASYLUM.

The treatment of hydrocele by the insertion of sterilized catgut within the tunica vaginalis is due to a French surgeon, to the best of my belief. I first heard of it in France a couple of years ago, but have failed to find the name of its originator.

The object of this operation is to cause an aseptic inflammation of the serous lining of the tunica, resulting in a modification of its secreting power. This is also obtained by the injection of iodine and other irritants, and by scoring the serous lining by means of nitrate of silver fused upon a probe. It would appear from the results I have obtained that the use of catgut is commonly followed by less pain than the other methods, and the success of the treatment is fully as good.

The technique consists simply in the following steps: Thorough disinfection of the scrotum, which is tapped with a small trocar, in order to secure a rather slow evacuation of the fluid. A catgut ligature of medium size is introduced within the cannula as soon as the serum begins to flow, and rapidly pushed within the tunica through the cannula, until about eight inches has passed through it. When all the liquid is evacuated the cannula is removed, and the catgut hanging out of the puncture is snipped off with scissors as close as possible to the scrotum. By manipulation of the scrotum we secure the complete entrance of the catgut within the tunica. The wound is then sealed with collodion.

If the asepsis has been perfect there is no possibility of the occurrence of any infection. The rather nauseating pain that sometimes occurs after iodine injections is commonly absent. No febrile movement occurs. I have so far observed nine cases, whose histories may be briefly given:

Case I.—A. W——, carpenter, aged forty-one years, had noticed a swelling for six months, but never did anything for it. The scrotum was tapped and the catgut inserted in October, 1894. Seven ounces of liquid flowed away. The next day the patient said he had felt rather uncomfortable during the night, but had no severe pain. A week later there seemed to be a slight amount of fluid in the tunica. This rapidly disappeared. Inquiry six months afterward revealed the fact that there had been no return.

Case II.—L. C. H——, lawyer, seen in November, 1894. He came to the office saying that his regular physician was out of town, and his hydrocele must be tapped at once. He had been tapped thirteen times before, the hydrocele having existed for eight years. He accepted my proposition to use the catgut. Nine ounces of fluid was evacuated. The operation was followed by slight occasional pain for two weeks. Inquiry in August, 1897, resulted in the answer that he had never had a recurrence.

Case III.—F. B—, saloon-keeper, has had a hydrocele for five years; it has been tapped six times. Insertion of catgut in March, 1895, appeared to cause more pain than usual, but the patient was very emotional. Fourteen ounces was evacuated. The man complained of sharp pain during the night, and insisted upon receiving a hypodermic injection of morphine. He said he felt much worse than after simple tapping, and remained in bed for four days. At the end of this time the tunica appeared to contain nearly as much fluid as before, and the patient was much discouraged. A fortnight later the fluid had all disappeared, and has not returned at the present writing.

Cases IV., V., and VI.—Each of these patients had a hydrocele of moderate size, and all were cured without any disagreeable complications.

Case VII.—F. R——, musician, has had a very large hydrocele for ten years, and thinks it has been tapped fourteen or fifteen times. In this case I used a rather large size of catgut (No. 6 instead of No. 3, as usual) and introduced about twelve inches. The operation was performed in October, 1896. Seventeen ounces of fluid was evacuated. The patient felt no pain until the next day, when he complained of a dull aching. Some fluid returned, and within a week the tunica appeared to contain about seven or eight ounces. The testicle then began to swell, and remained very large for three weeks, but caused no pain. At the end of this time, during which he was seen in consultation by Dr. James E. Kelly, this condition rapidly subsided, and the hydrocele has not yet recurred. During the whole time there was no evidence of sepsis, and I attribute the trouble to an exaggerated irritability of the parts.

Cases VIII. and IX.—These patients were both seen in February, 1897, and had hydroceles of moderate size. There was no recurrence after treatment.

One other patient operated on last month appears to be doing very well, but the case is too recent to be included in the list.

This little operation is one of great ease and simplicity, and certainly has given excellent results as far as I have had an opportunity to try it. No one who is not certain that he can obtain perfect asepsis in every detail should undertake it, but in careful hands it can

hardly give rise to any severe complication, and is worth trying in every case in which the Volkmann or other cutting operation is refused by the patient.

23 West Thirty-Seventh Street.

TROUBLES ARISING FROM PHIMOSIS, WITH REPORT OF CASES.[1]

By F. D. REESE, M.D.,

Oneland, N. J.

I do not intend to weary you with a long paper on this subject, for Dr. Sayre in 1870 and others since have written too well and explicitly for me to add to their accurate and exhaustive observations. But I believe that it is well for us occasionally to be reminded of the evils that are due to neglected phimosis.

Phimosis is an elongation and constriction of the prepuce, making it difficult or impossible to expose the glans penis. It is quite probable that convulsions are the most frequent complication due directly to this condition. As Peterson says, an infant is a bundle of nerves and nerve centres and reflexes, in a state of great activity, prepared to receive, store up, and re-energize a world full of new impressions suddenly thrust upon it. The continual irritation of the nerves from accumulation of confined smegma and subacute inflammation of the mucous lining of the prepuce overbalances the inhibitory action of the higher motor centres, and causes convulsions.

These are called reflex spasms, because the nervous irritation does not arise primarily in the higher motor centres, but in the peripheral nerves of the genital organs. Then, if this is the case, we as physicians, to be faithful to our charge, should examine the penis of every boy baby at his birth, and if there is a congenital phimosis or an adherent prepuce it should be relieved at the earliest opportunity. What is there more pitiable and lamentable than a confirmed epileptic?

Hare, in his essay on "Reflex Epilepsy," says: "Further than this, the mere temporary irritability of a cicatrix does not throw the patient into convulsion after convulsion immediately, but the convulsive condition, having once been begun by such a cause, may be brought back even when no irritation longer exists of an acute form, by some central disturbing mental condition entirely separated from the periphery."

What he says in regard to irritability due to a cicatrix is equally true of any other cause of irritation. And further, he says the law may be laid down as an almost unvarying one, that every nervous act is followed by other similar nervous acts, rapidly or slowly, according to the severity and frequency of the first acts; and if this predisposition be once set up, the subsequent acts may readily be excited by agents which primarily would have produced no effect.

Then, if this law be true, and I have no reason for disbelieving it, for experience confirms it, we should remove every irritation that might be a primary cause of convulsions, of whatever form or wherever found, whether it is a depressed portion of the skull, errors of refraction, tumors of the rectum, or congenital phimosis.

To show that congenital phimosis does cause reflex spasms, I will report the two following cases:

William W——, aged two and one-half years, family history negative, was always a colicky, crying baby, well nourished, but undersized; bowels regular. During six months the following symptoms developed: He became restless at night, jumping up in bed and staring as if frightened; also in the daytime he would stop and stare and lose himself for an instant. These spells soon developed into complete spasms, numbering three during the night and one every two or three hours in the daytime.

Upon examination I found a constriction of the prepuce, with adhesions to the glans penis. In the absence of any other pathological condition, I concluded the spasms were of reflex origin and due to the congenital phimosis and adhesions.

I operated April 23, 1896, freely exposing the glans and turning out the confined smegma. The spasms began immediately to occur less often, and on May 29th, one month and six days after the operation, he had his last spasm. Since then he has been as well and rugged as any child could be.

On December 5, 1894, I was called to see Master McD——, aged three and one-half years. He was born of healthy parents, but was very much under size and suffered from spasm of the right sterno-cleido-mastoid muscle, with head turned to the right, jerking of the eye muscles, and squinting. He complained of colic and had indigestion and malnutrition. He was also restless, irritable, and anæmic. An examination revealed a congenital phimosis and adhesions of the prepuce. I operated December 15, 1894. There was a gradual improvement from the first. While the boy is still small for his age, he seems perfectly healthy, with a tranquil disposition.

The following case illustrates the influence of preputial irritation upon the disposition:

Howard L——, aged twelve years, family history negative, is small in stature. He has a bright intellect, but formerly did not like to play with his mates of either sex, and was non-communicative and despondent. He complained to his mother of frequent and difficult micturition; he also said to her that he wished he had been made like other boys. He was brought to my office March 20, 1897. An examination revealed a very small penis, with almost complete closure of the prepuce, which was chronically inflamed. An operation was advised, and when the boy was informed of it he said he would gladly have it done if it would make him like other boys. The vesical irritation and difficulty in urinating were relieved at once by the operation, and his whole demeanor has been changed as a result. He has become more communicative and is developing into a leader among his companions.

I am led to believe from my own experience that in many cases hernia claimed to be of congenital origin is due directly to the straining caused by difficulty in urinating.

The next and last case that I shall report is unique, as far as I have been able to ascertain, for it illustrates the possibility and probability that phimosis is at times the primary cause of septicæmia.

Baby R—— was born July 15, 1896, of healthy parents, in normal labor. He nursed the mother's breast. I discovered that the infant had congenital phimosis and advised an operation, but the parents objected. Occasionally I saw the child, and found that he suffered from colic, difficulty in micturition, and constipation.

October 15, 1896, at 7 A.M., I was sent for. The patient had been vomiting, and this was followed by a sinking-spell. His extremities were cold and he was covered with a clammy sweat. The mother said he had been passing pus, tinged with blood, in his urine. The temperature was 102° F., the pulse was frequent, the boy was constipated, and his abdomen was tympanitic. I ordered oleum ricini and gave a digestive ferment; I also had him fed with sterilized cow's milk. There seemed to be no special change after the reaction from the sinking-spell until October 19th, when the patient began to take on an icteric hue.

[1] Paper read before the third district branch of the Medical Association of New York, Norwich, June 8, 1897.

Counsel was called and the opinion was given that it was a case of acute hepatitis. One-tenth grain of calomel was given every two hours, but was of no avail. The vomit became tinged with black mucus and the urine was freely mixed with pus. The child died October 21st, just six days after he was taken ill.

A post-mortem was held a few hours after death, Drs. Higgins and Watson being present. The body was well nourished, but jaundiced; the thoracic organs were healthy. On opening the abdomen the bowels were found empty of fæcal matter, but filled with gas. The stomach contained a little brownish-black mucus; otherwise it was empty. The liver was about twice the normal size, the gall bladder was normal, the spleen was slightly enlarged. The kidneys were lobulated, capsules slightly adherent; the pelves of the kidneys contained urine and pus, and the lining membrane was congested. The bladder was contracted, and its contents and the condition of its mucous membrane were the same as in the pelves of the kidneys. The microscope, in the hands of Dr. Higgins, revealed pus and blood in the urine and congested kidneys.

My theory of the cause of death in this case is as follows: The boy had congenital phimosis which confined the smegma, causing an irritation of the membrane of the prepuce, and finally suppuration, which infected the urethra. This infection extended along the urethra into the bladder, ureter, and pelvis of the kidney, and finally a general absorption of pus took place, causing septicæmia and death.

These cases and others that might be cited appear to enforce very strongly the importance of detecting and removing phimosis. Surgical treatment is often remedial in troubles that might seem very remote, and if generally applied to congenital phimosis would certainly prove in many cases the proverbial ounce of prevention which is better than the pound of cure.

Progress of Medical Science.

Pseudo-Tuberculosis Hominis Streptothrica.—Flexner reports the case of a colored man, seventy years old, presenting extensive consolidation of both lungs and symptoms generally of pulmonary tuberculosis. No sputum could be secured for examination. Death resulting, the lungs were found to be voluminous, but free from adhesions. The entire left lung, with the exception of the anterior edge of the upper lobe, was more or less perfectly consolidated. In those portions in which the consolidation was frank the lung presented an opaque appearance and was grayish in color, and softening had set in. Some of the cavities contained the products of disintegration, but all appearances of active encapsulation were wanting. Where the hepatization was less complete the pulmonary structure was œdematous and swollen, although perhaps not completely airless, and discrete tubercle-like nodules were visible. The pleura over the hepatized areas was covered with a fibrinous exudate. In the right lung the consolidation was less extensive and more focal in character. The pleural cavity contained a small quantity of pink-colored fluid in which floated flakes of fibrin. The intestines were moderately dilated. The omentum was rolled up, occupying a position beneath the transverse colon and extending across the abdominal cavity. The pelvis contained about half an ounce of fluid of brownish color and mucilaginous consistence. Between the loops of intestine were delicate shreds of fibrin. In addition smaller and larger nodules resembling tubercles, mostly translucent, were scattered irregularly over all the exposed peritoneal surface, being more uniformly distributed upon and within the thickened, rolled-up omentum. The liver and spleen on section exhibited similar nodules. Cover-slip preparations from the lungs stained by Gabbett's method showed no micro-organisms resembling tubercle bacilli. Stained with the carbol-fuchsin were numerous examples of a branching organism in many places collected into clumps or convoluted masses. Cultures from the left pleural cavity and the peritoneum remained sterile. Three separate sets of cultures were prepared from the lungs. In all at the end of twenty-four hours a vigorous growth of bacteria identifiable as belonging to the group of the bacillus coli communis had taken place. An inoculated guinea-pig showed no noteworthy local reaction, nor could the adjacent lymph glands be felt at any time. The animal, however, lost in weight, and died at the end of the seventh week. Upon post-mortem examination none of the lymphatic glands was found enlarged and there was no lesion resembling a tubercle in any organ. Cultures upon glycerin-agar made from several sources remained sterile. Cover slips from the serous cavities, the blood, and the viscera also yielded negative information. In cover slips prepared from the lungs at the time of the autopsy, as well as in sections, the micro-organisms, as stained by the ordinary methods employed for tubercle bacilli, with decolorization by acids, held the dye very loosely. The best method of staining proved to be Gram's or Weigert's modification for fibrin. Two kinds of lesions were present. In the peritoneal cavity tubercle-like nodules were found, consisting of epithelioid and lymphoid cells, with occasional granular cells. Necrosis by fragmentation was not uncommon in the centres of the tubercles, and fibrin, either before or coincident with necrosis, was commonly observed in the nodules. In the lungs also tubercles were present, but were less striking than was a diffuse exudation of leucocytes, plasma, and fibrin, which filled the air-cells, infiltrated the stroma, and tended to undergo necrosis, producing larger and smaller spreading caseous foci of degeneration. The number of masses of the streptothrix was very great and bore an intimate relation to the pathologic process. It is believed that the organism found present in the case reported is a new species, for which the name streptothrix pseudo-tuberculosa is proposed, and further that it is capable of causing in human beings a rapidly spreading and destructive disease resembling florid tuberculosis, for which the appellation of pseudo-tuberculosis hominis streptothrica seems warranted.—*Johns Hopkins Hospital Reports*, June, 1897.

Ulceration and Rupture of Gall-Bladder; Operation; Recovery. Verral (*British Medical Journal*, August 7, 1897, p. 341) has reported the case of a woman, forty-four years old, who had suffered for four days from pain over the upper part of the abdomen, together with nausea. The bowels had acted naturally, but the patient took a laxative. On the following day the bowels moved slightly, but the abdomen was somewhat swollen. Subsequent laxatives, as well as enemata, were, however, without effect. The woman had previously had several attacks of colic, with jaundice, which passed off after the taking of a laxative. She presented the expression characteristic of abdominal disease, and there was much distention, especially in the flanks, where there was also some dulness on percussion. The area of liver dulness was diminished and displaced slightly upward. There was a sense of hardness over the gall bladder. The abdomen moved with respiration. The rectum was empty and ballooned. Nausea was frequent. The tongue was furred but not brown. An incision five inches long, three inches above the umbilicus and two below, was made, and the cavity exposed. It was

bathed in bile-stained fluid, with flakes of lymph on parts of the intestines. On the under surface of the gall bladder was a round hole, about one-third of an inch in diameter; stones could be felt in the bladder, and a dozen or so of small and very sharp fragments and one small perfect stone were pressed through the hole with the fingers. No stones could be felt in any of the ducts. The whole abdominal cavity was searched, but no stones or fragments were found. All but one of the first row of stitches introduced to close the opening had to traverse the whole wall of the bladder, as it was too much thinned for Lembert stitches to hold. This row, being doubled in, was covered by Lembert stitches, taking a good hold, placed at right angles to the first row. The abdomen was freely flushed, a large glass drain carried down to the gall bladder, and the wound closed; but before the edges could be drawn even fairly close, the intestine had to be punctured and gas let out. Calomel was given and followed by a saline, and nutrient enemata were administered every four hours, with one or two teaspoonfuls of hot water by the mouth occasionally. The drainage-tube was removed after forty-eight hours, the gauze drain put into it having been frequently changed. Flatus was passed frequently, with and without a rectal tube. The bowels acted loosely twenty-six hours after the operation, and from this time nutrient enemata were necessarily given up, as they were not retained, and increasing quantities of milk and beef tea with brandy were taken by the mouth; and there was no nausea. The tongue remained moist and the abdominal distention gradually lessened. Suppuration took place around nearly all the sutures, but the wound was soundly healed in less than three weeks.

The Treatment of Coxalgia.—Jalaquier (*La Presse Médicale*, June 26, 1897) is opposed to resection, and thinks that this operation should be reserved for coxalgias complicated with constantly discharging fistulas or abscesses that have resisted punctures followed with injections of camphorated naphthol or of iodoform ether. The operations of the author have been atypical, and he never has felt sure that he has arrived at an entire curettage of the articulation. He agrees with Menard that preliminary injections create a condition favorable to the success of the operation. In the treatment of non-suppurative coxalgias he is not exclusive. In the hospital and where the patient can be closely watched he employs continued extension. When the pains have disappeared at the end of the seventh or eighth month he usually applies a plaster dressing and permits walking on crutches, having the patient wear a raised shoe on the healthy side. When the case cannot be attentively watched Dr. Jalaquier applies the plaster at first after resecting under chloroform, if the position is defective. The author agrees with Brun in saying that abscesses do not follow more frequently in children treated by this method than in those treated by continued extension. The author does not share the fears expressed by Kirmisson relative to resecting under chloroform a coxalgia in defective position with or without dislocation, but he emphasizes the statement that he does not employ this method in coxalgias complicated with abscess. When coxalgias are cured or almost cured in a defective position, subtrochanteric osteotomy gives good results. Of one hundred and twenty-two cases treated at the Trousseau Hospital sixty-seven have presented abscesses. Of the one hundred and twenty-two patients eleven died, seven of meningitis, four of pulmonary complications. This mortality rate is not accurate, as many of the children were not watched to the end. Of the one hundred and twenty-two cases forty-six were treated by simple continued extension, and it is curious that in this series we find five deaths from meningitis and four from pulmonary complications. Eighteen were treated by simple immobilization without resetting; they furnished two deaths from meningitis. Forty-one patients submitted to resecting under chloroform. In this series he found no deaths from meningitis or pulmonary complications. This may be due to good fortune, but the author thinks it is because he has never applied forced resection in children having abscesses or when the general condition was bad. As to the comparative value of camphorated napthol and iodoform-ether in the treatment of abscess, he states that eighteen abscesses were cured after sixty-eight injections of camphorated napthol, or an average of three or four punctures for each patient. Twenty-three abscesses were cured after fifty-two injections of iodoform ether, or about two punctures for each patient. Twenty-two abscesses were cured by the combination of the two agents. Abscesses that proved refractory under camphorated napthol were cured after several injections of iodoform-ether. For these reasons the author prefers iodoform-ether. Some abscesses thus treated become fistulous, but the proportion cannot be exactly given; this occurred only when the skin was ready to break spontaneously. The cure of these fistulas can be obtained if care is taken to avoid secondary infection and resort is had to frequent touchings with a solution of lactic acid, one in three.

Dilatation of the Stomach in Nursing Children.—Comby (*La Presse Médicale*, June 26, 1897) after having studied the symptoms of dilatation of the stomach in children of all ages, found opportunity to measure the gastric capacity on the cadaver in eighty subjects less than two years of age, and has been confirmed in his opinion as to the extreme frequency of dilatation of the stomach in poorly nourished infants. According to his observations the physiological capacity of the stomach, varying of course according to the height and weight of the children, will be as follows: At birth, 30 to 40 c.c.; first month, 50 to 60 c.c.; second to third month, 80 to 100 c.c.; three to six months, 120 to 150 c.c.; six to twelve months, 200 to 220 c.c.; one to two years, 300 to 350 c.c. The results of eighty-two autopsies made at the Hôpital des Enfants Malades, excluding those cases in which the stomach was altered and softened or so enormously dilated that it could not be measured accurately, he found: In twenty-six children from eighteen days to three months of age, six only had a normal or subnormal capacity, twenty had from double to triple the normal capacity. The minimum figures were 45 c.c. in a child of six weeks; in another of two months the condition was that of a newborn or premature child. The maximum was 300 to 310 in children of from two to three months, overfed and having considerable dilatation. Between these figures we find 150, 200, 260, which indicate a more moderate deviation. With nineteen children, aged from three to six months, we find four having a moderate or subnormal capacity. Two of these were fed at the breast and two were tuberculous. All the others had enormous stomachs reaching 300, 330, 340 c.c. or double the physiological capacity. Between six and twelve months six out of twenty-six had normal or subnormal capacity; these were children fed with more care than is usual, or of tardy development or tuberculous. A small and retracted stomach is often found in tuberculous children. Fourteen other children in this series gave capacities of 350, 400, 440, 480, 635 c.c. All these children were fed on the bottle and overfed. The remaining seven between one and two years had a gastric capacity of from 400 to 740 c.c.; this last figure was reached by a rachitic child of two years. As a result of these figures we see that a large majority of the bottle-fed children

entering the hospital have a more or less marked dilatation of the stomach. This dilatation of the stomach is responsible for a slowness in digestion and an autointoxication which results seriously. The use of the stomach pump six or seven hours after the injection of food has demonstrated the presence of curdled milk and putrid matter. At autopsy punctiform ulcerations of the mucous membrane are often found, together with serous products and blackish spots caused by capillary hemorrhage. This dilatation often plays an important part in the pathology of the nursing child and is often the direct or indirect cause of death. Lavage of the stomach with a Nélaton tube, No. 20, 22, or 24, according to the age of the child, is servicable, as it removes putrid food and has a soothing effect. If there is vomiting it usually ceases. Lavage is more easily performed in children than in adults.

The Serum Diagnosis of Typhoid Fever.—Guerard (*Journal of the American Medical Association*, July 3d) concludes: From an analysis of the results which have so far been obtained in the application of the Widal test, it would seem, in the first place, that the serum reaction is by no means specific, in the strict acceptation of the term. In the second place, it is evident that this test has certain limitations in its practical utility, and that unless properly applied with a due appreciation of these limitations it is liable to lead to false conclusions. The chief precautions to be observed in making the serum test are: 1. The virulence of the typhoid cultures employed. 2. The dilution of the serum. 3. The time limit for the reaction. The culture should be of high and known degree of virulence and the bacilli actively motile; the dilution should be in the proportion of at least 1 to 10, with a limit of fifteen minutes for the reaction to appear. Others recommend a dilution of 1 to 30 or 50, with a time limit of one or two hours, but, according to our judgment, there is no special advantage to be gained by using these higher dilutions. The possibility of error, which in either method is sometimes unavoidable, is in our method at least on the right side. It is better to err occasionally in giving a false positive diagnosis than by a negative result to exclude perhaps many true cases of typhoid. In our collective investigation it was found that sixteen of the forty-two observers had used the higher dilutions, 1 to 20 to 1 to 50, while twenty-six had adhered to the original 1 to 10 dilution of Widal. It should be remembered, however, that, aside from this possible source of error, the reaction may also be due at times not to a present but to a past case of typhoid so mild in character that it has been entirely forgotten. The absence of a reaction in any single case does not necessarily exclude the diagnosis of typhoid fever, as the reaction may be delayed till late in the disease. But if on repeated examinations no reaction appears, it is strong presumptive evidence of the absence of typhoid fever. Dried blood and fluid serum give very much the same results, but there is a decided advantage in the use of fluid serum, because the proportions in the mixture with the serum can be more accurately determined. The best mode of procuring the serum is by means of cantharides blisters. When the subject of the serum diagnosis of typhoid fever was first brought before the public, it was hoped that at last the long-sought infallible diagnostic test for typhoid fever had been discovered, which was at once rapid, simple, and suitable for clinical use at the bedside. With the non-fulfilment of these hopes, some physicians have come to look upon Widal's test as practically useless for diagnostic purposes. But, nevertheless, the results which have been obtained by many different observers with an extended application of this method of diagnosis would seem to warrant the conclusion that, in the hands of the expert bacteriologist, it is capable of rendering valuable assistance to the physician, along with the other signs of typhoid fever, in a large majority of cases, although, like other signs of disease, it is sometimes wanting or indecisive.

The Antitoxic and Therapeutic Activities of Human Blood after Recovery from Infectious Diseases.—It has been shown by numerous observers that the blood of convalescents from a number of the infectious diseases contains protective substances, and attempts have been made to use the serum obtained from such blood in the treatment of the respective diseases. Observations of a similar character, covering a period of about a year, have been made at the medical clinic of Professor Leyden at the University of Berlin, by Huber and Blumenthal, with especial reference to scarlet fever, measles, pneumonia, and erysipelas; and the results are embodied in a communication published in the *Berliner klinische Wochenschrift*, August 2, 1897. The antitoxic substances were obtained by mixing at once the blood (from one hundred to one hundred and fifty cubic centimetres) obtained by venesection with a like amount of sterile physiological solution of chloride of sodium, and adding one per cent. of chloroform. After the mixture was shaken and stirred it was put aside for twenty-four hours and permitted to stand, when it was gently expressed through sterile linen and finally filtered through sterile gravel. The resultant fluid was clear, of a dark-red color, was sterile, and remained so permanently on the addition of chloroform. If it be desired to remove the hæmoglobin, a second infiltration is practised, and the fluid then becomes lighter in color. The fluid was found to contain the specific antitoxic substances of the blood of convalescents, and it proved of equal antitoxic activity with serum prepared in the usual manner, while the amount obtained was almost twice as large. About one hundred injections were made, and in no instance did an abscess form. It was found that the fluid had no appreciable effect upon healthy persons. Temporary infiltration, with redness and sensitiveness, often appeared at the site of injection. Of thirteen cases of scarlet fever treated with the filtrate of blood obtained from convalescents, a distinctly favorable effect was observed in three. In the remainder the result was less positive, and none at all was noted in one. The temperature declined between the third and the sixth day in nine cases, as compared with the average of the sixth or the seventh day; reaching normal between the fifth and the tenth day, as compared with the ninth to the eleventh day. The duration of the disease was thus distinctly shortened. The injections were not rarely followed by a transitory elevation of temperature. No serious complication was observed in any of the cases. Of nine cases of measles treated with the filtrate of blood obtained from convalescents, a distinctly favorable effect was noted in two or three. In the remainder the result was rather doubtful. In none, however, was the critical defervescence deferred later than the third day. Of fourteen cases of pneumonia treated with the filtrate of blood obtained from convalescents, death took place in two; in eleven the crisis occurred between the third and the eleventh days. In four a conspicuous decline in the temperature took place following the injections, with improvement in the general condition. Similar results were not obtained with the filtrate of blood from convalescents from scarlet fever and from measles, and not in cases of other kinds treated with the filtrate of blood from convalescents from pneumonia. This filtrate from the blood of convalescents from pneumonia also proved capable of protecting rabbits from infection, although mice were not so protected. The conclusion is expressed that the blood of convalescents

from pneumonia contains antitoxic substances capable of specific activity with regard to pyogenous and other deleterious products of the disease, but not capable of causing or not present in sufficient amount to cause a definite crisis to modify appreciably the morbid anatomic process and to prevent extension of the disease. In ten cases of erysipelas treated with the filtrate of blood obtained from convalescents, no definitely favorable results were noted, and this is in accord with the opinion that antitoxic substances do not appear in the blood after an attack of this disease. Further, complications were not prevented, and the injections were followed by pain, redness, swelling, and infiltration. The fluid appeared, however, to have some local influence, inasmuch as the site of inoculation escaped involvement.

Calomel and Acids.—Ever since calomel was introduced into therapeutics classic authors have drawn attention to the minute precautions that its use requires if one wishes to avoid serious results. It is well known that this substance is unstable. Chemistry teaches that it is easily decomposed upon contact with salts and acids, and is transformed into corrosive sublimate. There are authors who will not admit the truth of this idea. They hold that the cases of poisoning observed are due to idiosyncrasies; others assure us that they have never found sublimate in the digestive tract; others again have a theory of intoxication, and think that the accidents arise from a reaction between calomel and albumin. The dangers that this drug presents cannot be contested, as the experiments of Ottolenghi prove. This author has given calomel in therapeutical doses to dogs and compelled them to drink salts and acids. The animals always presented symptoms of intoxication, which appeared with more rapidity and severity than if the calomel had been taken alone. In these experiments the symptoms were not the same as those observed after the ingestion of corrosive sublimate. Ottolenghi affirms that, contrary to the current opinion, calomel is not decomposed in the stomach; in fact, if we place calomel in solutions of salts or acids, no phenomenon will appear if the temperature is no higher than that of the body, 37° C. That which does not take place in the laboratory does not take place in the stomach in those cases to which we refer. The exaggeration of the toxic effect of calomel after the ingestion of salts or acids arises from the fact that its combination with albuminoid substances contained in the stomach will be facilitated and will yield products much more soluble, so that calomel, which is normally absorbed in very small quantities, will pass in much larger amounts into the circulation, thus provoking signs of grave intoxication.—*Gaz. Méd. de Liège*, June 24, 1897.

Antiseptic Properties of Bile.—Mayo Robson, in an article on "Diseases of the Gall Bladder and Bile Ducts" (London *Lancet*, May 29th), says: "It has been supposed that the bile is an antiseptic fluid which tends to prevent decomposition in the alimentary canal, but, in a series of observations which I published some years ago on a case of biliary fistula, I found that the absence of bile from the intestine of a woman during a period of fifteen months did not lead to any irregular fermentative process, showing that the alleged antiseptic effect of bile on the fæces is probably imaginary. Normal bile is, however, generally sterile. This was proved by Netter, in 1884, who experimented on dogs, and the fact has been confirmed by Gilbert and Girode and later by Naunyn, who found it sterile in two cases within a few hours of death. Frequent inoculative experiments on animals have confirmed these observations, thus explaining a well-known fact that in many cases bile has been extensively poured out into the peritoneal cavity without setting up peritonitis; but in disease of the gall bladder or bile ducts the bile is seldom or never sterile, and is capable of producing severe peritonitis. Bloch has demonstrated that the bile in cases of disease of the gall bladder or bile ducts always contains micro-organisms; hence he thinks it advisable to perform cholecystotomy in two stages, in order to avoid soiling the peritoneum and producing infective peritonitis. When the flow of bile along the ducts is arrested, micro-organisms often invade the gall bladder either from the blood or the intestine. Charcot and Gombault demonstrated the presence of organisms within it after ligaturing the common duct in dogs. This was confirmed by Netter in 1886, who found that twenty-four hours after aseptic ligature of the common duct in dogs, organisms, both staphylococcus and bacillus coli communis, could be cultivated from the bile. The bacillus coli communis exists normally in the human body, and is said to be the most abundant and most constant of the bacteria found in man in health. At one time, as shown by Escherich, it may act as an ordinary pyogenic organism producing local abscesses, at another as an active pathogenic germ producing fatal septicæmia. Mr. C. B. Lockwood found streptococci and other organisms, but no amœbæ coli, in an empyema of the gall bladder. Netter found staphylococci and streptococci present in pathological human bile, and Martin, Gilbert and Girode, and Bouchard have found the bacillus coli communis in the bile in cases of inflammation of the biliary passages. In acute or phlegmonous cholecystitis the walls of the gall bladder are swollen and œdematous, and may be infiltrated with pus. In three out of five of such cases Naunyn found the bacillus coli communis in the pus. Barbacci and others have shown that peritoneal sepsis may occur without perforation of the gut. The spread of infection through the walls of the gall bladder can readily be explained on the same hypothesis, showing how virulent peritonitis may arise in these cases, though there be no perforation. Gilbert and Girode found typhoid bacilli in the pus from a case of empyema of the gall bladder which came on as a sequence of enteric fever. Gilbert and Dominici also assert that they produced suppuration in the gall bladder and liver of rabbits by injecting a culture of typhoid bacilli into the common duct. These biological facts are borne out by the clinical observations of Dr. Murchison and of Dr. Hale White, who have found evidence of inflammation and ulceration in the gall bladder in well-marked and fatal cases of typhoid fever, there being no other cause than the specific disease to account for the trouble. Chiari investigated systematically a series of twenty-two cases of typhoid fever. With the exception of three cases, one of which was in the infiltrating and two were in the necrotic stage, he obtained typhoid bacilli invariably out of the gall bladder, and in fifteen cases they were obtained in pure culture. In thirteen of the nineteen cases in which a positive result was obtained there was inflammation of the gall bladder, with small-celled infiltration, œdema, and hyperæmia. In all twenty-two cases the diagnosis of typhoid fever was confirmed by cultivations from the spleen, mesenteric glands, or liver, or from the larger bile ducts. How do they reach the gall bladder? There are three possibilities: either they enter by the bile ducts, or from the blood, or directly through the wall of the gall bladder. The last-mentioned manner must be very exceptional. Their entrance from the blood has been apparently disproved, and it is therefore probable that they enter by the bile ducts. There is no doubt that the bacilli multiply in the gall bladder, and it is possible that they may be responsible for post-typhoidal cholecystitis, for gall stones, and also for relapses of the disease.

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THE AMERICAN PHYSICIAN AS A PARTICIPANT IN FUTURE INTERNATIONAL MEDICAL CONGRESSES.

No one will gainsay the fact that the recent International Medical Congress in Moscow was a success from every point of view. It is probably the conviction of every participant that it was carefully and thoroughly planned, splendidly organized, and satisfactorily executed. Judged solely from the enormous attendance and from the amount and character of the work done, the meeting justified the existence of international reunions of this kind. From the purely scientific side alone, although there were no epoch-making communications, the sessions of the majority of the sections fully realized the expectations of the participants. Confronted with this knowledge, we are led to inquire what share the members of the medical profession of this country contributed to the success either by their presence or by their contributions. It has been stated that upward of one hundred physicians from the United States were in attendance, but this we believe to be entirely beyond the mark. It is very probable that the number of *bona-fide* physicians who participated in the congress from this country was not much above fifty. This estimate does not include medical students, reporters, and "doctors" of other kinds than medical. Numerically, therefore, the contribution from the United States was about one-one-hundredth of the entire body. This alone was a serious handicap in making their presence felt, but it is not to be compared with the obstacle offered by reading papers poor in thought and poorer yet in preparation. We would not be understood as saying that many of the communications presented by American congressists were not worthy of the audiences to which they were offered, and were not listened to with becoming deference. But this cannot be said of them all. It was noticeable, moreover, that although quite a large number of papers was announced by Americans, when the time came to read them the readers were thousands of miles away from Moscow. This happened in so many instances that the disagreeable thought came to one that this method at least had the advantage of bringing the writer's name prominently before the eyes of a few hundreds, yes, thousands of his colleagues, although the article in question might still be secreted in the recesses of his brain. It would seem that a man who informs the secretary of a society or a congress that a paper from his pen may be announced morally obligates himself to fulfil his engagement. Naturally there are many extenuating circumstances, but the fortuitous exigencies which prevent congressional participation usually do not arise so soon before the congress that the officials cannot be notified in time to keep the title of the recalcitrant's paper from appearing on the final programme.

It practically has been decided that the next international congress will be held in Paris during the opening year of the dawning century. The fact that a universal exposition, which is planned to surpass all predecessors, will be held there the same year, will undoubtedly attract a great number of our people, physicians among the rest. We believe that the time will be opportune for the profession of this country, participants in the prospective congress, to make their presence felt and to justify that reputation for brilliancy and integrity, not alone in practical fields, but in bacteriology, physiology, and hygiene as well, which they deservedly sustain at home and which they are partially accorded abroad. One or two hints at this time may be serviceable in contributing to such an end.

A physician should not presume upon the time and patience of his colleagues by reading a paper composed of truisms, some facts borrowed from text-books, and much padding. Such exhibitions contribute to international ill-feeling and to personal disdainment. No more should he report procedures based on alleged chemical or physiological experiments which he is not ready and able to demonstrate by chemical or physiological tests. Above all, he assiduously should refrain from announcing papers that he does not anticipate being able to present. This latter procedure has already been done to death. If he will take the results of his honest work and intelligent thought, it matters not whether they be based on experimentation or observation, he may be assured of kindly reception and courteous attention. Moreover, he will have the satisfaction of feeling that he is doing for the reputation of the profession in his country what his Latin confrères did so conspicuously at the last congress, enhancing its scientific position.

THE YELLOW-FEVER SITUATION.

THERE are no signs of improvement in the yellow-fever situation in the South as yet, the number of new cases reported in New Orleans each day being between fifty and sixty, and until a frost or a notable fall in temperature occurs, of which there is no present prospect, little improvement can be hoped for. The area of infection continues also to spread, cases having been discovered during the past week in Memphis, Tenn., and Selma, Ala., and consequently the territory of the shotgun quarantine, with its prostration of trade and financial loss, is constantly widening. The exodus that ensued upon the announcement that the fever

had invaded Selma furnishes a typical illustration of the unreasoning fear that possesses the minds of people in times such as these. The panic that seizes upon everybody the moment a case of yellow fever is discovered in some hitherto unvisited place is almost incredible, and would be ludicrous were it not pitiable. On Saturday last it was announced that some cases had occurred in Selma, and by Sunday evening all but about three hundred of the white inhabitants of the city had left it, over $12,000 worth of railway tickets having been sold in that time. The regular passenger service was insufficient to take away all the fugitives, and many special trains were made up to accommodate those who were clamoring for a means of escape from the pest. These trains, once filled, were run through the State without stopping, every little hamlet having its guard at the station to shoot any one who would attempt to leave the cars. Atlanta is the city of refuge for all these frightened men and women, and such numbers have gone there that it is feared it will soon be impossible to find accommodations for them. Many of those who cannot get as far as Atlanta or some Northern city are camping out in tents or huts in the woods, having isolated themselves completely, fearing to let a human being approach, lest he bring the dread pestilence with him. The death rate in the present visitation has been remarkably low, but this seems to have had no effect in calming the apprehensions of those who have been exposed or fear they may be. The psychology of this epidemic will make an interesting study.

In the *Herald* of recent date is a cable despatch from Buenos Ayres, giving the results of an interview said to have been had with Sanarelli in Montevideo concerning his curative serum. According to this account, the serum is useful solely as a curative agent and is unavailable as a means of protection against the disease. He said he had tried to immunize dogs, horses, and other animals, but the method was slow and uncertain. In the way of a cure of yellow fever, however, he claimed that his experiments had been successful in animals, though he had been unable as yet to make a practical test on man. "This new serum," the report continues, "if compared with other serums intended for preventive or curative purposes, will be found to be far above them in efficacy, though it is not yet perfect. Before announcing his final conclusions and the composition of his curative serum, Dr. Sanarelli will try to make a more potent serum for experiment on a fever patient. He will soon leave Montevideo for Rio Janeiro, where he will continue his experiments."

It is rather difficult to tell, from this report, just what the serum is or what it is expected to do, and we shall doubtless have to wait until Sanarelli arrives in Genoa, to which place the Italian papers state he is now on his way, before knowing what stage he has reached in his experiments looking toward the elaboration of a curative or prophylactic serum.

The Pasteur Monument Fund, so it is announced, has reached the very satisfactory sum of $60,000.

THE FAVUS QUESTION.

As will be noted in our news columns, the authorities in Washington have taken the timely and wise step of ordering that immigrants affected with that loathsome, contagious, and highly undesirable disease, favus, be excluded from our shores.

The position which the RECORD took in this matter over two years ago makes this action highly gratifying to us, to say the least. We have fought to exclude the disease as one wholly unnecessary for us to add to our already long list of exotics. In view of a failure in this direction we have urged that it be kept out of the schools and out of the barber shops. It is now being quite generally excluded from the schools in this city, but how many children of foreign birth are endangering, not perhaps the lives, but possibly the lifelong happiness of our American schoolchildren throughout the country no one can tell. In an editorial upon the "Increase of Favus" in the MEDICAL RECORD of June 1, 1895, we pointed out that while in 1877, so far as reports were available, there were but thirty-two instances in the whole country, sixty had been reported from this city alone in 1893.

We said at that time that it was a great mistake not to keep these children from landing in the country, and that, if they could not be stopped at quarantine, some means of segregation should be instituted. An alarming increase of late would seem to be indicated by the statement of a recent correspondent in the MEDICAL RECORD, who has observed over eighty instances in one dispensary during a period of five months.

The following is the closing sentence of our comment two years ago:

"This is much too young a country to compete with the old world in the matter of favus statistics, and there should be a quick return to the good old times when New York could boast but four instances of the disease."

May not the MEDICAL RECORD's plea have had an influence in bringing about the praiseworthy action just taken by the national government?

THE ASEXUALIZATION OF CRIMINALS.

FOR many thousands of years among civilized people and savages alike, one of the most difficult problems to solve has been "what to do with confirmed criminals." At this date the solution seems as far off as ever. The methods of punishment by the ancients were strictly deterrent. No mercy was shown the delinquent, but he was punished for his sin with the greatest severity. Possible reformation by less harsh means did not enter into the question. With the advent, however, of the Christian era, more merciful treatment was introduced, and now in some countries the inmates of prisons are better housed and fed than the honest poor. Notwithstanding all this, the most sanguine of penologists can hardly say that the results have been commensurate with the efforts, and probably the present system is no more successful than the old one of severe punishment. We have several times re-

ferred to the few reformers who contend that society must organize to prevent by means of asexualization the propagation of degenerates and criminals. Dr. Barnard Eastman recently read a paper before the Kansas Medical Society at Topeka, upholding these views, but, after all the arguments which he advanced in support of this drastic measure, he is forced to the tame conclusion, that "the practical difficulties which would be encountered in attempting to carry out this theory, with that disregard of fear or favor necessary to its success, are at present insurmountable."

DEATH FROM GENERAL ANÆSTHESIA.

Many deaths occurring as the result of the administration of general anæsthetics undoubtedly are not widely heralded and some may not even be reported as due to this cause. Three instances of sudden death during anæsthesia have occurred in a single New York institution within the current year: two from chloroform and one from ether.

A recent issue of *The Hospital* calls attention to the alarming frequency of deaths from anæsthesia in England, especially from chloroform. At the time of writing there had been twenty-two cases reported in three months, and at the time of going to press four more deaths from this cause had been made public. One naturally wonders in how many cases the true cause of death has been concealed. In *The Hospital* of April 24th, there are reported seven additional cases collected from the daily papers, four of these having been reported in one day. In one instance the jury found that death was due to excitement in anticipation of the operation. In regard to this finding we call attention to the investigation of Dr. Leonard Hill, who says: "Chloroform paralyzes the splanchnic vasomotor tone just as shock does, and in the condition of shock or emotional fear the compensatory mechanism for the effect of gravity is almost abolished, and chloroform may easily be the last straw to paralyze completely the circulation. It is, no doubt, in this way that an expectation of disaster has sometimes conduced to its occurrence." Again, the *Hospital Nurse's Mirror* of April 3d reported a case from the Windsor Royal Infirmary, of a nurse who collapsed suddenly under gas and ether, while having some teeth extracted.

A few figures taken from the statistics of Goult as a result of a collective investigation of the German Surgical Society of Berlin, as to the number of deaths from the various anæsthetics and their combinations, may be of interest. During the five years, from 1890 to 1895, there were 88 deaths from chloroform out of 2,286 cases, 7 deaths from ether out of 6,020 cases, 1 death out of 10,162 cases in which chloroform and ether were combined, 1 death out of 5,744 cases in which chloroform, ether, and alcohol had been used.

Would it not be more scientific to have an honest report of deaths from anæsthetics and a more careful study of the subject of anæsthesia? These reports bespeak likewise the need of a more careful examination of the patient before the administration of an anæsthetic. The duty of administering an anæsthetic in hospitals usually falls to some recent graduate or to the junior member of the staff. His practical knowledge of the subject is usually very limited, and the operator, being aware of this, feels it necessary to have an eye upon this part of the work, when he ought to be able to concentrate his entire attention on the operation. So far as we have been able to learn, the Philadelphia Polyclinic is the only institution that has appointed an instructor especially for the purpose of training the hospital staff and students in this branch of medicine. We are not in favor of carrying specialism to extremes, but, as we have stated on one or two previous occasions, there is room for a few specialists in anæsthesia, as only a physician who is thoroughly acquainted with the work and has had practical instruction and experience should be chosen for this important part of a surgical operation.

SPECIAL INSTITUTIONS FOR THE TREATMENT OF PULMONARY TUBERCULOSIS.

More is probably known of the etiology and pathology of pulmonary tuberculosis than of any other disease, and it will be thought, considering this minute knowledge, that the ravages made by consumption might be curtailed to a greater extent than is now the case.

The treatment of phthisis in special institutions has met with a large measure of success abroad, as our readers may have gathered from the discussion on this subject at the Moscow congress, and there would appear to be no reason why similar establishments should not have a like success in this country. The rational method of treating tuberculosis is, without doubt, for the sufferer to live under those conditions which fulfil in the highest possible degree the laws of hygiene and diet. In private life, except by the very rich, these conditions are very difficult to attain. Climate and situation, which play so prominent a part in the curative treatment of lung affections, are naturally important in the choice of a site for a sanatorium, and as the climate in many parts of this continent is peculiarly favorable, these objects are easily obtained.

UNAUTHORIZED AUTOPSIES.

The very laudable eagerness for autopsies in cases of doubtful cause of death very often tempts hospital internes to strain a point to gratify it. A recent case in point is reported from the Hahnemann Hospital in this city, in which such an examination was made without the permission of the immediate relatives or friends, and without an order from the coroner. While there can be no question as to the motive of the act on the part of the participants, it is nevertheless quite evident that they exceeded their authority in the premises and became liable for prosecution. The trouble was initiated by the undertaker, who informed the widow that an autopsy had been performed upon the body of the deceased, and that in consequence the corpse was not fitted for exhibition at the funeral. While it does not appear, from the standpoint either of reason or of fact, that the mere examination of the

brain and the necessary removal of the calvarium would cause notable disfigurement, the original and unwarranted assumption of responsibility for the act itself is none the less apparent.

If the facts are as stated in the preliminary court examination, the parties involved in the affair are technically guilty before the law. Whether or not the case be brought before the grand jury, as has been threatened, the discussion of the principle upon which the charge of misdemeanor is founded is timely and proper, in view of the constant temptation to dodge the law in the interests of pathological science. In cases of doubt as to the real character of the disease causing death, and when an autopsy is denied by the friends of the deceased, the physician can decline to give a death certificate; but he can go no further without permission from the coroner, to whom all such doubtful questions should be referred. It is always better to be sure first than to try to explain afterward.

News of the Week.

The Detroit Medical and Library Association.—At the annual meeting held on October 4th, Dr. Andrew P. Biddle was elected president.

The Public Library (consolidation of Astor, Lenox, and Tilden) has secured the services of Dr. John S. Billings in the preparation of a complete catalogue.

Schools of Midwifery in Chicago will be affected, it is said, by the recent ruling of the State board of health that all medical instruction must hereafter be carried on in the English tongue.

Favus Subjects Excluded.—Immigration and customs officials have been informed by a circular just sent out by Commissioner-General Powderly that they are henceforth to send back immigrants affected with favus.

The Department of Charities, finding that the city is supporting about twice as many would-be paupers as is necessary for the city to pay for, has begun to cut down salary expenses by discharging nurses, druggists, and examining physicians.

Dr. Ludwig Weiss has been appointed consulting dermatologist to the Hebrew Orphan Asylum in this city.

A Dinner to Sir William Gowers.—The members of the Society of Medical Stenographers in England have decided to celebrate by a dinner the conferring of knighthood upon the founder of the society, Sir William Gowers. The dinner is to be held on the 25th of November, and Sir William Broadbent has expressed his willingness to take the chair on the occasion.

Obituary Notes.—Dr. Jacob Hay died at York, Pa., on October 18th, at the age of sixty-four years, in consequence of disease of the stomach and heart, from which he had long suffered. He was graduated from the University of Maryland in 1854, and he was a member of county, State, and national medical societies. He had been president of his local medical society, and had for several years been a member of the local board of school control. He had also served as a member of the board of pensioner examiners, and he was a member of the Masonic fraternity.

A Medical Service at St. Paul's Cathedral in London.—At the request of the Guild of St. Luke a sermon to the members of the medical profession was preached in St. Paul's by the Archbishop of York on October 19th. The service, which was held in the evening, was largely attended by the medical men of London, all wearing academical costume and accompanied by the ladies of their families.

Johns Hopkins University.—There are one hundred and seventy medical students at the Johns Hopkins University. Some of them are women. Dr. Michael Foster, professor of physiology in the University of Cambridge, England, delivered an address before the students on October 11th.

Diphtheria and Typhoid in Maryland.—The prevalence of diphtheria and typhoid fever in various parts of Maryland has given the State board of health an increase of work. There has been complaint at Cumberland on account of the contamination of the Potomac River from places above Cumberland. This same contamination has had a very bad effect on the drinking-water of Washington.

Maryland Association of Military Surgeons.—The various staff surgeons of the militia of Maryland have formed a permanent organization, called the Maryland Association of Military Surgeons.

Our Lucrative Profession.—There are nearly four hundred doctors in St. Louis who are practically starving, says Dr. Lamphear, and in Brooklyn physicians are said to be hiring as motormen. Dispensaries and patent medicines are the alleged causes.—*The Medical Examiner.*

Against Lodge Physicians.—It is stated that the Quebec College of Physicians and Surgeons has issued a decree prohibiting medical men from accepting positions as physicians of charitable or benefit societies, under pain of withdrawal of the privilege to practise.

Sanarelli in Italy.—The Rome correspondent of *The Lancet* writes that Dr. Sanarelli, the discoverer of the bacillus icteroides, is expected shortly at Genoa, whence he will start on a series of visits to the leading medical schools in Italy, at each of which he will deliver a lecture on his discovery of the bacillus of yellow fever and set forth his maturer recommendations for the prophylaxis as well as treatment of this disease.

Medical Society of the County of Broome (N. Y.).—The annual meeting of this society was held in Binghamton on October 5, 1897. Dr. J. D. Appley reported a "case of chronic abscesses following typhoid fever," Dr. W. S. Overton one of "chorea complicating pregnancy," and Dr. L. D. Farnham two of "cancer of

the breast cured by operation." A communication on "Hypnosis and the Phenomena of Consciousness," presented at the last meeting by Dr. W. A. White, was discussed. The presidential address was delivered by Dr. B. E. Hadeker.

Dr. W. F. G. Hunter, of Kentucky, who was recently acquitted of the charges of bribery in the senatorial contest in that State, has been appointed by President McKinley United States minister to Guatemala.

Small-pox is prevailing to an alarming extent in Larnaca in the island of Cyprus, and many of the inhabitants are fleeing from the town to the open country in hope of escaping infection.

Cincinnati Justice.—Not long ago a woman was arrested in Cincinnati for riding a bicycle. She was modestly dressed and was behaving properly, yet the Solon of the police court fined her fifty dollars and sentenced her to the workhouse for thirty days on a charge of loitering. The woman was a prostitute, but it is a strange law that punishes a person engaged in the pursuit of health and happiness on a wheel. Riding a bicycle will become a dangerous pastime if one can be accused, in so doing, of loitering as well as of scorching.

Those Printers again.—A local paper, speaking of a street accident, says: "Dr. Jones was quickly summoned, who, after examining the patient's purse, decided that the case was hopeless."—*Medical Times.*

The French Urological Association held its second annual meeting in Paris on October 21st, 22d, and 23d, under the presidency of Professor Guyon. The questions proposed for discussion are: 1. "The Operations Performed on the Testicle and its Adnexa for the Relief of Prostatic Hypertrophy," to be introduced by Drs. Albarran and Carlier. 2. "Non-Gonococcic Urethritis," to be introduced by Drs. Eraud and Noguès.

A Plea for a Department of Public Health.—At a meeting of the board of trade and transportation, held in this city on October 13th, Dr. Warren E. Anderson, of Pensacola, formerly a member of the Florida State board of health, read a paper advocating the creation of a United States department of public health independent of the treasury, war, navy, or any other department of the national government. He said that "uniformity of quarantine laws and regulations can be obtained only through Federal control. This is greatly to be desired, as it alone can prevent the wild, reckless, and absurd shotgun quarantines, allay panics, restore confidence, and prevent commercial rivalry of seaports in their greed for trade from endangering the public health of the entire country. The State should be represented in the national health councils, and the laws there made should be executed through this representative. All sanitary or quarantine officials should be residents of the State whose health interests they are to protect, and no official should be appointed in the way of political preferment, but only upon personal qualifications approved by commercial organizations where such exist. The foreign tonnage tax should be applied to the purposes of quarantine, and thus relieve the people and the commerce of the country from the heavy and unjust burdens laid upon them by the present system of health protection. The Marine Hospital service should be remanded to the performance of that duty which it has so faithfully done for the past hundred years—the care of sick and disabled American seamen. A failure upon the part of the Federal Congress to provide the citizen with adequate protection against the invasion of imported disease and the prevention of the recurrence of such scenes as are being enacted along the lower Mississippi Valley and the Gulf coast, will be regarded as a national calamity."

College of Physicians of Philadelphia.—At a stated meeting of the section on general medicine of the College of Physicians of Philadelphia on October 11th, Dr. C. W. Burr read a report of two cretinoid brothers. Dr. S. M. Hamill read a paper on "The Condition of the Salivary Digestion in Anæmia." The investigations upon which the paper was based led to the conclusion that there were no constancy and no distinctiveness in the characters and properties of the saliva under the various conditions of anæmia. Dr. D. L. Edsall read a paper on "The Gastric Conditions in Anæmia," in which he pointed out essentially that while in cirrhosis the acidity of the gastric juice is likely to be increased and in pernicious anæmia to be diminished, the condition of this secretion bears no constant relation to the state of the blood. Dr. J. C. Wilson exhibited the brain from a man who was originally supposed to be suffering from typhoid fever, with the development finally of cerebral symptoms. Death ensuing, an accumulation of pus was found in the region of the vermiform appendix, and also an intracranial abscess containing some six ounces of pus, situated between the dura and the brain, actually involving neither of these, and included within a dense pyogenic membrane.

Philadelphia Pediatric Society.—A stated meeting of the Philadelphia Pediatric Society was held on October 12th. Dr. F. A. Packard demonstrated a number of cases exhibiting congenital deformities of the extremities. Dr. C. W. Burr read a report of a fatal case of chorea occurring in the course of an attack of nephritis following scarlet fever. Dr. T. S. Westcott described a simple method for calculating the quantities of cream and whole milk to make any formula for home modification. Dr. Alfred Hand, Jr., reported a case of scurvy in a child.

Hospital Diagnosis.—A barkeeper in London felt out of sorts and had a rash on his face. He applied for treatment at the outdoor department of one of the large hospitals, and was told that his blood was poisoned in consequence of his frequent nibbling of potted meats and fish at the lunch counter. He returned to work and stopped nibbling, but got no better and returned to the hospital. This time he was told he had small-pox and was bundled off to the pest-house, his neighbors and patrons of the dive where he

dispensed wet goods being thrown into a state of consternation. While they were bemoaning his lot and theirs he suddenly reappeared, having been assured at the small-pox hospital that his case was one simply of varicella. Now the hospital authorities are investigating the hospital doctors, and threaten to dismiss them for their blunder: the inevitable result will be a falling off in the number of patients, and consequently a less effective appeal to the charitably disposed.

Pathological Society of Philadelphia.—A stated meeting of the Pathological Society of Philadelphia was held on the evening of October 14th, the president, Dr. J. H. Musser, in the chair. Dr. D. Riesman demonstrated a specimen exhibiting extensive gelatinous infiltration of all parts of the peritoneal cavity, together with a considerable quantity of gelatinous material derived from this source. The morbid process was believed to be a form of colloid carcinoma. Dr. H. W. Cattell exhibited the stomach and kidneys from a case of carbolic-acid poisoning. The former presented a characteristic lustrous silvery appearance. It was pointed out that occasionally the odor of carbolic acid can be perceived about the kidneys when not detectable about the stomach. The president delivered his annual address and the treasurer read his annual report. According to the latter the receipts during the past year, including a balance on hand of $1,318.91, amounted to $2,225.81, and the disbursements to $1,198.29. The number of active members of the society is two hundred and seven. An election for officers was held, with the following result: *President*, Dr. W. E. Hughes; *Vice-Presidents*, Drs. F. A. Packard, C. W. Burr, Alfred Stengel, John Guiteras; *Secretary*, Dr. D. Riesman; *Recorder*, Dr. A. E. Taylor; *Treasurer*, Dr. T. S. Westcott; *Curator*, Dr. J. D. Steele.

Expulsion from a Medical Society for Unethical Conduct.—The Cumberland County Medical Society, at its semi-annual meeting at Bridgeton, N. J., on October 12th, expelled from its membership Dr. S. M. Wilson, a graduate of the University of Pennsylvania and a practitioner of twenty-eight years' standing, for unethical conduct in acting as physician for a company engaged in the employment of a proprietary cure for alcoholism.

"The National Medical Review."—With the October number of this interesting journal Dr. Charles H. Stowell retires from the editorship, and will be succeeded by Drs. Thomas E. McArdle and George W. Johnston. Dr. Stowell has made a most readable paper, and his successors will have no sinecure in maintaining the high standard he has set, though we have no doubt they will do so. We wish the retiring editor full measure of success in his new field of usefulness.

Philadelphia County Medical Society.—A stated meeting of the Philadelphia County Medical Society was held on October 14th, the president, Dr. James Tyson, in the chair. Dr. E. W. Holmes read a paper on "Hay Fever," in which he maintained that the disease was a neurosis dependent upon disorder of terminal nerve filaments in the nares, the exciting agent consisting of some form of fine powder, such as the pollen of plants, etc. Of treatment he could not speak hopefully, but recommended change of residence.

D. Hayes Agnew Memorial Pavilion.—This new addition to the hospital of the University of Pennsylvania was opened at Philadelphia on October 15th, with appropriate ceremonies. The building is a substantial three-story brick structure, with a front of one hundred and fifty-four feet and a depth of one hundred and eighty-four feet. Its erection cost $150,000, and it has a capacity of one hundred and twenty beds. It includes also an amphitheatre with a seating capacity of two hundred and seventy, and two others with a capacity of one hundred and twenty-five each, together with hospital wards, dispensary rooms, etc.

Prof. Rudolf Heidenhain, the well-known professor of physiology at the University of Breslau, died October 13th, at the age of sixty-three years. After receiving his diploma in 1854 he entered the laboratory of Professor DuBois-Reymond, under whose direction he conducted his researches into experimental physiology. He had held the chair of physiology at Breslau since 1859.

A Midwife Fined.—A midwife was recently arrested here on the charge, made by the County Medical Society, that she practised medicine without a license. She was convicted and made to pay a fine of $50.

The Anniversary of Pasteur's Death was celebrated on September 28th in Paris. The members of the staff of the Pasteur Institute met in the crypt and placed wreaths on the tomb. On the same day a mass was celebrated in the presence of the family in the parish church at Arbois, Pasteur's birthplace.

The Surgeon-General of the Navy.—The President has appointed Medical Director William K. Van Ripen to be surgeon-general of the navy, to fill the vacancy caused by the death of Dr. Bates. Dr. Van Ripen is a graduate of the New York University Medical School in the class of 1862.

The Plague is steadily increasing in India. It is officially announced that an outbreak has occurred in the Jalandhar district of the Punjab. The village of Khartkarhalan, the seat of the infection, has been cordoned. In the hospitals of Poonah two hundred and ninety-four cases of the plague are being treated, and the physicians are attending one hundred and fifteen cases in the Bombay hospitals. There were forty-two deaths at Hardwar up to October 26th. Thus the disease is now prevailing in the interior as well as on both the east and west coasts of the Indian peninsula.

The People's Baths.—According to the annual report of the New York Association for Improving the Condition of the Poor, of the work done at its People's Baths, No. 9 Centre Market Place, the number of baths taken from October 1, 1896, to September 30,

1897, inclusive, was as follows: Men, 75,454; women, 12,935; children, 12,634; total, 101,023. The increase over the corresponding period of 1896 was 7,215. The total number of baths taken since the work began was 502,675. A fee of five cents is charged, which entitles the bather to a new piece of soap, clean towels, and the use of a compartment for twenty minutes.

The Microbe of Trachoma.—It is announced from Vienna that one of the university professors there has discovered the specific diplococcus of Egyptian ophthalmia.

Segregating the Consumptives.—The State board of health of California has issued orders directing physicians in charge of asylums to segregate consumptives and report the number in each asylum. This is preliminary to the enforcement of stringent rules by the board for segregating consumptives in all health resorts. Many persons in Southern California have been clamoring for such action. The southern counties are overrun with consumptives, and in most places they are a menace to healthy persons.

Another Jack the Ripper.—France has a "Ripper," who can give points to the English Jack of former days. He has confessed to twelve of the nineteen murders he is supposed to have committed.

Diphtheria prevails to such an extent in a part of Hoboken that it has been found necessary to close one of the public schools, interrupting the studies of over one thousand children.

Explosion on a Warship's Launch.—Dr. W. R. Dubose, two other officers, and a number of the men of the battleship *Texas* were injured by the explosion of the boiler of one of the steam launches of that vessel in Boston Harbor, on Friday last. No one was killed, but several of the sailors were seriously injured.

Dr. Laporte, whose misfortune in losing a patient in childbirth, after he had performed craniotomy with a packer's needle, as told by our Paris correspondent, was convicted on October 22d of homicide, and was sentenced to three months' imprisonment. The sentence appears from the evidence to have been a most unjust one, and the unfortunate has the comfort, slight though it may be, of knowing that he has the sympathy of his confrères everywhere.

The President's Physician.—It is reported in Washington that Capt. Leonard Wood, passed assistant surgeon of the army, will probably succeed the late Surgeon-General Bates of the navy as medical attendant to President McKinley. Dr. Wood is stationed in Washington as attending physician to army officers and their families. He was appointed to the army as assistant surgeon from Massachusetts in 1886.

Dr. Van Fleet, of this city, was sued for libel in consequence of some remarks made by him at a meeting of the County Medical Society, concerning the advertisement of an optician in the *Medical Register*. The case has been recently tried and resulted in the acquittal of Dr. Van Fleet. Judge Wallace ruled that there was nothing in the advertisement to cast reflection, but, as Dr. Van Fleet was seeking the removal of the advertisement before a body competent to grant it, his remarks constituted a privileged communication; and further, there was nothing to show personal malice on the part of Dr. Van Fleet. He directed the jury to bring in a verdict for the defendant.

The Hodynsky Plain Disaster.—The commissioners appointed to inquire into the disaster on the Hodynsky Plain in Moscow during the coronation festivities, have reported that the number of lives lost was fourteen hundred and twenty-nine.

"United Statestians" is the uncouth appellation which the editor of the *Practitioner* gives us, at the suggestion of some anonymous word-coiner. The inhabitants of this glorious country are very well satisfied to be called Americans, but if some jealous Canadian objects we would modestly suggest the designation "United Statesmen."

Physicians for Bombay.—The Indian government has asked for twelve medical men to be sent out from England to the Bombay presidency for duty in the plague-stricken districts. The conditions of engagement are: £25 for expenses previous to starting, a free passage to Bombay and back, and 500 rupees a month.

Injured by Kissing.—A curious tale is related in the *Münchener Nachrichten* of a man who lost consciousness after implanting thirty-seven hundred and fifty kisses upon a young woman's lips in the course of three hours. He had made a wager that he could kiss his sweetheart ten thousand times within ten hours, but soon realized the universal truth that there can be too much of a good thing.

Alcoholism in the Army.—The annual report of Surgeon-General Sternberg, made public, says that alcoholism is not so prevalent as it was in the army, but the improvement has been slight. The admission rate for intemperance was 29.08 per 1,000 for the army as a whole, 31.20 among the white soldiers, and 5.70 among the colored soldiers. Seven deaths among the whites were due directly to alcoholism.

Deaths from Starvation in Cuba.—Dr. Brunner, medical inspector of the Marine Hospital service stationed in Havana, reports to Surgeon-General Wyman that the death rate in Havana is enormous and that the sanitary conditions in the city are going constantly from bad to worse. About two-fifths of the total deaths are due to the lack of sufficient food among the country people, whom Weyler's infamous and inhuman policy has driven into the city. Dr. Brunner writes, in the latest report of the Marine Hospital service: "An inspection of a pest hole, known as Los Fosos, was made by me on Thursday, October 14th. This place has been set aside for the country people sent to Havana. Los Fosos consists of a large wooden building, about one hundred and fifty feet in length and sixty in width.

The building is situated in an inclosure which is used for the storing of carts of the municipality. There were five hundred people found in and around this building, and of that number over two hundred were found lying on the floor, sick and dying. I saw no child under ten years of age who could be considered in good health. They were invariably suffering from some form of enteritis or dysentery. The emaciation of their bodies was startling. This place is not a hospital, but simply a place of residence for these people, and a conservative estimate of the death rate would be about ten per day. The number is recruited by fresh accessions from the country. There were over one hundred and fifty children below the age of ten years, and I did not observe one whose chance for living thirty days, under the existing conditions, was good. There are two other such places in the city where the same conditions exist." The hospitals of the city are frightfully overcrowded, the Mercedes, for example, having five hundred patients while it has accommodations for only two hundred, and now they are forced to refuse to receive any new patients.

To Test the Antiseptic Treatment of Typhoid Fever.—In response to the suggestion of a correspondent that the value of the antiseptic treatment of typhoid fever be put to a careful scientific test, Dr. Woodbridge writes, in the *Journal of the American Medical Association*, that he will cheerfully accept the conditions. He says he will meet the suggested commission "whenever it may command my services and wherever it may choose to hold its sessions, whether in some typhoid-stricken city in the United States, in England, on the Plains of Thessaly, or wherever the disease may occur; only show me the patients and I will supervise the treatment of as many cases of typhoid as may be necessary to enable the commission to make a final and decisive report. No one shall be taxed either for my services or for my expenses." Another writer in the same journal suggests that the Paris Academy of Medicine be asked to make the inquiry.

Obituary.

DR. WILLIAM H. FORD,

PHILADELPHIA, PA.

Dr. William H. Ford, president of the Philadelphia board of health, died suddenly of heart disease at his summer home at Belmar, N. J., on October 18th, at the age of fifty-eight years. He was graduated from Princeton College in 1860 and from Jefferson Medical College in 1863. He was in 1862 appointed acting medical cadet in the United States army, being stationed at the Wood Street United States Army General Hospital in Philadelphia. Later he was detailed as medical officer on board the hospital steamer *Whildin* in the Pamunkey River, where he continued in sercive for a short time, when he was again stationed at the Wood Street Hospital, remaining there until the spring of 1863. In the following summer he was appointed assistant surgeon of the forty-fourth regiment, Pennsylvania volunteers, and soon afterward he was made surgeon. He remained with his regiment until the defeat of General Lee after the battle of Gettysburg, when he was mustered out of service. In 1863 he was elected resident physician in the Philadelphia Hospital, and in the following year he was re-elected. In 1865 he went abroad and spent three years in general and medical study. In 1868 he began the practice of medicine in private, and from 1869 to 1871 he was assistant demonstrator of anatomy in the Philadelphia School of Anatomy. During the Centennial exposition in 1876 he was a member of the Centennial medical commission of Philadelphia, being also chairman of the committee of this body on sanitary science. In the same year he was a delegate to the International Medical Congress held at Philadelphia. In 1871 Dr. Ford became a member of the Philadelphia board of health, in 1875 its secretary, and in 1877 its president, continuing in the latter office until his death. During his connection with this board he planned and had issued a weekly bulletin of vital statistics of Philadelphia. He was largely instrumental in organizing the odorless system of cleaning wells, the public collection of garbage, and in establishing a department for regulating house drainage in Philadelphia. The organization of a department of milk inspection was also due to his efforts. In 1893 Dr. Ford planned and supervised for the board of health the construction and fitting up with all modern appliances of a large pavilion hospital for the treatment of cholera and contagious diseases in conjunction with the Municipal Hospital. He took an active interest in the construction of a large and complete disinfection plant at the Lazaretto, and proposed the erection of a hospital for tuberculosis at this station. In 1876 Dr. Ford was elected physician to the Foster Home. In 1879 he was made a member of the board of managers of the Sanitarium Association of Philadelphia, and in the same year he became a member of the board of directors of the Tenth Ward Charity Society and was elected chairman. Dr. Ford was the author of a thesis on "Gunshot Wounds of the Chest," founded upon his experience in military hospital wards. From 1872 to 1876 he edited the reports of the board of health, and from 1872 to 1875 he compiled the vital statistics of Philadelphia. He was the author of "Statistics of Births, Marriages, and Deaths in the City of Philadelphia," published in 1874. He was for several years one of the associate editors of the Philadelphia *Medical Times*.

PASSED ASSISTANT SURGEON BRATTON.

MARINE HOSPITAL SERVICE.

Passed Assistant Surgeon William DuBose Bratton, of the United States Marine Hospital service, died at Sabine Pass, Tex., on October 2d, under peculiarly distressing circumstances. In the need of medical officers during the present yellow-fever epidemic, Dr. Bratton, though an invalid and therefore on waiting orders, voluntered his services to meet the emergency. He was ordered to Sabine Pass to assume charge of matters relating to the quarantine service at that port. On October 1st he had been superintending the disinfection of a vessel, and, returning to the ship to reassure himself upon the work done, he fell through a ventilating-hole, striking his head on an iron knee, producing concussion of the brain. He remained undiscovered for several hours, and when found was unconscious and remained so until death occurred, eighteen hours after the accident. He was born in South Carolina, June 23, 1860, and was graduated at the Medical College of South Carolina, March 1, 1884, and for the year following was house surgeon at the Charleston City Hospital. He entered the Marine Hospital service in 1885, his first station being in this city.

Reviews and Notices.

VITA MEDICA: CHAPTERS OF MEDICAL LIFE AND WORK. By SIR BENJAMIN WARD RICHARDSON, M.D., LL.D., F.R.S. London, New York, and Bombay: Longmans, Green & Co. 1897.

THESE chapters upon incidents in the medical and scientific life of the autobiographer will have for his admirers a peculiar interest in the fact that only two hours after their completion the author was seized with the illness which ended fatally three days later.

The work is published, therefore, fresh from the pen without the author's revision or correction. It is somewhat pathetic to read, in the preface, written so short a time before the end, that some studies of like nature were still in hand, but that he had thought it best to issue at the present time what he had dared to imprint upon these pages. Chapter xxviii., page 496, the shortest in the book, is entitled "A Last Word," in which he said: "I have set myself to record a medical life from the medical side of my own life; not in any sense as a model picture, but in the earnest hope of the day when men of physic shall find in the study of the natural body the grandest work the human intellect can command."

DIGEST OF CRITICISMS ON THE UNITED STATES PHARMACOPŒIA, Seventh Decennial Revision (1890). Published by the Committee of Revision and Publication of the Pharmacopœia of the United States of America, 1890–1900. Part I., Comprising Abstracts of Papers up to July 1, 1896. New York. 1897.

THE committee on revision has here presented in a hundred and eighty pages the first portion of the digest of criticisms and suggestions for improving the National Pharmacopœia.

A TEXT-BOOK OF MENTAL DISEASES, FOR THE USE OF STUDENTS AND PRACTITIONERS OF MEDICINE. By THEODORE H. KELLOGG, M.D. New York: William Wood and Company.

THE time is particularly opportune for the appearance of an authoritative American treatise on mental diseases. The author of the text-book before us has embraced the opportunity, and the result is a volume that enhances at the same time his reputation as an alienist and littérateur, and advances the deserved position of American psychiatry. No one acquainted with the literature of insanity and who has had intimate contact with the insane can fail to be impressed by the fact that the author has made himself intimately familiar with both, and has given forth as the result a distinctly individual and praiseworthy treatise. The volume of about eight hundred pages is divided into two parts, the first being concerned with general mental pathology, the latter with the special groups and the typical forms of insanity. Under the former are discussed the history, the statistics, the nosology, the etiology, and the evolution, stadia, clinical progression, and termination of mental diseases. The symptomatology is then taken up in great detail; first, the psychical, then the somatic symptoms, the different subdivisions of each being considered in a separate chapter—for instance, under the former, disorders of the intellect, of the emotions, and of volition; under the latter, the disorders of the various systems making up the body. The pathology, diagnosis, prognosis, and treatment are then considered before the special forms of insanity are discussed. The arrangement of the volume leaves nothing to be desired. The subject is unfolded in a natural way, and for the beginner in psychiatry the work cannot fail to be impressive, suggestive, and very useful.

In the chapter on the nosology of insanity the author recites the various classifications that have been given by psychiatrists, and then points out the necessity of a new classification based particularly on etiological ground, which he proceeds to give. The virtues of Dr. Kellogg's classification are very apparent to the reviewer; nevertheless he believes that serious objections can be urged against its adoption. It is unwieldy and too complex for all save the psychologist and advanced psychiatrist; in short, a classification of insanity that befits a text-book for students and practitioners should be simple, lucid, and as brief as possible, even though these qualities are opposed to absolute scientific accuracy and detail.

The chapter on the etiology of insanity is comprehensive, well put together, and one of the best. The same may be said of the chapter on treatment, by all means the best one in the volume. It is doubtful if any more reliable guide can be put in the hands of the inexperienced physician or the developing alienist than the chapter now under discussion. It is stamped throughout with the hallmark of one who has come into intimate association with the insane under three very different conditions, viz.: in private life, in public institutions, and in sanatoria. The advantages and disadvantages of each are specifically and judiciously set forth. The chapter on the prognosis of insanity is clearly the work of one who has lived with the insane and whose conclusions are based on the experience such intercourse has given. In other words, one is convinced that the conclusions of the author are not the mirroring of work in the library. The author is apparently alive to the value of simple statement and of emphasis, and does not indulge in the latter when the former is sufficient. The chapter on the pathology of insanity is brief, devoid of illustration, and disappointing. It is the only chapter in the book that does not reflect credit on its author. The formula for the diagnostic examination of patients will no doubt fulfil the expectations of the author, who believes "that it may prove highly suggestive and useful to the general practitioner," providing the latter can have Dr. Kellogg's book before him when he is examining a patient, but the general practitioner will probably find his strength unequal to memorizing it.

That Dr. Kellogg has made one of the most important additions to text-book literature of insanity must be apparent to every one who carefully examines this volume. We believe that it will become a standard for American students. It is not without serious inherent shortcomings, and a number of minor deficiencies, syntactical, orthographical, and other, might have been eliminated by careful proofreading. Although the style of many passages is very impressive, the reviewer has a feeling after finishing the volume that oftentimes the phraseology is unnecessarily learned and weighty, and although moderately familiar with the literature of the subject which the book so commendably exposits, still he found it necessary on more than one occasion to lean on an encyclopædic dictionary, and in one instance that staff failed him.

A MANUAL OF PHYSIOLOGY, WITH PRACTICAL EXERCISES. By G. N. STEWART, M.A., M.D. With numerous illustrations. Philadelphia: W. B. Saunders. 1897.

THE author herein gives the result of years of teaching physiology to medical students. A series of practical exercises is given, which are well adapted for practical work in a laboratory. In fact the book should be used only as a guide for work in the laboratory. All the various chapters on the blood, lymph, respiration, digestion, nervous system, the senses, are clearly written, and the instruments described are up to date. The illustrations are excellent, and the book is certainly a credit to the writer.

SIR JAMES Y. SIMPSON. By EVE BLANTYRE SIMPSON. Famous Scots Series. New York: Charles Scribner's Sons.

THIS tells in a pleasing style of the school days, start in life, rise, popularity, honors, hospitality, religion, failings, etc., of a man whose life must have something of interest in it for every physician.

A TEXT-BOOK OF SPECIAL PATHOLOGICAL ANATOMY. By ERNST ZIEGLER, Professor of Pathology in the University of Freiburg. Translated and Edited from the German Edition by DONALD MACALISTER, M.A., M.D., Linacre Lecturer of Physic and Tutor of St. John's College, Cambridge, and HENRY W. CATTELL, M.A., M.D., Demonstrator of Morbid Anatomy in the University of Pennsylvania. Sections I.–VIII. New York: The Macmillan Company. London: Macmillan & Co., Limited. 1896.

THE present volume includes eight sections: section i., blood and lymph; section ii., the vascular mechanism; section iii., the spleen and the lymph glands; section iv., the osseous system; section v., the muscles and tendons; sec-

tion vi., the central nervous system; section vii., the peripheral nervous system; section viii., the skin.

Volume II., when published, will contain the pathology of the alimentary tract, liver, pancreas, respiratory and genito-urinary systems, eye, and ear.

The translation has been done with evidences of the utmost care and attention to detail. The illustrations are excellent, and the publishers' portion of the work is all that could be desired.

TELEPATHY AND THE SUBLIMINAL SELF. An account of Recent Investigations Regarding Hypnotism, Automatism, Dreams, Phantasms, and Related Phenomena. By R. OSGOOD MASON, A.M., M.D., Fellow of the New York Academy of Medicine. New York: Henry Holt and Company. 1897.

THE new psychology, as it is called, has an attractiveness about it which brings forth writers and readers.

The present series of papers give studies in the outlying fields of psychology, and is intended as an aid and introduction to the study of "the more subtle forces in our being." Interesting material will be found in the chapters on thought transference, lucidity, double personality, automatism, crystal gazing, phantasms, etc.

A TREATISE ON THE SURGERY OF THE ALIMENTARY CANAL, COMPRISING THE ŒSOPHAGUS, THE STOMACH, THE SMALL AND LARGE INTESTINES, AND THE RECTUM. By A. ERNEST MAYLARD, M.B., B.S. Lond., Surgeon to the Victoria Infirmary, Glasgow, etc. Pp. xxiv. + 724. Philadelphia: P. Blakiston, Son & Co. 1896.

IT is impossible in a brief review to do justice to this elaborate exposition of the subject of gastric and intestinal surgery. Some idea of the scope of the work may be obtained from a glance at the table of contents and list of case reports, from which it will be evident that the author has gone most expansively into the literature of the subject, American as well as foreign. Apparently no important case has escaped him.

Part I., on the œsophagus, includes sixteen chapters, neoplasms being most thoroughly discussed. Among the many admirable plates is one excellent skiagraph (p. 24).

In Part II., on the stomach (fourteen chapters), we note as especially worthy of study the two chapters on ulcer, two on pyloric and cardiac obstruction, and the descriptions of gastrostomy and gastrectomy.

Part III., dealing with the intestines, includes nearly three hundred pages, and is exhaustive. Three chapters are devoted to appendicitis, and a large number of operations for entero-anastomosis are carefully described and illustrated. More than a hundred pages are given to the rectum.

Each division of the subject is introduced by a chapter on anatomy and physiology. The pathology, symptoms, and prognosis of each lesion are first presented, followed by the treatment. The operations are described in separate chapters, the descriptions being clear and concise, with the omission of all useless details. Each subject is thoroughly elucidated by the introduction of clinical reports of cases.

Many of the illustrations (one hundred and seventeen in number), are unusually valuable. In fact there seems to be little room for criticism, unless the busy reader may object to a certain amount of "padding" in a book which is supposed to be devoted purely to operative surgery. But the temptation to write a bulky, rather than a practical working monograph, seems to be what most medical writers find hard to resist.

THE MENOPAUSE AND ITS DISORDERS. By A. D. LEITH NAPIER, M.D., F.R.C.S. Ed., M.R.C.P. Lond., F.R.S. Ed., etc., Senior Surgeon and Surgeon in charge of Gynæcological Cases, and Lecturer in Clinical Surgery and in Gynæcology, General Hospital, Adelaide, etc. Pp. xv. + 307. London: Scientific Press, Limited. 1897.

AS stated in the preface, the aim of the author is to set forth the results of the latest studies in menstruation and the phenomena attending its cessation.

There are thirteen chapters, each of which is succeeded by a copious list of references. The introductory chapter on menstruation is quite interesting, considerable attention being paid to modern theories. The author leans to the "nerve theory," fortifying his position very well. The succeeding chapter on "Anatomical Considerations" is an able one. The author's theory is briefly as follows: The action of the uricular glands causes a peripheral uterine irritation which sends afferent impulses to the nerve centre regulating menstruation. Thence efferent impulses are sent to the uterus, determining continued growth of the glands, stroma, and vessels. The menstrual flow is due to the breaking down of congested capillaries and shedding of the superficial epithelium. The rhythm of menstruation is due (1) to metabolic changes in the endometrium, followed by katabolic changes for the removal of effete matters; (2) to periodic enlargement of the uterine glands; (3) to automatic nerve action.

In chapter iii. the physiology of menstruation is discussed at length; in chapter iv. the normal climacteric; chapters v. to ix. (inclusive) deal with its ordinary disorders, blood dyscrasias and constitutional affections, and the psychoses; Chapters x. and xi., on fibroids and malignant disease, are exceedingly interesting and will repay careful study; the concluding chapter treats of vaginal and uterine displacements in elderly women.

We have no hesitation in commending this monograph as the best which has yet appeared on this important subject. It is not only original, but presents special points of excellence, notably the clear scholarly arrangement of the material, the summary which concludes each chapter, and the exhaustive bibliography. The therapeutical side of climacteric disorders, which has hitherto received but little attention, is carefully handled, and will be especially helpful to the general practitioner. In this age of overproduction in medical literature, it is always gratifying to meet with a book which needs no apology, but is its own *raison d'être*.

AN ACCOUNT OF THE LIFE AND WORKS OF DR. ROBERT WATT, Author of the "Bibliotheca Britannica." By DR. JAMES FINLAYSON, M.D., Physician to the Glasgow Western Infirmary and the Royal Hospital for Sick Children. With a Portrait. London: Smith, Elder & Co. 1897.

A NEAT little volume of forty-inch thick paper and large-print page, having a delicately tinted frontispiece portrait. An appendix contains dates of interest in Watt's life.

OBSTETRICAL POCKET-PHANTOM. By DR. K. SHIBATA, Specialist in Gynæcology and Obstetrics, Tokio, Japan. Preface by Professor Franz von Winckel. With eight illustrations, one pelvis, and two jointed manikins. Translated from the third edition by ADA HOWARD-AUDENRIED, M.D., Physician to the Children's Clinic at the Woman's Hospital, Philadelphia. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut Street. 1895.

THE twentieth century approaches. Its advent is heralded by a work written by a Japanese professor and translated by a medical man of the gentler sex. To be sure it is small, but then, too, it is good,—and a small good thing often shows in what direction the wind is pushing the world along. Students will find this an aid in the study of parturition.

NEW YORK COUNTY MEDICAL ASSOCIATION REGISTER FOR 1897.

THIS book contains the names and addresses, with office hours, of the 1,056 members of the New York County Medical Association, and also the names and addresses of all other regular physicians in this city. In addition to these lists the book contains much valuable information concerning medical laws, etc., and several short essays on topics of current interest, one of which is a brief statement of the advantages to be derived from the adoption of Modern Greek as the international language.

A SYSTEM OF SURGERY. By American authors. Edited by FREDERIC S. DENNIS, M.D., Professor of the Principles and Practice of Surgery, Bellevue Hospital Medical College, New York, President of the American Surgical Association, etc.; assisted by JOHN S. BILLINGS, M.D., LL.D., D.C.L., Deputy Surgeon-General U. S. A. Profusely illustrated with figures in colors and in black. 8vo, pp. 908. Philadelphia: Lea Brothers & Co.

THE third volume of this valuable work appears with commendable promptness, and contains a large amount of interesting and practical material. It comprises chapters on the surgery of the larynx, tongue, jaws, teeth, salivary glands,

neck and chest, eye, ear, skin, genito-urinary system, and syphilis, and may be considered as a collective work mostly in special lines. In a general way it may be said that each author has done his best to present his subject from the authoritative standpoint of an expert and with due consideration for the purposes of the work as a whole. Dr. D. Bryson Delavan's chapter on the Surgery of the Larynx and Trachea is a judicious *résumé* of the subject, well written, clearly presented, and practically considered. The Surgery of the Mouth and Tongue, by Professor Mudd, compasses a large field, and each portion receives its due attention. The descriptions of pathological conditions and operative procedure are clearly and concisely presented. The Diseases of the Salivary Glands forms a short and practical paper by Professor Porter, of Harvard. The Surgery of the Neck, by Dr. Willard Parker, gives evidence of an earnest study of the subject, but with too much apparent deference to other surgical authorities. The editor, with the universal adaptability of his kind, assigns himself to a passing emergency by treating in a thoroughly *ex-cathedra* fashion the Surgical Injuries and Diseases of the Chest. Professor De Schweinitz, of Philadelphia, gives an excellent chapter on the General Diseases of the Eye, which will be especially appreciated by the general surgeon, while Drs. Noyes and Weeks treat the Operative Procedures on the Eye in a thoroughness of manner and detail leaving nothing to be desired. The Surgery of the Ear, by Dr. Bacon, makes an interesting and instructive chapter within the short limits of its assignment of space. The Surgical Diseases of the Jaws and Teeth, by Professor Tiffany, is a thoroughly scientific presentation of principles and practice too little known and appreciated by both the general practitioner and the dentist. The chapter on Surgical Diseases of the Skin, by Professor Hardaway, of St. Louis, has a good selection of the varieties of the subject, and treats them in an intelligently practical manner. Professor J. William White, of Philadelphia, assisted by Dr. W. H. Turner, contributes an exhaustive section on Genito-Urinary Diseases, making almost a book by itself, and Professor R. W. Taylor, with an equally elaborate and painstaking chapter on Syphilis, closes the volume. The usual number of illustrations embellish the book, a good proportion of which are in colors.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, October 21, 1897.

EDWARD G. JANEWAY, M.D., PRESIDENT.

The Wesley M. Carpenter Lecture.—DR. WILLIAM HALLOCK PARK delivered the lecture, which was the special order of the evening, taking for his subject, "The Contributions of Bacteriology to Therapeutics." He said that bacteria caused disease by their mechanical presence in the tissues, by the poisons produced in their growth, or by the withdrawal from the body of their food substances, or in other ways, as yet unknown. They caused injury to the body chiefly by their action on the body cells through their poisons. The most important determining factor was whether or not the body at the time and place of infection was in proper condition for the growth of the bacteria. Ordinarily, the human body was not a good place for bacterial growth. We must look to the living tissues for some decided influences in addition, otherwise it would be impossible to offer a reasonable explanation for the very variable degrees of virulence exhibited. It was long ago noticed that people were not apt to contract certain diseases a second time. If a few virulent anthrax bacilli were injected into a susceptible animal, the bacilli would soon begin to increase, and would give rise to fever and other evidences of disease, and finally cause death. More minute examination would reveal the fact that the bacteria apparently attracted great numbers of leucocytes; in an immunized animal no such phenomenon would be observed. This attraction of the leucocytes by bacteria was not due apparently to any inherent property of the leucocytes, but rather to the effect of substances in the serum on the leucocytes. Besides this action of the leucocytes, it was probable that the blood contained substances directly bactericidal. As to the nature of the action of toxins and antitoxins on each other, it might be stated, as a working hypothesis, that a toxin was a substance directly poisonous, according to the intensity of its affinity for the cell substance of any living body. Thus, a chicken might be injected with three times as much tetanus toxin as would be fatal to a horse, and still the chicken would live; but sufficient could be injected to cause its death. According to his view of the subject, an antitoxin might be defined as a toxin which, by contact with living cell substance, either within or without the cell, had been changed. The toxin might have been changed by uniting with a portion of the cell substance, or might have been simply acted upon by it. He could not conceive of cells being so constituted as to have a response for each specific toxin; but if we considered the antitoxins to be toxins altered by contact or union with the cells, the specific action was easily explicable. As these substances had not been obtained in a pure state chemically, we could only theorize regarding them. Antitoxins do not remain permanently in the blood, but are gradually eliminated, disappearing after a few weeks or months. Bacteria differ as to the portions of the tissues in which they can develop. Thus, a few tetanus bacilli driven by a splinter into the foot multiply but slightly, but they find sufficient soil to produce a toxin quickly, and in sufficient quantity to cause death. The bacillus of diphtheria requires a different soil; it is practically harmless in the skin and intestine, but when inhaled causes diphtheria. The tubercle bacillus invades the tissues very slowly. Clinically, as well as bacteriologically, it was known that lack of food, exposure to heat and cold, overexertion, extreme youth, and other influences predispose to disease, while the opposite conditions help the body to protect itself.

Tetanus.—The lecturer then took up the consideration of a few of the more important diseases. He said that since the advent of aseptic and antiseptic surgery tetanus had become less frequent in operation wounds, but a sufficient number of cases were still reported annually in this locality to make the disease of practical importance. The tetanus bacillus was now accepted as being the cause of all the various forms of tetanus —puerperal tetanus, tetanus neonatorum, idiopathic and traumatic tetanus. There must always be some wound in which the bacillus could find lodgement. At one stage of the development of the bacillus it contained a very resistant spore. The tetanus bacilli had been found very commonly in the soil, in horse and cow manure, and in hay. The tetanus bacillus remained at the seat of infection, and did not spread through the body; hence, the disease was a true toxæmia. In practice, the infection was usually one of the tetanus spores, and these spores required special conditions for their development. Early and thorough cleansing of even seemingly insignificant wounds was an important prophylactic in those regions in which tetanus was common. The toxins in the wound were almost as dangerous as the bacilli themselves. Tetanus antitoxin had been applied practically on a large scale in immunizing animals against possible tetanus. This plan had been adopted among the animals kept by the board of health for experimentation, and in this way it had been possible materially to reduce the mortality among these animals. Some operators favored giving an immunizing dose of tetanus antitoxin before performing an operation on a valuable animal, such as a horse. The results of the cura-

tive treatment were not so brilliant as those of immunization; hence the great importance of such prophylaxis. After the appearance of the first tetanic symptoms, the administration of the tetanus antitoxin was ordinarily useless, in both the lower animals and in man. When the incubation period was long, the results were much better. Dr. Alexander Lambert had found that in thirty-one cases developing in eight days after infection the mortality was 61.3 per cent., while in similar cases not treated with the tetanus antitoxin the mortality was estimated to be as high as eighty per cent. From the available statistics, it seemed certain that the tetanus antitoxin possessed a certain curative effect. From twenty to fifty cubic centimetres should be given, twice daily, in all cases of tetanus, and the treatment should be begun at the earliest possible moment.

Diphtheria.—Diphtheria antitoxin had been singled out among the antitoxins because of its success in the treatment of diphtheria. The great mass of physicians was at the present time convinced that diphtheria antitoxin, in doses of from two hundred to three hundred units, would confer immunity against diphtheria for from two to four weeks, and that the period could be lengthened at will by a repetition of the injections. They were also convinced that when cases were seen early, and before general poisoning had ensued, the antitoxin could be relied upon to arrest nearly all cases of diphtheria. In the more advanced cases, as seen commonly in practice, it was fair to state that the antitoxin treatment greatly reduced the mortality, in both pure and mixed infections. The speaker fully indorsed the view held by Drs. Biggs and Girard, viz., it mattered not from what point the subject was regarded, only one conclusion could be reached, and that was that there had been an average reduction of mortality of not less than fifty per cent., and, under the most favorable conditions, a reduction to one-fourth, or even less, of the previous death rate. This had occurred in different seasons and different countries, and always in proportion to the extent of the use of the antitoxin. The experience with diphtheria antitoxin very naturally led to the question: "Why should tetanus and diphtheria antitoxin differ so greatly in their curative action?" The answer was to be found in the fact that the tetanus toxins developed unnoticed for a number of days, and the disease was only detected only after general poisoning had taken place; whereas the diphtheria poisoning started on the surface, and before its toxins had been absorbed there was abundant evidence of the presence of the disease. The hope had been expressed that it would be possible to avoid the rashes that sometimes follow the administration of diphtheria antitoxin, but there was no more hope now than five years ago of separating the antitoxin from the horse serum. We had, however, a much more concentrated serum, and, therefore, less horse serum was introduced at a dose. By better attention to the selection of the animals and to their general condition, we might hope to obtain a diphtheria antitoxin so pure as to give practical immunity from these unpleasant complications. In the dried antitoxin we had a preparation which could be preserved indefinitely. The dose of diphtheria antitoxin, in the curative treatment of diphtheria, should be from one thousand to three thousand units, according to the severity of the case and the age of the patient, and this dose should be repeated in from twelve to eighteen hours if no improvement was noted or the case remained severe. Dr. Park stated that the absolute mortality from diphtheria in New York, Paris, and Berlin was lower than last year. Formerly, the death rate in Berlin had been 80 per 100,000, now it was 26; in Paris, the average death rate had been 63, but last year it was only 17, and this year also 17; in New York, the average mortality had been 140, but last year it was 91, and this year 86.

Tuberculosis.—Regarding tuberculosis, the lecturer said that it was now universally admitted to be caused by infection with the tubercle bacillus. Other microorganisms might become associated with the tubercle bacillus, and their symptoms might even eventually predominate. Tuberculous diseases of the glands, bones, and joints frequently became arrested without treatment, and the same was true probably in from ten to twenty per cent. of cases of pulmonary tuberculosis, but a natural cure or arrest was, after all, the exception. Nor could we say that after such a cure there was any immunity, for it was well known that people easily contracted tuberculosis a second time.

Tuberculin.—A study of the tuberculous processes in man, in spite of their subacute course, inclined one to approach the treatment by immunizing injections or treatment by antitoxins with considerable scepticism, albeit with some hopefulness. Koch's old tuberculin had now been largely displaced by the new tuberculin. According to Koch, after each injection there was a noticeable improvement in the tuberculous process, and, after several months, all reactions ceased, the patients having become immune to the toxin. Further injections were useless until this immunity had passed off. Many cases of true tuberculosis were claimed to be cured or greatly benefited by several periods of such treatment. The old tuberculin of Koch neutralized the tuberculosis toxins, but was not bactericidal, and consequently Koch had sought to obtain the bactericidal action in the new tuberculin. He had found that the envelope of the tubercle bacillus was so resistant that it could be destroyed only by agents and processes which would render the preparation useless. In the new tuberculin, the bacilli are dried in a vacuum, ground in an agate mortar, placed in distilled water, and centrifugalized. The sediment is then removed, dried, and again ground in a mortar, and mixed with sterilized water. The clear fluid is the pure tuberculin. It could be readily seen, Dr. Park said, that contamination was difficult to avoid by such a method of preparation, and the strength of the solution must vary greatly at different times. As a preservative, twenty per cent. of glycerin was added. It was claimed that, in marked contrast to the old tuberculin, the new tuberculin was strongly immunizing. The initial dose should be one five-hundredth milligram, the proper dilution being made with decinormal salt solution. The dose should be gradually increased, and the remedy given on alternate days. Temperature reactions of only about half a degree had been reported. The full dose of the new tuberculin was twenty milligrams. Unfortunately, only general accounts had been published of Koch's experimental work on animals. In lupus cases, and cases of phthisis, Koch had reported marked improvement in every instance, with no bad symptoms, and all the patients had improved in their general condition and in the physical signs. Koch gave no hope of benefit in advanced cases of tuberculosis, or in cases of pronounced mixed infection. This necessarily excluded a large number of cases seen in ordinary practice. The results from the old tuberculin in this country had been very slight. It was claimed that the new tuberculin not only neutralized the poison, but directly killed the bacilli through the substances produced by the body cells from the tuberculin.

Preparations of Tuberculin.—With regard to the different preparations of tuberculin, it was probably safe to say that there was none better than that made by Koch himself, but the tuberculin sent out by the manufacturers deputed by Koch to make tuberculin did not have the characteristics insisted upon by Koch, but gave every evidence of contamination and varia-

bility. This had been the experience at Dr. Trudeau's sanatorium, where they had also found that when the contents of a vial of the new tuberculin were centrifugalized, not only did many samples contain tubercle bacilli, but these bacilli were alive and capable of causing infection. In this connection, it was worthy of note that two of Koch's animals which were being immunized by tuberculin developed tuberculosis, as a result of the tubercle bacilli injected.

Present Status of Tuberculin Treatment.—Reports from abroad seemed to indicate that lupus showed even more benefit from the new than from the old tuberculin. Regarding phthisis, laryngeal tuberculosis, and other tuberculous processes, no definite opinion was expressed, even by those observers who had used it under specially favorable circumstances. All urged great care in increasing the dose, especially from new vials.

Serum Treatment of Tuberculosis.—Turning to the discussion of the serum treatment of tuberculosis, Dr. Park said that since 1894 attempts had been made to treat tuberculosis in man and animals with serum. The majority of observers claimed the power of neutralizing the effect of tuberculin when injected into tuberculous guinea-pigs, but this test was insufficient, as tuberculin was not the same as the unaltered products of the tubercle bacillus. Moreover, Trudeau had shown that other non-specific substances had the same effect in neutralizing the tuberculin. Very few observers had been able to obtain appreciable effects with serum obtained from different sources.

At the Trudeau sanatorium several patients had insisted upon the serum treatment and had received it. No effect, either good or bad, had been observed in them. Many of the tuberculins on the market now were apparently no better than normal horse serum.

Diseases Due to the Pneumococcus.—Typical lobar pneumonia, as well as certain forms of endocarditis, pericarditis, cerebro-spinal meningitis, etc., are now known to be caused by the pneumococcus. Lobar pneumonia had the peculiar characteristic of frequently terminating suddenly by crisis. This had been supposed to be due to the development of antitoxins in the blood, but there were certain facts which made this view extremely doubtful. For instance, some cases developed a pneumococcus septicæmia at the very time when liberation of these antitoxins was to be expected. Again, the majority of pneumococci died in cultures after five or seven days. It was possible, therefore, that in the lung certain conditions develop which render the solid unsuitable for the further growth of the bacillus or for the development of the toxins. In 1886, A. Fraenkel had begun immunizing-experiments on animals. The serum used in over forty cases of pneumonia in man gave doubtful results; it was apparently neither harmful nor beneficial. Of a number of animals, some could be immunized, while others succumbed. The curative power of the serum was probably very weak. As yet, the serum could not be said to be of practical value in the treatment of pneumococcus infections, and it probably never would be. The serum was, however, practically harmless, so that further experimentation was justifiable.

Streptococcus Infections.—Most of the forms of tonsillitis, erysipelas, cellulitis, and septicæmia were due to streptococci. In none of the streptococcus inflammations had there been noticed much tendency to the development of immunizing substances in the blood. It was true that cases of cellulitis, erysipelas, and abscess, after a period of a few days or months, tended to recovery, so that, to a certain extent, it might be assumed that protective processes had been called forth. Experimentation on man had shown that but little immunizing substance was developed by repeated attacks of erysipelas. Two methods had been used for immunizing and in attempts to establish a curative treatment. One method was to heat to a certain point bouillon cultures of virulent streptococci; in the other method, living and virulent streptococci were themselves injected. Marmorek had given the most attention to this subject. The serum had been found to be very unreliable and to lose its virtue rapidly. Thus, Dr. A. W. Williams, in some experiments carried on at the laboratory of the New York board of health, had found that the contents of a vial which were potent last June exhibited no effect in September. He had obtained directly from Marmorek a vial supposed to contain a very high-grade serum, yet it had lost its power in two months. Other experimenters had noticed the same result as from Marmorek's serum. It could not be said that any of the antistreptococcus serums on the market now were reliable, and certainly all were very variable in their action. In 1895, Marmorek had published ninety-six cases of scarlet fever, four hundred and eleven of erysipelas, and sixteen of puerperal fever treated with his serum. Marked improvement was reported in all of those due to streptococci. Seven of the sixteen cases of puerperal fever were due to streptococci, and in all of these the patients recovered. On the other hand, four cases in which the streptococci were associated with colon bacilli proved fatal. In phthisis, when no cavities had yet appeared, the fever and sweatings diminished under the use of the serum, but no cures were claimed to have been effected. The speaker said that he had seen two cases of puerperal fever in which distinct results had been observed from the use of the serum, but in neither case were any streptococci obtained from the blood. The results obtained here in New York, by both physicians and surgeons, had not been specially favorable. It might be fairly concluded (1) that the preparations of anti-streptococcus serum now on the market are either weak or entirely wanting in curative substances; (2) that we are justified in using the serum only when it has been recently tested and shown to have some value; and (3) that we should, as far as possible, establish the variety of bacteria causing the infection, in every case in which the serum is used.

Treatment of Sarcoma by Erysipelas Toxins.—This subject, Dr. Park said, had received attention in this country chiefly from Dr. W. B. Coley, and consequently the views presented were those of that observer. He found that the inhibitory action of the toxins on carcinoma had proved nearly always to be temporary, and that in no case had the disease after their use remained in abeyance sufficiently long to allow it to be considered cured. In sarcoma, the only form in which he had advocated this treatment, the toxins, when injected subcutaneously into the tumor substance or into more remote parts exercised a distinctly inhibitory action on the growth of the tumor. This was the least marked in the melanotic form. On round-cell sarcoma this action was far more powerful. In a number of cases of round-cell sarcoma, in which the diagnosis was unquestioned, the patients remained well beyond three years. Nearly one-half of all the cases treated showed no appreciable decrease in size; others decreased at first, and then increased. In the spindle-cell variety, the tumor disappeared entirely in half of the cases, and the patients remained well sufficiently long to be regarded as cured. All the cases treated were considered as inoperable. Three cases of spindle-cell sarcoma remained well for three years. One after three years and three months had a recurrence in the abdomen. This, in itself, substantiated the diagnosis. Dr. Park said that it was curious that the largest percentage of successes occurred in the spindle-cell sarcomata—just that variety in which mistakes in diagnosis were prac-

tically impossible. In every case the diagnosis of the clinician had been corroborated by the pathologist before the treatment was begun. In estimating the value of this method, it should be remembered that the treatment was sometimes deleterious to the general health, and that occasionally these sarcomata disappeared spontaneously. Nevertheless, the proof was very strong that some sarcomatous tumors had been arrested and caused to disappear by the treatment. When a sarcoma was inoperable and progressive, he thought the treatment should be tried.

The Plague.—It was now known that the plague was due to a specific bacillus, and that the infection was transmitted, not only by the infected bodies of men, but by rats, insects, and flies. These animals had been thought to be a frequent cause of the dissemination of the disease. A serum which possessed a very fair degree of immunizing power had been obtained from animals. Out of 500 persons immunized with this serum, only 5 contracted the disease, and 3 of these died. In 149 cases of the plague treated with the serum, the mortality was forty-nine per cent., as against eighty per cent. in the untreated cases. In these cases a weak serum had been used which had been hastily prepared by Roux in response to an urgent and unexpected demand. A better serum gave only 2 deaths in 26 cases. Haffkine's treatment had been tried on 1,300 exposed persons, of whom 55 contracted the disease and died. Some immunity seemed to have been produced. Fever and prostration followed the injections, and lasted one or two days.

Typhoid Fever and Cholera.—Animals could be immunized to both typhoid fever and cholera. The serum possessed feeble antitoxic and bactericidal power. There was reason to believe that in a severe epidemic of typhoid fever it would be possible to carry out immunization, although, of course, it would be ordinarily far easier to enforce the well-known prophylactic measures. The curative treatment of typhoid fever with serum had given no marked results, although a few claimed a decided reduction in the duration of the disease.

Hydrophobia.—No specific micro-organism for rabies had yet been discovered in the brain or spinal cord, but it was certain from the phenomena of the disease that one did exist. The preventive treatment of Pasteur had been subjected to much severe criticism, but the speaker believed that to-day its efficacy was firmly established. The reported diminution in the percentage of those developing hydrophobia after bites of rabid animals seemed hard to believe, yet a conservative estimate of the death rate from hydrophobia in those not treated by the Pasteur method was from ten to twenty per cent., as against a little more than one per cent. under the Pasteur treatment. Occasionally, though very rarely, a person developed rabies some weeks after the treatment, when immunity should have been conferred. This had never yet been explained. He believed that hydrophobia had never occurred among the thousands treated at the Pasteur Institute, Paris, as a direct result of the treatment.

The Future Contributions of Bacteriology.—As to the future therapeutic results from bacteriology, the lecturer asserted that the outlook was bright for obtaining through serums, or the toxic substances of the micro-organisms themselves, the means of immunizing against most, if not all, the diseases due to specific micro-organisms. This immunity was not usually of long duration, but could be prolonged by repeated injections. The prospect of securing serums which would promptly arrest the development of diseases already established, by destruction of the micro-organisms and their poisons in the body, was rather less encouraging now than shortly after the discovery by Behring of diphtheria antitoxin. We could hope only to stop all growth of micro-organisms and prevent further action of bacterial poisons at the moment when a case came under treatment. From the fact that substances had been obtained which strongly inhibited certain bacteria, without affecting other bacteria, it seemed probable that we might find chemical substances which would have specific bactericidal power. The expense of experimentation was now very great, as many animals were required, and an additional obstacle to the work of laboratory investigators was found in a lack of co-operation on the part of the clinicians. So far, the work in bacteriology seemed to indicate that our advancement would be rather in the way of preventing disease. At the present time, outside of the diphtheria antitoxin, tetanus antitoxin, and the plague antitoxin, we had no serums which would give practically curative or immunizing results at a time when danger of infection was imminent or infection had already taken place.

National Bureau of Health.—Dr. A. Jacobi said that the New York Academy of Medicine had appointed years ago a committee to frame a bill, and to urge its adoption by the Congress of the United States, favoring the nationalization of the sanitary interests and rules of the whole country. In the past, as at present, the prevention and treatment of contagious diseases, both imported and indigenous, were matters of municipal, county, or State concern. When, a number of years ago, cholera appeared at our doors, the necessity of centralizing national safeguards became evident to every unbiassed mind; when, however, the immediate danger had passed, the democratic instincts, natural enough a century ago when the population was small and communication difficult, of egotistic individualism and jealous territorialism became again superior to legitimate anxiety and the teachings of recent experience. Late occurrences in the Southwest had furnished another proof of the fact that in the actual or alleged dangers of a newly imported contagion, not only the sanitary interests of seventy millions of human beings, but also the commercial necessities of the whole country, were at the mercy of every State government, every county commission, every village supervisor, ay, every mob, both ignorant and criminally reckless. Travel and trade had been stopped, high State affairs interfered with, health officers of the county and of States had been prevented by force from attending to their duties and labors in behalf of public health and hygiene. This was why yellow fever, instead of being stamped out at once, had spread, and disseminated both its actual and insane terrors. Instead of applying the methods of scientific prevention and extermination of yellow fever, the accumulated knowledge of the century pertaining to the care and extinction of contagious scourges was thrown to the winds. That would always be so until the commonwealth of the Union should take the responsibility of caring for the health and life of one and all.

Dr. Jacobi then made the following motion, which was seconded and carried unanimously:

"That the New York Academy of Medicine authorizes its president to call the committee appointed years ago, and never discharged, and direct it to resume its interrupted labors and to report to the Academy of Medicine, for presentation to the Congress of the United States for adoption, the old bill, or a new bill, or to support a proper bill offered by great medical or commercial bodies, contemplating the centralization under the national government of the means to protect efficiently the health of the American people against the importation and dissemination of contagious diseases."

Committee on Public Baths.—This committee, consisting of Drs. S. Baruch, G. B. Fowler, and R. Van

Santvoord, reported through Dr. Baruch that the committee had called on Mayor Strong on the day following the appointment of the committee, and had directed his attention to the fact that there was no longer any good reason for delay in erecting the public baths. The mayor was convinced, and suggested a city lot in Rivington Street as appropriate. Since then plans had been drawn up and bids advertised for, preliminary to the erection of a public bath on this site.

Donations to the Academy from a Layman.—Dr. F. A Castle said that it was not very common to receive donations from the laity, and in view of this fact, and particularly in view of the cordial interest taken in the welfare of the academy by Mr. S. P. Avery, he had thought it but right to bring before the fellows some recent gifts from this gentleman, and to suggest that a suitable acknowledgment of his kindness be made through the secretary. Among other things were an anonymous manuscript on materia medica, dating back to 1792, and a very rare volume, nearly two hundred years old, entitled "The Statutes of the College of Physicians of London."

SECTION ON GENERAL MEDICINE.

Stated Meeting, October 19, 1897.

Louis Faugères Bishop, M.D., Chairman.

Marked Cardiac Hypertrophy and Dilatation; Pertussis.—Dr. Richard C. Newton, of Montclair, presented the heart and lungs removed from a child nine years of age, who had died of consumption. The child had had whooping-cough at the age of five years. The heart showed hypertrophy of the right and dilatation of the left ventricle. The very great thickness of the walls of the right ventricle was worthy of note.

Internal Medicine as a Vocation.—Dr. William Osler, of Johns Hopkins University, Baltimore, read a paper with this title. He said that he wished there was some other term to designate that wide field left after the separation of surgery, midwifery, and gynæcology. Not in itself a specialty, but embracing some half-dozen fields, its cultivators could not be called specialists, but must bear the good old name of "general practitioner." In spite of assertions to the contrary he would maintain that the opportunities for a general practitioner were still great and the harvest was plenty, The laborers, while not a few, were scarcely sufficient to meet the demand. He had often told his students that syphilis was the only disease that they must know thoroughly—if one knew syphilis, one knew internal medicine. His hearers could easily recall the names of great physicians—Swett, Alonzo Clark, Austin Flint, Loomis; their works remained, but the best of a great physician's experience unfortunately died with him.

How to Prepare for Consultation Practice.—Wherewithal should a young man prepare himself if he desired to follow in the footsteps of such a man, for example, as Austin Flint? He would assume that he started with equivalent advantages, though this was taking a great deal for granted, because Austin Flint had a strong bias for medicine and he early fell under the care of such great men as James Jackson and Bigelow. These men had influenced Flint most conspicuously. His well-known address on "The Self-Limitation of Disease" was really a worthy commentary on Bigelow's celebrated essay on this subject.

But to return to the student who had just left the hospital. Should he go abroad? It was not necessary; the man chosen for his exemplar did not find it necessary to do so. Would a trip abroad be useful to him? Undoubtedly, for he would have a broader foundation on which to build. To walk the wards of Guy's or St. Bartholomew's or the Salpêtrière, to put in a few quiet months of study at one of the German university towns, would store the young man's mind with priceless treasures. It was assumed, of course, that he had a mind. If he could not go abroad, let him spend part of his vacation in seeing what was being done in the various medical centres. A New Yorker might learn something at the Massachusetts General Hospital, or in Philadelphia, or even with Welch at the Johns Hopkins Hospital. The successful consulting physician of to-day, it would be found, had evolved either from general practice or from the laboratory and clinical work. Many of the most prominent had risen from the ranks of the general practitioner.

The speaker said that it was his object in this address to speak particularly of the training of men who started out with the object of becoming purely physicians. From the vantage-ground of many years of hard work, Sir Andrew Clark had told him that he had striven ten years for bread, ten years for bread and butter, and twenty years for cakes and ale. A dispensary assistantship should be available, and anything should be acceptable which brought the young medical man in contact with patients; but let him see to it, as he valued his future life, that he was not entangled early in the meshes of specialism. Having become thus established, he could begin his medical education. At the present time he could follow three lines of work—chemistry, physiology, and morbid anatomy. The professional chemist looked askance at the physiological chemist, and *vice versa;* but there could be no doubt about the value to the physician of a thorough training in organic chemistry. In this country men possessed of such training were sorely needed. If at the time of starting our student had not had a good chemical training, the other lines should be more closely followed, because of the very long time required to get a proper knowledge of organic chemistry. Physiology opened a wider view and rendered possible a deeper grasp on the problems of disease. A thorough chemical training and a complete equipment in methods of experimental research were less often met with in a good clinical physician than a good knowledge of morbid anatomy. If he must limit his work, chemistry and physiology should yield to the claims of the deadhouse. In this early period he should see deadhouse work, if possible, daily. It was of special value in diagnosis, enabling him to correct his mistakes, and, if he read his lessons aright, might possibly keep him humble. After a thorough course of this training, it was a good plan to go to a German or French clinic for the summer only, which could be done at a very moderate expense.

The Dry-Bread Stage.—At this stage the young physician should live on the "crumbs," the pickings from men in the "cakes-and-ale stage." Some financial assistance could also be derived from class fees or from journal work. Success in the first ten years meant endurance and perseverance. "All things come to him who has learned to work and labor." In this dry-bread decade the young physician should not despise dispensary work. Many of the best-known men in London had served from fifteen to thirty years in the out-patient department before getting a hospital ward. Dr. Lauder Brunton only got a ward at St. Bartholomew's Hospital two years ago, yet he had been assistant physician and seen cases in the out-patient dispensary for more than twenty years. Dr. Samuel West had been an assistant physician for over twenty years. Dispensary work was of incalculable value in the development of the young physician; it was also of inestimable service in teaching. In this period he should not lose the substance of ultimate success while grasping at the shadow of present opportunity. Time in these years was his money, and he

must not barter away too much of it in profitless work —*i.e.*, in work which would not be of value in his education. Too many excellent clinical physicians had been ruined by spending too much time in journal work, thereby temporarily gaining but losing in the end.

A very serious problem confronted the large schools of this country. He knew of no single physician in this country with wards enough to give his third and fourth year students thorough practical bedside instruction. Therefore, to relieve the extraordinary congestion that must come in the schools, now that there is a four-year course, the younger men must be utilized in two ways, viz.: (1) in the dispensaries in which first-class clinical instruction could be given; and (2) by the adoption of some such method as exists in Edinburgh, of individual clinical instruction by those possessing an equipment and qualifications that met the approval of the authorities of the medical schools. The hospitals could not begin to give the amount of clinical instruction needed.

The Bread-and-Butter Stage.—The young physician would find that ten years of hard work would tell with his colleagues. The second, or "bread-and-butter" period, was more trying to most men, for the risks were greater. At this time many dropped out by the wayside and drifted into specialties. Success came more slowly to the physician than to the surgeon. Some surgeons were in full practice at forty years of age; not so with the physician. The surgeon must have hands, and, better, young hands; he should have a head too, but this seemed not so essential.

The Cakes-and-Ale Stage.—After these years of work our future consultant would probably have but little funds in the bank, but he should have a great stock of interest-bearing funds in his brain marrow. It was not improbable that he might awaken suddenly after twenty years of quiet work, done for the love of it, to find that success was assured. In this State there were probably a score of small hospitals, offering splendid material for good men, on which to build up a reputation. A young man should look for a consultation practice after twenty years of hard work in any town of forty or fifty thousand inhabitants. "Many are called: few are chosen." But even after he had reached the period of "cakes and ale," there were many drawbacks. There were two circles—an intraprofessional and an extraprofessional one. In his efforts to keep up with a trying consultation practice, and at the same time keep abreast with all the new things known to the younger men in the "bread-and-butter stage," the consultant should, indeed, arouse our sincere sympathy. Again, the consultant must walk with the boys, or he would be gradually but inevitably lost. In order to keep his own mind receptive and impressionable, he must travel with physicians between twenty-five and forty years of age. At some time or other there would come the temptation to court the Delilah of the press—lay or medical. It should be ever borne in mind that she was sure to play false in the long run, and that the young physician yielding to her allurements would certainly be shorn of his strength and reputation. It could not be denied that a little humbug succeeded immensely with the public, but it was not necessary. In a certain city were three physicians of such eminence that all present would recognize them if their names were mentioned. The first was a good physician, but no humbug: the second was no physician, but a great humbug: the third was a great physician and a great humbug. The first achieved the greatest success. "Better a handful of quietness than both hands filled with vexation of spirit."

Relation of General Medicine to the Specialties.—Dr. William M. Polk said that, in common with the other members of the academy, he felt much indebted to the distinguished gentleman who had come all this distance in order to give his impressions of the right path to follow to attain success in internal medicine. If that man were not sitting here in person before us, it would not be out of place to draw attention to the great success which he had attained by practically following the line which he had so gracefully sketched out this evening. There was certainly a good deal in the statement made by Dr. Osler concerning the surgeons and the amount of cerebral tissue required by them as compared with that which was essential to the success of those who confined themselves to internal medicine: yet no one could practise medicine in any department—even surgery—unless he had a knowledge of internal medicine. The surgeon took it up where the man of internal medicine left off. The poorest surgeon was he who began work as a surgeon, for the reason that he inevitably magnified his method to the detriment of that of the physician, and in so doing frequently stepped in when his confrère would have been able to carry the case to a successful conclusion. The great good that internal medicine had done was in ridding us of the necessity of taking medicine—in teaching us how, by living and moving, we can escape many of the ills that flesh is heir to.

Legitimate Advertising a Prime Requisite.—Regarding what was the best way of making a good consultant, Dr. Polk said that one of the first things was to know how to write and when to write—in other words, the aspirant for such a position must learn the legitimate method of professional advertising. If this were done, there was not the slightest danger of the young medical man drifting into advertising in the public press. But it should be borne in mind that the two could not be mixed. Another important element in his preparation for this great work had been strenuously insisted upon by the late Dr. Alonzo Clark, viz.: In the early part of one's career two or three cases sifted to the very bottom would teach more to the young and receptive mind than a whole hospital full of cases not so carefully and minutely studied.

Specialism a Curse.—To-day the curse of medicine was specialism. That seemed a broad statement: nevertheless it was a true one, because it was responsible for narrow-minded, poorly educated, and dishonest physicians. By this he meant that the human mind was so constituted that, given any problem to work out, it continued to build upon it and magnify it until oftentimes every other structure, no matter what its importance, was overshadowed. While, therefore, specialism had in many instances done much good, it was to-day demoralizing the profession in large measure by bringing it into contempt with the laity. Many a patient—perhaps honestly on the part of the physician—was made to feel and to believe that conditions which were amply met by many of the ordinary rules of hygiene and living were of such overshadowing importance that they must be attended to there and then, or dire calamity would overtake the individual. This might be the low side of specialism, but it had a low as well as a high side. In the past twenty years, during the rapid growth of specialism, it could not be denied that we had often allowed ourselves to drift into this side of it, which was by no means the highest. No man could be a good specialist who had not been a general practitioner. In this connection the example of the carrier pigeon should be emulated. The carrier pigeon, when loosed to execute a special mission, rose, ever circulating upward and upward, casting its eyes in every direction, so as to get the broadest possible view of the entire field before gathering to itself its strength and making straight for its goal.

Dr. Andrew H. Smith said that he had been particularly interested in the way the two preceding speakers had approached this subject from opposite standpoints. As he had understood Dr. Osler, the student should start out with the idea of making himself a consultant, and in no way to become a family physician. On the other hand, Dr. Polk had an eye to the main chance, and advocated starting out with a view to success in practice. Possibly after all the best would be the happy medium. Certainly all the time mentioned by Dr. Osler would be required in order to reach the goal that he had fixed. In the study of internal medicine it was necessary to take in a considerable knowledge of specialties. What was a man to do who approached a case of renal disease unless he was familiar with the ophthalmoscope? He had only done a part of his work when he had taken the history, noted the symptoms and signs, and examined the urine. Moreover, a careful chemical and microscopical examination of the urine was in itself considered a specialty. In order to become master of so many specialties, it was evident that he must refuse the opportunities for obtaining practice other than that of a consultant. He was reminded of what John Hunter had said when called to a sick person while he was earnestly engaged in the study of some subject. He put off going again and again, until he thought the patient's patience had become exhausted; then he left his work, saying: "I suppose I must go and earn that d—d guinea."

Great Consultants as Scarce as Great Statesmen.—The speaker said that it seemed to him that the great consultants of the future were going to be as scarce as great statesmen were at the present time. At the time that Austin Flint was so prominent as a consultant there were also many prominent statesmen, but they had died out. In medicine there was a multitude of very clever men, but only a few who stood head and shoulders above the rest of the profession. Aside from a special training, there must be some peculiar fitness. Take, for example, Dr. Flint. He could not use the laryngoscope, and probably not the ophthalmoscope; nor did he believe that Flint would have had a person swallow a bucket of water, to have it brought up again and the digestive fluids minutely examined. But Flint possessed certain habits of observation and perception; there was something about him which enabled him to see further into a millstone than others perhaps could see, even with the microscope or by means of the *x*-rays.

Dr. Smith said that he had often been asked by young medical men for advice as to how to shape their career. He had always told them to put themselves in touch with disease in any way that they could, but at the same time to attempt to handle only so much of it as they could attend to thoroughly and exhaustively. He also told them to treat every patient, whether a tramp or a millionaire, with precisely the same care and conscientiousness. This kind of work, continued year after year, without seeking the plaudits of the world in any way, and with the interest of the patient at heart more than one's own aggrandizement, would almost inevitably lead one in the end into a successful business. He thought all would agree that a good specialist must have first been a good practitioner.

A Distinction between a Good Diagnostician and a Good Practitioner.—A very important distinction was that made between a good diagnostician and a good practitioner. It used to be said a few years ago of the French school that its followers wished to make a diagnosis, and that then they were anxious to have the patient die in order that the diagnosis could be confirmed at the post-mortem table. This tendency was often observable among our own consultants. The pathological conditions were often carefully and elaborately explained by consultants, but when it came to treatment we received no further light. The consultant would often ask: "What have you been doing for the patient?" and after hearing the answer of the attending physician would advise him "to continue the same."

The Therapeutic Instinct.—Trousseau used to speak of "the therapeutic instinct." He believed there was something in this. Some consultants would inevitably strike out a nice idea in treatment; others would merely tell you what the patient had, and leave you to find out the best way of securing relief. The therapeutic instinct was often extremely well developed among practitioners in the rural districts, who had been largely thrown on their own resources. He had often been astonished at their fertility of resource—at how often they could "get there," when men much more thoroughly equipped halted by the way.

Internal Medicine Not Now in Public Favor.—Dr. A. Jacobi said that the chairman had asked to hear from those who wished to speak on the question, and had called on him. He did not wish to speak on the subject, and came entirely unprepared except what he might have gathered from a practice of forty years in this city. Perhaps when he had practised for sixty years he might be able to say something. He would accordingly make only a few commonplace remarks.

Dr. Smith had already pointed out that Dr. Osler had spoken of a particular class of men practising only internal medicine. This class was a very small one. But there was a very large class, to which he himself belonged, who had made internal medicine their vocation. This class of practitioners had lost ground in the last twenty years, in favor of the specialist of all degrees—particularly the lowest degree alluded to by Dr. Polk. Internal medicine had certainly lost ground with the public. The physician, by many months of careful study, might diagnosticate a tumor and its location, but this counted for little with the laity. When, however, the surgeon came and removed it, the people said: "What a brilliant operation!" and in many instances they might have added very pertinently: "Did he run off with the physician's fee?" At the present time, if a woman had a headache, she must needs have a neurologist; if she had a pain about the chest—it might be a pleurisy—she would go to a neurologist; if she had pain around the eye, she would seek advice from the ophthalmologist: if the pain were in the foot, she might perhaps go to the chiropodist. The nose must be blown by a rhinologist. The laryngologist now took away from the general practitioner even the cases of catarrhal croup. Then there was the abdominal surgeon and the appendicitis man, the stomach specialist and the hemorrhoidal specialist. There appeared to be nothing left for the general practitioner; it appeared, in fact, that the vocation of internal medicine had gone. Still, it had not really gone. He had been a general practitioner for many years, and expected to die a general practitioner. He was perfectly satisfied with his position. Many had become specialists because they did not know anything about general medicine.

The Sacred Position of the Family Physician.—To him internal medicine as a vocation was a sacred position in life. Such a practitioner not only had to deal with every organ of those who confided in him, but he was expected to know a great deal about their persons and their past—he knew not only their lives, but their hearts. It was his duty to look out not only for present diseases, but for such diseases as might develop—in other words, he was the hygienist of the family. If one wanted a good sanitarian, one must look for him, not among the surgeons, the laryngologists, or even the bacteriologists, but among the well and broadly educated practitioners of internal medicine. If the duties and the rights and the accomplish-

ments of the general practitioner were compared with the dexterity of the most eminent specialist, it would be found that there was more influence, private and public, associated with the achievements of the general practitioners. Internal medicine, as a vocation, was really the complex—the one-in-all of general medicine.

The Fame of Physicians Outlives that of Surgeons.—We spoke of the great physicians of olden times and all the way down to modern times. All the great names mentioned this evening were of those who had made internal medicine their vocation—Austin Flint, Alonzo Clark, Mitchell, Physick, and others—every one a general practitioner. The surgeons of their times had almost disappeared from the history of medicine, and certainly from the history of mankind and from the memory of the profession. Specialism, with the features characterized by Dr. Polk, was now about at its height—not at the top of the ladder, however. It would certainly be remodelled, and we would have in the future fewer-but better specialists. Whatever was good and useful for the common weal would have to be looked for in internal medicine, which would then be the vocation of the profession.

In closing, Dr. Jacobi quoted the words of a good specialist in this city: "The internal practitioner, the general practitioner, is the statesman of the profession;" and added: "So it is, and so it will be."

Dr. Osler, in closing the discussion, said that he hoped he had not been misunderstood as reflecting too strongly on the surgeons; he had intended to say only what was well known, that success to the surgeon came earlier than to the physician, and it was more a matter of the heart than of the head. He saw no reason why, in our large cities, the younger men who looked forward to having a hospital ward should not do some general medical practice, but they should look forward to building their reputation chiefly on their work in the dispensary and hospitals. He was quite sure that the method used in London had proved very successful. Some of the brightest and most successful medical men had not been in general practice, but had developed directly from dispensary and hospital work. There was no reason why the young medical man, in his first few years, should not learn the mere technical use of the laryngoscope and of the ophthalmoscope: indeed, some of this knowledge was now acquired in the senior year at the medical school.

The Consultant Must Keep Young.—He was sure if Dr. Flint did not know much about bacteriology he always took care to have around him young men who did. The great feature of Dr. Flint was that he retained to the last a great deal of receptivity; he had less lime salts in the cells of his cortex than any other man of his age whom he had met. He was young to the end, and apparently because he kept young men always about him.

The Diagnosis All-Important.—In a large proportion of cases, he thought, the only important function of the consultant was to establish the diagnosis. The last three cases that he had seen in twenty-four hours illustrated this very well. One man was dying of pernicious anæmia, because it had not been recognized, and he was being treated for malaria. The diagnosis would certainly prolong his life, to say the least. In the second case the diagnosis was not of importance, as it happened to be a cancer of the stomach. In the third case the diagnosis might or might not save the woman's life—it depended upon the surgeon. She had a stone in the common duct. Hundreds of dollars had been uselessly expended on her for medicine, all for the lack of a correct diagnosis. One sad feature about the life of the consultant was that he came often as a *nunc dimittus*—as simply the one who preceded the undertaker.

A Brighter Future for Internal Medicine. — Dr. Osler said that he thought the position of internal medicine would become better and better in this country, because the younger men would in greater numbers devote themselves to internal medicine in the broader sense of that term. After all, as Dr. Jacobi had said, the chief prizes of the profession did not fall into the hands of the specialist, but into the hands of men who had passed through many years of faithful and unremitting toil.

Vote of Thanks.—On motion of Dr. Polk, the academy tendered Dr. Osler a vote of thanks for the eloquent paper that he had so kindly presented.

SECTION ON SURGERY.

Stated Meeting, October 11, 1897.

B. Farquhar Curtis, M.D., in the Chair.

Intra-Uterine Fracture Complicated with Congenital Absence of the Toes and Metatarsal Bones.—Dr. A. M. Phelps exhibited an infant with this condition. At the sixth month of intra-uterine life the mother while in a street car had been injured by a heavy woman falling upon her. She gave birth to the child at full term, after a dry labor. It was then discovered that the infant's tibia and fibula midway between the knee and ankle were bent at a right angle, the sole of the foot looking directly backward. There was also an absence of three of the toes. The child had been brought to him when it was four months old, and he had advised postponing operation until the age of nine months. He had then operated, cutting down upon the point of fracture. He was able to demonstrate that it was indeed a fracture, because the upper fragment overlapped the lower, the latter being joined at right angles to the upper. A sufficient amount of bone was cut away to allow the foot to be placed in the normal position. Radiographs of the condition were presented, and they illustrated the points brought out. Photographs of the case before operation were also shown. At the present time there was a shortening both of the femur and of the tibia and fibula, of about three inches. The points of interest were these: (1) An intra-uterine fracture occurring with a congenital deformity of the foot; (2) the importance of the operation which was performed, as it placed the foot in such a position as allowed the foot-bearing socket for an artificial limb to be worn with great comfort; (3) it might also permit the limb to grow. An amputation at any time before adult life would very probably result in a conical stump, and if the foot and limb were left in their original position there might result extreme non-development with great shortening.

Chronic Hydrocele with Calcification of the Sac.—Dr. B. Farquhar Curtis presented a man, forty-one years of age, a native of Nassau, who for over twenty years had had what had been supposed to be a tumor of the testicle. Nothing was done in the way of treatment, as it was neither painful nor a source of great discomfort. On his admission to the hospital there was a tumor occupying the left side of the scrotum. It had a smooth hard surface, and the testicle could not be felt. Very firm pressure gave one the impression that the tumor was cystic. The test with light was negative. At first it was thought that a hydrocele could be excluded on account of the absence of translucency, yet the tumor had the shape and form of a chronic hydrocele in which the sac had become greatly thickened. The latter condition, of course, would explain the absence of translucency. At one examination an "egg-shell crackling" was obtained. At the operation the knife could not be made to penetrate the

mass. The cord was healthy, and, as the testicle could not be found anywhere, it was thought best to remove the whole mass. This was done, and then examination showed the condition to be a chronic hydrocele with an unusual amount of calcification. There was no history of tapping or anything else which would be likely to cause calcification. The entire sac had been converted into a firm shell. The sac contained a fluid very much like pea-soup in appearance, but examination showed it to be a mixture of cholesterin crystals with some fatty detritus. On the inner surface were some rounded masses, evidently due to some hæmatoceles that had formed there. The testicle lay at the back of the sac, and the latter was so distended that it had pushed down the epididymis quite flat. The operation had been done on September 30th, and the patient had made a good recovery.

Mammary Carcinoma; Operation by Meyer's Method.—Dr. Franz J. A. Torek presented a patient from whom a carcinoma of the mamma had been removed by Meyer's method of operating. It had been objected, he said, that this method was very mutilating, and was unnecessarily severe in many cases. An examination of his patient would, he thought, refute the statement that the operation was a mutilating one, notwithstanding the fact that the operation wound was very extensive; *i.e.*, its upper boundary was the clavicle, the inner boundary the sternum, the lower boundary the lower portion of the pectoral, and the posterior and outer boundary the latissimus dorsi muscle. Even by careful tests it was difficult to detect any distinct loss of function; even the adduction of the arm posteriorly was perfectly well carried out by the anterior and posterior fibres of the deltoid. This patient got up on the seventh day; the wound was entirely healed at that time, and she was discharged from the hospital on the fourteenth day. It would be observed that the tumor in the breast was comparatively small. About an inch and a half from the sternum and under the clavicle there had been a minute carcinomatous gland which no one could have possibly detected and removed except by this radical method. This in itself was a sufficient justification of this plan of operating. He had frequently found the glands infected under the pectoralis major muscle, and on this account believed that carcinoma of the breast should be removed by this method, and that we should not individualize and select other operations for certain cases. According to his experience, motion was better when the pectoral muscles were entirely removed than when they were cut through and united again, owing to the fact that when they were operated upon by the latter method there was more downward traction. The tumor had first been noticed by the patient last April, and the operation had been done on September 3d.

Amputation of Shoulder-Joint for Carcinoma; Skiagraphs.—Dr. Arthur L. Fiske presented a man, thirty-nine years of age, who had entered his service at the Cancer Hospital on August 30th. The family and personal records were good. Last January the man had first experienced a slight pain in the shoulder, and this had gradually become more severe. In the early part of June a swelling had been noticed about the shoulder, accompanied by more or less disability. There was no history of any injury. The clinical diagnosis was subperiosteal sarcoma. On September 11th, the shoulder was removed. This case illustrated well the value of skiagraphy in the diagnosis of such conditions. The skiagraph exhibited showed the difference in density between the tumor itself and the muscle mass about the shoulder. In carrying out the amputation a long incision had been made over the head of the bone in order to explore the tumor. It had been found to extend up into the region of the scapula. The vessels having been ligated through the incision, a circular amputation had been done, and the end of the clavicle and the glenoid cavity of the scapula removed. The pathological diagnosis of the tumor was a sarcoma undergoing myxomatous degeneration. The patient had had for a considerable time a good deal of cough and expectoration, and in the sputum numerous tubercle bacilli had been found.

Volvulus with Enormous Distention of Bowel.—Dr. Howard Lilienthal exhibited a man, forty-six years of age, who had been admitted to the Mount Sinai Hospital last August, with a diagnosis of appendicitis. He had been sick for two days, and constipated for a long time previously. The constipation at the beginning of the attack had really amounted to obstipation. On admission he had a temperature of over 101° F.; there was slight icterus; the face was anxious; the pulse was 100 and of good quality, yet the extremities were cold. There was an intensely painful point on the right side, but it was somewhat removed from the location of the appendix. There was also general abdominal tenderness, with so much distention that the speaker had been inclined to suspect general peritonitis. The patient was at once put under chloroform, and the usual incision was made for appendicitis. This exposed a very dark mass, which was tympanitic on percussion. Only on close examination was it possible to discern the striations characteristic of the large intestine. A very large coil of intestine was, with difficulty, removed after enlarging the incision. Actual inspection showed the cæcum and ascending colon to be in their normal positions. The direction of the fibres indicated that the condition was probably a volvulus of the cæcum, and this proved to be the case. The volvulus was readily reduced, but still there was no effort at evacuation. With a rather large trocar it was punctured at the upper part, and a considerable quantity of gas evacuated. Notwithstanding this it was still impossible to replace the intestine, so he deliberately made an incision, one inch long, into it. This gave vent to an enormous quantity of fæcal material. Although he did not expect the patient to recover, the operation was completed, the openings in the bowel being carefully closed with sutures. A packing was inserted down to these points, and the intestine stitched there to the abdominal wall. Strangely enough, the patient had made a perfectly smooth recovery, and the bowels had been easily kept open from the day after the operation.

Dr. B. F. Curtis said, with reference to Dr. Phelps' case, that there was a clear history of fracture, and the bone also showed it clearly. He thought that Dr. Phelps' theory that this was entirely independent of the condition of the toes must be accepted as correct.

Dr. Lilienthal asked what was the theory on which the calcification in the hydrocele case was to be explained. There was no evidence of tuberculosis, and the patient did not have atheromatous arteries.

Dr. Robert T. Morris said that if the tension had been sufficiently great to cause fatty degeneration of the endothelium, the neutral fat might have become absorbed and the fatty salts replaced by calcareous salts. It would be necessary, however, to account first for the fatty degeneration of the endothelial cells. Such a degeneration might arise from excessive pressure, probably from an acute necrosis.

Dr. Curtis said that he was inclined to attribute the calcification to the same causes as those which give rise to calcification of the spleen. The case was certainly a very rare one.

Dr. C. N. Dowd, referring to Dr. Torek's case, spoke of the advantage of the routine removal of the pectoral muscles in cases in which there was a clear

diagnosis of carcinoma of the breast. There had been a remarkable improvement, he said, in the statistics of breast amputations in proportion as the very radical method of operating had become more generally accepted. The mutilating effects were certainly not so great as had been at first supposed. He had himself operated at least twenty times, and all of these patients had had good use of the arm, and in some of them the functional result had been remarkably good, the patient being able to do considerable manual labor. The danger of amputation of the breast had not been especially increased by the more radical method of operating.

Dr. Fiske was inclined to favor a higher incision even than that used by Meyer, for there had been less subsequent œdema and binding down in the axilla in cases in which the higher incision had been used.

Dr. Torek said that in the case presented he had used an S-shaped incision, and had found it a very convenient one. He also liked the high incision, and the straighter it was made, the less would be the difficulty experienced in operating. It was his own practice, however, not to adopt any conventional method of making the incision, preferring to shape it to suit the individual case.

Dr. Curtis said that he felt that the operation was too severe for mild cases, although he hesitated to say so, in view of the improvement in the statistics since the more radical method had been adopted. But we should not allow ourselves to be misled. According to his experience, the tendency had been for the recurrence to take place in the skin, and hence he was inclined to sacrifice more and more of the integument. In the case presented, it was true the tumor was a small one, yet the case was undoubtedly severe, as shown by the extensive involvement of the glands. It seemed to him that in the average case it was illogical to cut away the muscle extensively, when it was impossible to cut very much beyond the disease in the glands. He had been one of the first surgeons in this city to operate by Heidenhain's method. The case was one of recurrent carcinoma. A year later the patient had returned with a carcinoma in the opposite breast. The entire muscle on that side had also been removed, and when the patient was last heard from, three years afterward, there had been no further recurrence. Although the functional result in these cases seemed to be good, it could not be denied that there was a decided loss of power. This could be best observed by causing the patient to keep the elbows close to the side, at the same time separating the hands widely, and by testing the patient's power to squeeze one's hand.

Dr. J. A. Wyeth said that he believed with Dr. Torek that in dealing with malignant growths we could scarcely go wrong in adopting a wide and free extirpation. A good deal depended upon the length of time the neoplasm had been present, upon what part of the mammary gland it had primarily involved, and upon how extensive were the adhesions of the mammary and pectoral fasciæ. When the upper part of the breast was first involved, it seemed to him that a wide extirpation should be done in every instance; it should also be done in those cases in which there was a reasonable doubt on this point. In a certain proportion of cases—and that proportion was increasing, because people were coming earlier for operation—in which there was a limited area of invasion in the lower and outer quadrant, the removal of the pectoralis major or its clavicular fibres was not essential. He removed a part, or nearly all of the sternal and costal portions of the pectoralis major, and was particular to take away all of the pectoralis minor. It was a clinical fact that the lymphatics of the pectoralis minor were most frequently engorged with the metastases. In almost all cases it was necessary to remove the axillary contents from above downward.

Dr. Torek said that he had become firmly convinced by experience of the advisability of removing the pectoral muscles. In cases apparently much milder than the one just presented by him, he had found repeatedly an infection of the glands under the pectoralis minor at a point where it would have been impossible to detect it except by this method of operating. He had not intended to lay much stress upon removal of the muscle, but this course enabled him to extirpate the visibly diseased tissues—the small glands underneath the muscles.

Dr. Wyeth, referring to Dr. Fiske's case, said that so far as he knew, there was not a successful case on record of an operation like the amputation of the shoulder just described by Dr. Fiske. He had himself done two of these operations, and both cases had terminated fatally within six months.

Dr. A. M. Phelps said that about five years ago he had operated in a case of sarcoma. The microscopist had been in doubt as to whether the case was one of pure sarcoma or of fibro-sarcoma, but from the fact that recurrence took place it was undoubtedly a pure sarcoma. It began in the glenoid cavity and involved the scapula more than the humerus. At the time of the operation there was no involvement of the humerus. He extirpated the scapula and saved the arm. A year and a half later the disease recurred in the head of the humerus. He then removed the humerus. At the present time the man was alive and well—two years since the second operation. After the removal of the scapula the man had had a traumatic empyema which had ruptured into the wound in two weeks, and after this had discharged for three or four weeks recovery had taken place.

Dr. Fiske said that he had removed a sarcoma of the shaft of the humerus on January 1, 1897. He had seen the woman in the middle of last July, and up to that time there had been no recurrence. A photograph of this subject was exhibited.

Dr. Wyeth said that he had presented to this section two years and a half ago an enormous osteo-sarcoma involving the head of the humerus. He tied the subclavian artery under cocaine anæsthesia, in the third surgical division, in order to arrest hemorrhage occurring during an exploration that he had made. He had afterward cut off the bone at the shoulder-joint, and presented the patient to the section while the wound was still an open one. This man was inoculated three times with erysipelas toxins, and was now well and strong, and he was beginning to think that the recovery was due to the erysipelas inoculations.

Dr. Curtis referred to the case of a young girl who had had a small tumor involving only the acromial end of the scapula, but so situated as to require the removal of the entire upper extremity. This he had done in September, 1896, and she had made a good recovery from the operation. However, recurrence took place in the scar very shortly afterward, and the girl died in the course of about three months.

Dr. Phelps thought the age of the patient and the character of the tumor had much to do with the matter of recurrence. His patient had been about thirty-eight years of age. In younger persons osteo-sarcoma was usually much more malignant.

Dr. Torek asked if any one had had a case of apoplexy and death occurring after amputation of the shoulder-joint. He had performed such an amputation on one patient, and she had done well up to the sixth day, when she had suddenly been attacked with apoplexy and died. In another case of carcinoma of the neck, in which an extensive operation had been required, an apoplexy had occurred on the

third day after the operation, and death had taken place about two months later.

Dr. George E. Brewer, speaking of Dr. Lilienthal's case of volvulus, said that the distention of the bowel had been something enormous; the mass was certainly as large as a man's thigh. From what he had seen of this case he had felt that it would have been utterly impossible for anybody to make a correct diagnosis before the operation.

Dr. Morris inquired as to where the bowel had been sutured to the abdominal wall after the operation.

Dr. Lilienthal replied that he had made it fast to the abdominal parietes by a suture above and below.

Dr. Morris said that a German surgeon had published a method of preventing the recurrence of volvulus by suturing the entire affected part to the peritoneum of the abdominal wall.

Dr. Lilienthal said that in his case the volvulus had been altogether too large to sew in this manner to the wound.

Dr. Wyeth said of the plan of suturing to the abdominal wall, that a suspicious point in the line of suture was an important part in the technique of intestinal surgery which was too often neglected, and which was not infrequently responsible for the fatal result.

Strangulated Hernia; Extensive Intestinal Resection; Recovery.—Dr. Thomas H. Manley presented a specimen of intestine that had been removed from a young Chinaman who had developed a strangulation of the bowel. No medical aid had been sought for four days, and there had then been enormous distention of the abdomen, a temperature of 103.5° F., incessant vomiting, and a feeble pulse of 130. The point of strangulation in the hernia was found in the usual situation, and the intestine was found to be perforated in several places and completely divided at one point. In this case he had used a running Lembert suture and had made a lateral intestinal anastomosis. The wound had been left open in the manner which had been so wisely insisted upon by the preceding speaker, and he believed that it was owing to this fact that his patient had recovered. The portion removed measured twenty-eight inches.

Dr. Morris said regarding this matter of leaving an open wound at a suspicious point that it was dangerous teaching, albeit safe enough practice in the hands of a surgeon of judgment and experience. Such a method always left a weak point, and exposed the patient to the danger of fistula.

Dr. Lilienthal said that, while no doubt leaving the wound open prevented one from obtaining an ideal surgical result, it would often be found a means of saving life, and certainly the danger of a fistula was a slight one compared with danger to life.

Epispadias.—1. A perineal fistula, made by cutting from the outside, upon the finger introduced into the bladder above to distend the perineum or by the use of Watson's perineal drainage tube. The subsequent steps may be proceeded with at once or ten days after, when time and rest have allowed drying and healing of excoriations. 2. Dissecting up the urethra, which lies open upon the upper surface of the perineum. 3. Separation by blunt dissection of the loosely connected cavernous bodies. 4. The urethra, laid in the gutter then formed, is secured by two sutures through the lower floor of the urethra and skin of the under surface of the penis. 5. The free edges of the urethra are united with continuous catgut ligature over a silver catheter extending to the bladder. 6. The cavernous bodies are then united with continuous catgut, and the skin, which is usually abundant, with interrupted silkworm gut.—Cantwell, *Annals of Surgery*.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE MEDICAL COUNCIL: CLAIMS OF THE CANDIDATES: PERSONAL NOTES—OPENING OF THE SCHOOLS; THE LECTURES—DR. MANSON, DR. GOW, DR. PYE-SMITH, SIR J. CRICHTON-BROWNE, DR. CARTER—TYPHOID EPIDEMIC AT MAIDSTONE—SIR SAMUEL WILKS, BART. —DEATH OF CAMBRIDGE PROFESSOR.

London, October 5, 1897.

The contest for the medical council is producing a fine crop of electioneering circulars, to say nothing of the meetings, which have attracted larger numbers than was expected. If the excitement continues to increase until Monday, we shall redeem the profession from its apathy. But this interest in the election may affect only the larger centres. It is impossible to gauge the effect of the many circulars on the scattered country practitioners. If they rally around their own order they can easily elect either Dr. Diver or Dr. Rigby, and either would be efficient as a councillor. But if, as I think likely, they do not consider general practice in the country the chief qualification, the contest will lie between Mr. Victor Horsley, F.R.S., and Sir Walter Foster. Those who think we should be represented by a man of the highest repute must support Mr. Horsley, whose fame as a surgeon is supplemented by his position in science, for he grasped its blue ribbon at an unusually early age. Sir Walter Foster calls himself a provincial physician, but his opponents say that as a political man with a residence in London this is only an electioneering pretence. He is consulting physician to the Birmingham Hospital, where he was on the active staff for many years and discharged its duties satisfactorily. His little manual on the sphygmograph (1866) is being again talked of, though not in a way to gratify him; for he gave a sitting to an interviewer and photos of himself in his consulting-room, with the instrument prominent as well as a post card from Mr. Gladstone congratulating him on his skill. The paper containing the interview was produced at a meeting in his support, when he excused it on the ground that as a member of Parliament the public desired information about him, and complained that the matter was sprung upon him without notice, at which some of his supporters affected indignation but others were evidently rather shocked, while his opponents chuckled.

But it is as a medical politician that Sir Walter is best known. He has served ten years in the council, having first been nominated by the British Medical Association, but that in a manner which was condemned at the time and has caused him to bear the burden ever since of being regarded as the tool of the then ruling clique.

But Victor Horsley is also a medical politician, and bids fair to take a place in this respect such as that of the late Mr. Rivington.

The midwives question is the one which is most prominent at the present time and which agitates all ranks of the profession. On this Sir W. Foster in the council and in Parliament has proved weak-kneed and is largely regarded as a dangerous or unsatisfactory representative. Yet to the amazement of many he has secured the support of Dr. Rentoul, the most energetic opponent of the midwives bills, which Sir Walter supported. Mr. Horsley is much sounder on this question; he is opposed to any legislation upon it which does not place midwives under the absolute control of registered practitioners. Moreover he advocates reform of the council, amendment of the acts, and suppression of illegal practices. This is an attractive

programme, and as to the last item his experience as the moving spirit of the Defence Union would be of great service.

The medical schools opened with the month in the usual manner, though defections from the ancient custom of introductory addresses continue. Consequently *conversazioni* and other reunions are gradually supplanting the more time-honored opening. These latter, too, have a more limited interest, each school caring little how the others celebrate the occasion. This year, too, the interest in the opening day has been overshadowed by the election. The addresses, however, were quite equal to the average.

At St. George's Hospital Dr. Patrick Manson urged the importance of a study of tropical diseases. The hospital has lately secured his services as a lecturer on this subject, one on which his experience in the East eminently qualifies him. Dr. Manson's work on the filariais universally known, and his writings on this and cognate subjects are always regarded with interest. He is now physician to the Seamen's Hospital and medical adviser to the Colonial Office. He had long service in the East as medical officer of Her Majesty's consulates (China, Amoy, Takao, Kowloon, etc.).

At King's College the address was given by the new principal, Dr. Archibald Robertson, who succeeds Dr. Wace. The lecturer lamented the "hope deferred" of a teaching university for London, though he thought the injury to the higher general culture by the present state of things did not so much affect medical education as might be supposed.

Dr. William John Gow gave the address at St. Mary's Hospital. He is the assistant obstetrician there and distinguished himself at the London University. He was not educated at this school but at "Bart's." His position will improve if he remains, but St. Mary's has recently been negligent of her sons and this has given rise to many speculations about her system of appointments, once so lauded, but this year leading to the loss of three men who had spent years in her service. Dr. Gow gave excellent practical advice to the students and displayed therein much "common sense"—an admirable quality which he recommended them to cultivate.

Dr. Pye-Smith, now the senior physician at Guy's, went to Sheffield to give the address, and Sir J. Crichton-Browne to Birmingham. *Per contra*, provincial gentlemen came to London's opening day. Dr. Carter, of Liverpool, addressed the students of Charing Cross and the principal of Mansfield College, Oxford (Rev. Dr. Fairbairn), those of St. Thomas' Hospital.

The epidemic of typhoid at Maidstone has gone on extending its ravages all the week, though with varying degrees of advance. Some days over sixty new cases were added to the roll. Yesterday there were twenty-eight, making the total attacks one thousand four hundred and fifty-seven. Visitors to the town have also carried infection to other places and caused considerable alarm, but they are easily isolated—a very different thing from a polluted water supply. The supply from the infected spring has been stopped, but why this step was so long delayed remains to be ascertained. It is widely asserted that the company was reluctant on account of the cost, but surely it could have cut off that spring for the period that the bacilli can live in water, and a dreadful responsibility has been incurred by not having done so. It is stated to-day that Dr. Semple has gone from Netley to offer a vaccine with which experiments have been made at that army school, where he is assistant professor of pathology.

The president of the College of Physicians, Sir Samuel Wilks, baronet, has always been regarded with the greatest esteem, and on Wednesday about two hundred and sixty of his friends and pupils honored him by a dinner. In replying to the toast of the evening he gave some extremely interesting remarks on his own career. He has been known to be exceedingly modest and destitute of any self-assertion. Now he tells us that as a child he was shy—so much so as to be a misery to himself and those about him. At school his master said he needed a spur and all his life he has found he wanted a spur. Let alone, he initiated nothing, having no ambitions. He had fallen into his appointments and supposed he had been fit for them. He had fallen into several posts in his life and accepted the last and highest reluctantly. That was his outer professional life he said, but every one had an inner one known only to himself. He had had troubles which brought headaches, want of sleep, and all that made a man the victim of his organization. He had never courted reputation or cared a straw for public opinion. The only thing he cared for was the respect of his medical brethren, so he had the greatest satisfaction in having his present position thrust upon him. He said a good deal more, but as illustrating the man I need only quote a remark that as far as he knew only three Samuels were famous, viz., the prophet, Dr. Johnson, and Mr. Weller, Jr.

Dr. C. S. Roy, F.R.S., professor of pathology at Cambridge University, died on Monday, and his funeral is to-day. He was only forty-three years old, and had been ailing some two years. He had been director of the Brown Institution, and had worked there and on the continent before being appointed to Cambridge. His most important researches were those on the heart, but he also invented a number of physiological instruments, and he gave a great impetus to scientific work in his department and enlisted a number of students in the great work of research. There will scarcely be a vacancy in the chair, as some time ago, in consequence of his ill-health, Dr. Kanthack was appointed assistant professor and has discharged its duties.

OUR PARIS LETTER.

(From our Special Correspondent.)

DECLARATION OF EPIDEMIC DISEASES—TRANSPORTATION OF PATIENTS WITH INFECTIOUS DISEASES IN PUBLIC CONVEYANCES—THE NEW BUILDINGS AT THE SORBONNE—HYDROPHOBIA—THE FACULTY OF MEDICINE, ETC.

PARIS, October 11, 1897.

THERE is nothing that touches the public health so closely as the spread of epidemic diseases. The French authorities have laid down explicit rules in conformity with the law regulating the declaration of contagious disease in the colonies. Those as actually applied in Paris are now claiming attention. Differing somewhat as to detail from those in force in the colonies, they are as follows:

"ARTICLE 15. Every doctor, health officer, and midwife is held to declare to the public authority, as soon as his or her diagnosis is established, the following epidemic diseases that may come under observation: typhoid fever, exanthematic typhus, variola or varioloid, scarlatina (scarlet fever), diphtheria (croup and membranous angina), suette miliare, cholera and choleriform diseases, plague, yellow fever, dysentery, puerperal affections (when professional secrecy with reference to pregnancy has not been demanded), and ophthalmia of the new-born.

"ARTICLE 21. The doctor of medicine or health officer who does not make the declaration prescribed by article 15 shall be punished by a fine of from fifty to two hundred francs."

It will be seen that the list of epidemic and contagious diseases, while embracing suette miliare or sudor Anglicus, a comparatively rare disease, omits measles, mumps, whooping-cough, and erysipelas,

which, of almost daily occurrence, are not only contagious and infectious but epidemic as well.

The nature of the disease being determined and the declaration made, a question of perhaps even greater importance at once presents itself. It is this: The transportation of patients affected with contagious diseases to the hospital. This, of course, should be done in wagons or ambulances specially designed and set apart for such service, made in such a manner that they can be hermetically closed and thoroughly disinfected by means of formaldehyde or sulphurous gas after each trip. The public health authorities in Paris, appreciating the fact that such patients leave behind them the germs of infection for other passengers that may come after them when they are transported in public carriages, tramways, or omnibuses, have instituted a special service of this kind. Nevertheless such patients are still sometimes transported in ordinary hired carriages. These should never be allowed to return without having first been disinfected with an atomized solution of sublimate. At the Aubervilliers Hospital they give the coachman an indemnity for the time lost by the disinfection. There ought also to be a law enacted, as none, I believe, now exists in Paris, against persons aware of their condition using public carriages for transport. Such an act exists in London, and its violation is punishable by a fine up to £40. In case of urgency the occupant must notify the coachman and indemnify him, he himself being subject to a like fine if he does not immediately after have his vehicle disinfected.

Speaking of public health, some very interesting special health manœuvres for the military government of Paris will take place on October 12th and continue to the 16th. They consist of conferences to be held at the Bellechasse barracks and the docks of the sanitary service department, followed by mobilization and departure of the sanitary corps for Sartory. During the manœuvres there will be a march and fight of a division between Versailles and Velizy. The battlefield will be illuminated and the wounded sought for during the night; there will be a sanitary-service exercise or drill after the combat, with functioning of the hospital of evacuation at the des Matelos station, the ambulance leaving on the 16th, when there will be a *résumé* of the operations.

The old buildings of the Sorbonne, which those who have passed their doctorate at Paris will remember, are about to disappear; in fact workmen have already begun the work of demolition. At the same time the new buildings are being rapidly put into condition and furnished. On the 5th of November the amphitheatre of anatomy and the library will be ready for use. The ceiling of the latter is by William Dubufe and was in the last salon of the Champs de Mars. These changes will take place without any special ceremony and the new buildings will be occupied, a few rooms at a time, as the work of finishing up and installation progresses.

A fatal case of hydrophobia has just occurred, in which it was at first supposed that some insignificant scratch on the hand of the young girl who died had unconsciously come into contact with some object contaminated by the saliva of a dog. It turned out, however, upon investigation that she actually had been bitten about a month ago. The bite, however, was very slight, and as the dog showed no symptoms of hydrophobia no attention was paid to it. The animal had evidently been previously bitten by a mad dog, and was thus in a condition to give hydrophobia before the disease developed in him. This explanation accords fully with the uncertainty existing as regards the incubation period of hydrophobia, which is always long, sometimes extraordinarily so.

Professor Raymond has issued the second series of his "leçons" on "Diseases of the Nervous System," held at the Salpêtrière. It is a volume of the same size and scientific comprehension as the first. It is done in the author's masterly style and is a continuation of what is the greatest work on diseases of the nervous system of our day. Professor Raymond will shortly resume his work at the Salpêtrière for the winter.

The Faculty of Medicine has just published the regular programme and regulations regarding inscriptions, student cards, *travaux pratiques*, etc. An innovation is the following, taken from the text of the regulations: "Those students who may desire the card with photograph will have the photograph pasted on the back of the card, which they will subsequently present at window No. 4, on Mondays and Tuesdays from twelve to three o'clock, for affixation of the seal of the faculty." This detail is not without its importance, and will not only prevent the loan or exchange of cards but will also serve as a means of positive identification.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 23, 1897:

	Cases.	Deaths.
Tuberculosis	196	116
Typhoid fever	32	17
Scarlet fever	98	8
Cerebro-spinal meningitis	0	4
Measles	104	4
Diphtheria	144	16
Laryngeal diphtheria (croup)	2	1
Chicken-pox	11	0

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the United States Marine Hospital service, during the week ended October 23, 1897:

		Cases.	Deaths.
YELLOW FEVER—UNITED STATES.			
Alabama, Mobile	October 21st to 22d	49	7
	Montgomery, October 15th to 24th	..	1
Louisiana, Baton Rouge	October 12th to 22d	2	1
	Franklin, October 14th to 21st	3	1
	New Orleans, October 16th to 22d	306	53
Mississippi, Bay St. Louis	October 17th to 19th	7	1
	Biloxi, October 16th to 22d	116	6
	Cayuga, October 16th to 22d	19	2
	Canton, October 15th to 22d	16	
	Edwards, October 16th to 22d	80	5
	McHenry, October 16th	1	
	New Verna, October 15th to 21st	3	
	Pascagoula, October 15th to 22d	13	1
	Scranton, October 15th to 22d	27	2
	Waveland, October 14th	2	
Tennessee, Memphis	October 22d	1	
YELLOW FEVER—FOREIGN.			
Cuba, Cardenas	October 11th	..	1
	Havana, October 21st to 14th	..	30
	Matanzas, September 30th to October 2d	..	2
	Regla, September 28th to 13th	..	30
	Santiago de Cuba, October 9th to 16th	..	8
	Sagua la Grande, October 5th to 11th	..	5
Jamaica, Kingston	September 1st to October 2d	6	7
CHOLERA—FOREIGN.			
India, Bombay	September 14th to 21st	..	33
	Calcutta, September 4th to 11th	..	3
	Madras, September 11th to 18th	12	6
PLAGUE—FOREIGN.			
India, Bombay	September 14th to 21st	..	35
SMALL-POX—UNITED STATES.			
Alabama, Birmingham and Nurfee	October 9th to 16th	2	
Pennsylvania, McKeesport	October 9th to 16th	1	
Tennessee, Memphis	October 22d	1	
SMALL-POX—FOREIGN.			
Brazil, Rio de Janeiro	September 18th to 25th	7	1
Canal, Candelaria	October 9th to 15th	..	1
	Seguia la Grande, October 2d to 9th	80	2
India, Calcutta	September 4th to 11th	..	2
Russia, Odessa	September 25th to October 2d	1	
	St. Petersburg, September 25th to October 2d	16	5
	Warsaw, September 25th to October 2d	..	5
Scotland, Glasgow	September 25th to October 2d	17	
Spain, Madrid	September 28th to October 25th	..	2

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Original Articles.

EXPERIMENTS ON URINARY TOXICITY.

BY MARY PUTNAM JACOBI, M.D.,

AND

MARY MITCHELL RYDD, M.D.,

TEN years ago Bouchard remarked: "In certain cases of albuminuria, the innocuity of the urine is remarkable; the kidneys seem to have separated the toxic substances from the urine, keeping them within the organism."[1]

In thirteen cases of nephritis we examined the toxicity of the urine by Bouchard's method, making the injection, however, not into the auricular vein of the rabbit, but into the superficial jugular. The toxicity was found to be diminished in nine cases, increased in five.

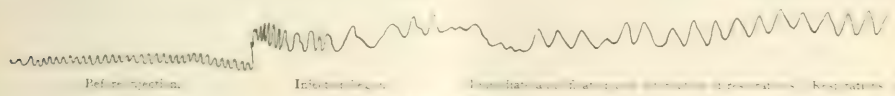
There is no necessary relation between the toxicity of the urine and the toxic condition of the organism from which the urine is derived. "The unity of toxicity or *urotoxie* [I again quote from Bouchard] is the quantity of toxicity (toxic substance) necessary to kill a kilogram of a living organism."

The urotoxic coefficient is the quantity of *urotoxie* which a kilogram of human tissue can produce in twenty-four hours. Thus: "A healthy man of 60 kgm. excretes in twenty-four hours 1,200 c.c. of urine. If 50 c.c. of this urine kill 1,000 gm. or 1 kgm. of animal tissue, 1,200 c.c., or the whole amount, will kill 24 kgm. Thus: 60 kgm. of human tissue produce and eliminate in twenty-four hours enough toxic material to kill 24 kgm. of animal. Therefore 1 kgm. of the human tissue produces $\frac{1}{60}$ of this, or ($\frac{24}{60}$) 0.4 kgm. of animal, or 400 gm. The average coefficient deduced from observation of a sufficient number of healthy individuals is 0.464; or, in other words, 1 kgm. of healthy human tissue should in twenty-four hours produce enough toxic substance to kill 464 gm. of living matter, as contained in the organism of the rabbit."[2]

The toxicity of the organism can be estimated from that of the urine only if the kidneys are in a condition normally to perform their work of elimination. Hence, under circumstances which imply that the usual amount of toxin is being elaborated in the organism, diminution in the urinary toxicity, like marked diminution in the amount of urea, itself suffices to suggest inadequacy in the secreting mechanism of the renal glands.

This inference is confirmed by the diminished toxicity of the urine in so large a number of albuminuria cases. Of healthy urine, between 30 and 60 c.c. per kilogram of rabbit's weight is required to kill the animal, the average being 45 c.c. The following cases show the diminished toxicity of albuminous urines:

CASE I.—Woman, with chronic parenchymatous nephritis; albumin, one-fifth the volume of urine in the test tube. Amount of day urine, 585 c.c. The urine was allowed to run into the superficial jugular vein of a rabbit, from a burette, at the rate of 10 c.c. per minute. The rabbit weighed 2,450 gm., and succumbed when 205 c.c. had been introduced. Thus 83.67 c.c. would have been required to poison 1,000 gm. The urinary toxicity was represented by the figure 83.67, one-seventh quantity of day urine. As the weight of the patient was not known, nor the amount of urine for the entire twenty-four hours, the urotoxic coefficient could not in this case be determined. The following tracing shows the amplification and slowing of the respiration which immediately followed the injection. The respiratory movements were collected by means of a Marey drum attached to the thorax and communicating in the usual way with a second drum, lever, and revolving cylinder. Myosis began after the injection of 10 c.c. Exophthalmos began after 115 c.c. There was no convulsion until that which immediately preceded death. This confirms the statement of Bouchard that the day urine contains narcotic substances, but not those which tend to produce convulsions.



Case I.

CASE II.—Slight trace of albumin. Urea, 23.56 gm. Urine scanty and dark, 760 c.c. A rabbit weighing 1,000 gm. was killed with 93 c.c. of urine. The patient weighed 70 kgm., and the calculated urotoxic coefficient was 0.116.

In this case there were very few symptoms of renal disease and the amount of urea was fairly adequate, but the low toxicity of even scanty and concentrated urine, and the very low urotoxic coefficient, indicated more renal inadequacy than would have been otherwise suspected. The patient's mother had died of Bright's disease a few months previous to the observation.

CASE III.—Parenchymatous nephritis. Much albumin in urine. Night urine, 475 c.c. The toxicity was represented by 88 c.c. per 1,000 gm. of rabbit. The injection was followed by a series of convulsions, the first beginning when 25 c.c. had been injected; the seventh after 164 c.c. had been injected (the rabbit weighing 1,860 gm.), and followed by death. Myosis began with 30 c.c., and the pupil was contracted to a pin point at 142 c.c.

The case illustrated the specially convulsive properties of night urine.

CASE IV.—Man, weighing 75 kgm. The urine was only slightly albuminous, but contained granular casts. The toxicity of the mixed urine was just below the normal minimum, but the urotoxic coefficient was decidedly diminished, 0.301.

[1] Leçons sur les Auto-Intoxications, p. 27, Paris, 1887.

[2] Loc. cit., p. 38.

Bouchard says that the toxicity of the mixed urines may easily appear too low, because the opposing toxic principles of the day and night urines may partly neutralize each other. The precaution of separating the two was unfortunately not observed in this case.

CASE V.—Advanced case of chronic interstitial nephritis. Patient much emaciated. Weight, about 110 lbs., or 55 kgm. Trace of albumin in day urine; amount, 960 c.c.; specific gravity, 1.005; urea, 2.88 gm. In night urine, urea, 5.965 gm.; quantity, 1,193 gm. Total quantity, 2,153 c.c. Total quantity of urea, 8.845 gm. With day urine, 221 c.c. were required to poison 1,000 gm. of rabbit, and there was only one slight convulsion, the animal dying with arrest of respiration without tetanus. With the night urine the toxicity was 174, and there were several convulsions. The urotoxic coefficent, calculated on the average toxicity of the total urine, was 0.208. The toxicity of either day or night urine was less than that of pure water, of which 90 c.c. per kilogram of animal is fatal. The toxicity of the day urine was less than that of the night, a circumstance which Teissier calls "a paradoxal character," and to which he attaches considerable importance. He had observed it in five out of twenty cases.[1]

CASE VI.—Examinations of the urine of this patient were made on several occasions and under interesting circumstances. Previous to the fall of 1893, the patient had been in apparently good health, but had had several pregnancies, which terminated either prematurely after a prolonged discharge of watery fluid from the uterus, or in the birth of a child which lived only a few hours. In the fall of 1893 the patient began to suffer from headaches and from indefinable malaise. There was at the time no albuminuria, but two or three hyaline casts in a minute urinary sediment were obtained by the centrifuge. Under a milk diet the headaches disappeared and the patient felt perfectly well. The urine was tested for toxicity as follows: The patient then being on an exclusively milk diet, with the addition of lithia water, the total amount of urine was 1,440 c.c.; the amount of urea, 34.56 gm., as calculated from the nitrogen. The morning urine was used for the injection, and the toxicity per kilogram of rabbit was 104.34.

On November 8th, after the patient had been for a week on an ordinary mixed diet including meat, the amount of urine was 810 c.c.; of urea, 17.82 gm., almost exactly half the amount excreted on milk diet. The urine submitted to the centrifuge contained three hyaline and one epithelial casts, but no albumin. Its specific gravity was 1.020. The morning urine (390 c.c. in quantity) was again used for the injection, and showed a toxicity of 97.7.

On November 15th, after a second week of mixed diet, the amount of urine was 795 c.c.; of urea, 19.875 gm. The specific gravity of the day urine was 1.025; of the night urine, 1.026, with an abundant deposit of urates. The toxicity of the day urine was 38.13, a figure within the normal range. The patient was feeling bad.

January 24, 1895, about twenty-seven months later, the patient was two weeks pregnant, and the urine was examined again. The amount was 1,283 c.c.; specific gravity, 1.011. No albumin or casts. The amount of nitrogen was 0.024 mgm. to 1 c.c., which, if attributed entirely to urea, would imply 30.792 gm. But when leucomains had first been precipitated by phospho-tungstic acid, the nitrogen estimated in the filtrate, and the urea again calculated, the amount was only 13.471 gm. The toxicity of the urine was 73 per 1,000.

The urotoxic coefficient was 0.230 (normal, 0.464). If the amount of urine required to kill 1,000 gm. of rabbit tissue be compared in these four cases with the amount of urine eliminated in twenty-four hours, further significance may be attached to the figures; thus:

October, 1893, milk diet: Amount of urine, 1,440 c.c.; toxicity per 1,000, 104.34. Proportion to amount, 1 to 13.

November 8, 1893, meat diet: Amount of urine, 810 c.c.; toxicity per 1,000, 97.7. Proportion to amount, 1 to 8.35.

November 15, 1893, mixed diet: Amount of urine, 795 c.c.; toxicity per 1,000, 39.13. Proportion to amount, 1 to 20.

January, 1895, mixed diet, pregnancy of two weeks: Amount of urine, 1,283 c.c.; toxicity per 1,000, 73. Proportion to amount, 1 to 17.57.

In other words, the poisonous dose of the urine was one-eighth, one-thirteenth, one-seventeenth, or one-twentieth of the whole amount. The poisonous qualities of the urine were evidently inversely proportional to these figures, the urine being most highly toxic when only one-twentieth of its total quantity was required to kill the kilogram of rabbit tissue, and least toxic when one-eighth of its amount was required.

The two observations were made at only a week's interval. But on November 8th the patient, although eating meat, was still under the influence of the milk diet, which had only just been interrupted and which had suited her. On the meat or mixed diet the quantity of urine had greatly diminished, and this seems to have been the reason why the toxicity of the urine, though abnormally low, was expressed by so high a proportion of the total amount. But the elimination of toxins was evidently inadequate, and at the end of the second week the patient was beginning to feel very badly. At this time, however, the toxicity of the urine had risen to normal. But apparently this was due to the large quantity of toxins accumulating in the organism under the meat diet, and not to any increase in the adequacy of the eliminative processes, so that there was reason to believe that more poison was formed in the body than, with diminished quantity of urine, was carried out of it. The patient was feeling very badly, and was relieved only upon return to the milk diet and by the attendant diuresis.

It was the diminished toxicity of urine in this case which first suggested the diagnosis of an interstitial nephritis. The diagnosis was remarkably confirmed by the subsequent evolution of the case, thus:

May, 1895, œdema of feet; attack of angina pectoris. Later, attacks of dizziness and numbness of tongue. Pregnancy continues.

September, 1895, uræmic attack indicated by thick speech, giddiness, temporary right hemiparesis; face puffy; albuminuria.

October, 1895, face puffy, albuminuria increased, granular and epithelial casts in urine, marked systolic murmur over tricuspid valve, dulness of right ventricle encroaches on sternum.

On October 6th confined of a very small child, which was completely cyanosed and breathed six hours. The placenta was markedly atrophied.

After delivery the patient suffered for a while from œdema of the lower extremities; then this disappeared, as also the albuminuria. The patient considered herself well, and again became pregnant. This time the pregnancy ran its course without uræmic accidents. At six months the urine contained no albumin, but granular and epithelial casts. At seven months an abundant albuminuria supervened and some œdema of the feet. However, the pregnancy continued to term, and this time a healthy child was born, which, five months after birth, still survives. Two weeks after confinement, however, the mother had a severe attack of double phlebitis, then an attack of pyelitis, during which the urine became almost solid with pus. After

[1] Comptes Rendus Acad. des Sciences, 1888, 7, 107, p. 172.

four months' severe illness she finally recovered, but with persistent albuminuria.

In other cases of undoubted nephritis the toxicity of the urine was diminished on one occasion and increased on another.

Case VII.—March 28th, night urine, 830 c.c., very albuminous; 6.225 gm. urea (as per nitrogen). Toxicity, 63.91. Day urine of same date, 415 c.c. Total, 1,245 c.c. Much albumin. Urea, 17.0525. Toxicity, 68. But on March 27th the toxicity of the day urine had been 11.32—an enormous increase. The patient had been taking no medicines.

Case VIII.—Nephritis of seven years' standing; neuroretinitis; abundant albuminuria; granular casts. March 8th, amount of urine, 2,500 c.c.; toxicity, 135 to 1,000—a marked decrease as thus estimated, but less marked in proportion to the large quantity of urine secreted. The proportion for poisoning to the whole amount is 1 to 18.

On March 6th the conditions were apparently the same—the amount of urine, 2,500 c.c.; of urea, 25 gm.; the specific gravity, 1.010; the toxicity was 16 c.c. per 1,000 gm. of rabbit. Convulsive twitchings began when only 16 c.c. of urine had been injected, and at 30 c.c. a violent convulsion occurred, which proved fatal in twenty seconds. The rabbit weighed 2,250 gm.; $\frac{1}{156}$ part of the total amount of urine secreted by the patient in twenty-four hours was sufficient to poison 1 kgm. of animal tissue.

Fig. 2 (Case X.).

In the next three cases either the toxicity or the urotoxic coefficient of the urine, instead of being diminished, was increased.

Case IX.—Chronic diffuse nephritis. The amount of day urine was 450 c.c., albuminous, with a specific gravity of 1.015. The urea was not diminished, *i.e.*, if all the nitrogen expressed urea, the quantity per cubic centimetre, being 0.027, would correspond to 12.15 gm. in the day urine alone. But of this urine 14.4 c.c. sufficed to poison a kilogram of rabbit. It is probable that this high toxicity was due to the diminution in quantity of the urine and consequent concentration of its toxic qualities.

Case X.—Chronic parenchymatous nephritis in a patient weighing 82.5 kgm., and taking 0.004 of bichloride of mercury three times a day. The total amount of urine excreted was 2,040 c.c.; of urea, 26.52 gm. When only 5 c.c. of urine had been injected into the jugular vein of a large rabbit, convulsions ensued—that is to say, after an exceptionally small quantity. The pupil dilated before contracting; myosis set in only after the injection of 66 c.c. Fifty-two cubic centimetres of urine per kilogram sufficed to kill the rabbit, which is an amount within the normal limits, and would seem to imply that the minute quantity of corrosive sublimate ingested had had no toxic influence. But the urotoxic coefficient was slightly increased, being 0.475 instead of 0.464 (see cut).

Case XI.—Nephritis, two months' standing. Urine, 2,600 gm. Specific gravity, 1.007. Albumin, casts; nitrogen, 0.005; urea, 13 gm. The rabbit's respiration was markedly slowed almost immediately after the injection, but the pupil did not contract at all. The urinary toxicity was represented by 50.98 c.c. per kilogram, which in itself would be normal. But comparison with the total amount of urine and the body weight of the patient yielded a urotoxic coefficient of 0.722, showing an enormous increase in the amount of toxic material elaborated by this patient's organism and eliminated in consequence of the polyuria. This fact is especially interesting in view of the small excretion of nitrogen and urea. The toxicity of the urine and its urea bore no proportion to each other, and the moderate percentage of toxic material in the urine was overcompensated by the excessive amount of urine.[1]

It seems probable that the deficiency of urea was due to an extensive destruction of the renal epithelium, and that effete matter which failed to be eliminated as urea accumulated in the organism in more toxic forms. This accumulation may be considered as the probable cause of the diuresis, since a parenchymatous nephritis of two months' duration is not likely to be associated with such local rise of arterial tension in the kidney as occurs in chronic interstitial nephritis on account of the destruction of many Malpighian bodies.

The conditions were in instructive contrast with those of the chronic interstitial nephritis of Case V. Here the prolonged disease had so depressed nutritive metabolisms that little toxic material was elaborated in the organism; the urine was scarcely more toxic than water, and the urotoxic coefficient was half the normal.

In Case X. the destruction of the eliminating apparatus had been effected with relative rapidity while nutritive metabolisms were active, and toxic material abundantly accumulated in the organism.

Case XII.—Chronic pyelitis of the right kidney of many years' standing, habitually attended with few subjective symptoms, though the urine was loaded with pus. Total amount, 760 c.c. Toxicity, 82.60 c.c.—thus decidedly diminished. The pus was filtered off before the rabbit injection was made. The urotoxic coefficient was 0.105, thus markedly diminished. In this experiment the respiration of the rabbit became accelerated, instead of slackened as usual. There was no convulsion until 57 c.c. had been injected, and no myosis till just before death.

Eight days later, immediately after the patient had suffered a severe attack of renal colic, and when she was on a milk diet and taking lithiated hydrangea, the urine was examined again. An abundance of pus was found in the urine; total amount of urine, 1,315 c.c.; toxicity, 100.4 per 1,000 gm. of rabbit; urotoxic coefficient, 0.148. Thus this, as well as the toxicity, was markedly diminished. The toxicity of the urine was almost the same as that of Case V. with incipient nephritis, in which the patient was also on milk diet, and passed in consequence a large amount of urine (1,440 c.c.).

[1] Seventy-eight c.c. of urine killed a rabbit weighing 1,530 grams. Thus: 1,530 : 78 :: 1,000 : x = 50.92, the amount of urine required to kill 1,000 grams. 2,600 c.c., passed in twenty-four hours, would kill as many kilograms of rabbit as 50.92 could be contained in 2,600 = 51, or 51,000 grams. As this amount was elaborated by a man weighing 66 kilograms, 1 kilogram of his body would kill $\frac{51000}{66}$ = 0.772 kilogram, the urotoxic coefficient.

It is noticeable that although the percentage of toxicity was lower in the second than in the first experiment with the same patient, the urotoxic coefficient was higher. Toxic elimination was actually increased, but the increased diuresis reduced the percentage of urinary toxicity.

A milk diet, by cutting off the important source of urinary toxins contained in meat, is expected to diminish the toxicity of the urine, not only relatively but absolutely. But if the urotoxic coefficient be higher, we must infer either that on the milk diet nutritive metabolisms had been increased and a greater quantity of toxins elaborated in the organism, which compensated for the privation of meat toxins; or that elimination had been increased, the tissues more thoroughly washed out, the result being expressed in the larger quantity of urine secreted.

This patient, in the intervals of acute exacerbations of her chronic pyelitis, considered herself quite well. The first of the above observations was made five days after a severe attack of acute renal colic; the second, three days later and at the beginning of an illness prolonged several weeks, and attended with such tumefaction in the region of the affected kidney as indicated a perinephritis. The diminished toxin elimination coincided with a period of acute renal inadequacy grafted on the chronic disease which lay outside the secreting apparatus. No opportunity was afforded to examine the urine at a time when the patient was free from subjective symptoms. Three years from date, and after a prolonged residence in Bermuda, she claims to be in good health, though the pyuria persists as before.

Case XIII.—Symptoms indefinite. Square-topped sphygmographic trace of lithæmia, with a maximum developed under pressure of 9 oz. Urine (lithia medication), 1,170 c.c. Total urea, 14 gm. No albumin; some broken granular casts; large renal cells; many leucocytes. Specific gravity, 1.015. Urinary toxicity, 64.51, or just below Bouchard's minimum. The patient returned to Texas, and the evolution of her case is not known.

The following cases did not present symptoms of renal disease, but more or less pronounced indications of lithæmia:

Case XIV.—Woman, sixty years old, living on milk and grape diet. Pupil of injected rabbit dilated markedly before myosis set in. Urine fatal at 145 c.c. per kilogram; urotoxic coefficient, 0.231—about half the normal. This may be attributed to the diet, upon which the patient was thriving. A diagnosis of myocarditis had been made three months previously.

Case XV.—Had suffered from muscæ volitantes; otherwise robust. Urine albuminous; urea, 21.90 gm., but urinary toxicity, 84. Myosis was not induced in rabbit till 68 c.c. had been injected.

Case XVI.—Hysteria and lithæmia, frequent headaches. Urine scanty, but not at all high colored; amount only 550 c.c. Nitrogen, 0.009 per cubic centimetre. Urea, 4.95. The urinary toxicity was 62, only slightly diminished—diminution not in any way proportionate to the diminution in the amount of urea. This fact, taken together with the symptoms of auto-intoxication frequently presented by the patient, implies that the same perversion of metabolism (perhaps especially in the liver) which lessened the formation of urea had increased the formation of other toxic excretory material.

The urine of one diabetic patient was examined with peculiar results:

Case XVII.—The woman was enormously stout, weighing 200 lbs. The glycosuria was moderate, had lasted only a short time. The patient suffered from loss of strength and constant thirst, but no bulimia. The amount of urine passed was 2,880 c.c., with 37.44 gm. of urea. Into the jugular vein of a rabbit weighing 1,320 gm. was injected 185 c.c. of urine without causing immediate death; the urinary toxicity being thus less than 140 c.c. per kilogram of animal. Moderate convulsions occurred at the beginning of the injection, but none after 19 c.c., and no myosis occurred till 150 c.c. had been injected. But when the injection was interrupted, signs of pulmonary congestion had appeared, and the animal was found dead the next day. The lungs were intensely congested.

As there was no renal disease, the defect in the urinary toxicity must be attributed to defective elaboration in the normal toxins of the organism, or at least to a defect in their elaboration into such forms as would seek elimination by the kidneys. The normal convulsibility of the urine may have been neutralized by an unusual proportion of narcotic toxins, which did not tend to kill the animal directly, but indirectly through pulmonary congestion.

Case XVIII.—The urine was examined in one case of epilepsy, thirty-six days after one attack and twenty-four days before another. The patient was taking bromide of lithium and chiefly milk diet, and the amount of urine was 1,331 c.c. The injection caused only slight convulsions in the rabbit, but very abundant diuresis. The toxicity of the urine was expressed by 120 c.c. per kilogram—half the normal minimum. The urotoxic coefficient was 0.170. No opportunity was afforded to examine the urine just before or after an attack.

Féré,[1] examining a series of epileptic patients, found that the urine just before the paroxysm gave an excessive urotoxic coefficient in seven out of eight cases. However, in five out of the eight cases the urotoxic coefficient remained excessive also after the paroxysm.[2] In these cases the paroxysms were so frequently repeated that there was no reason to suppose an intermittent accumulation of toxins in the organism as a cause of the attack—rather a condition of chronic hypertoxicity, possibly due to intestinal fermentations, not relieved by the convulsive attacks or coincident with them, but persisting as the attacks recurred.

Deny and Chauppe found, in ten out of thirteen epileptic patients, a moderate diminution of urinary toxicity, represented by 60, 80, 90 c.c. required as fatal doses. But the amount of urine was so much increased, that the urotoxic coefficient did not greatly differ from normal. In another patient, who passed only 750 c.c. of urine, this proved fatal at a dose of 20 c.c. per 1,000 kgm. of rabbit.[3]

Voisin examined the urine of epileptic patients subject to attacks in series. He found that the urine was hypotoxic before and during the series, but that the toxicity rose and exceeded the normal if the series had really terminated, but failed to do so if further attacks were destined to occur. The examination of the urine by this method, therefore, offered important data for the prognosis. When the epileptic patients had become demented, the urine was constantly hypotoxic.

Chambulent[4] showed that the serum of the blood became more and the urine less toxic during a series of epileptic attacks.[5] "When albuminuria coexists," observes Voisin, "the elimination of toxins is slackened, and their accumulation may become as dangerous as in acute infectious diseases. The *état de mal* is established, and the temperature rises."

Lanoine compares epileptic crises to the crisis which marks the decline of an infectious disease.[6] "Auto-

[1] Comptes Rendus Soc. Biol., 1890.
[2] *Ibid.*
[3] *Ibid.*, November 30, 1889.
[4] *Ibid.*, February, 1892.
[5] In 1897 Herter showed the same thing in regard to attacks of puerperal eclampsia. (Trans. N. Y. Acad. Medicine, 1897.)
[6] Gaz. des Hop., 1889.

intoxication is the principal element of the paroxysmal attack, but the auto-intoxication is favored by the condition of the nervous system, which is defective through heredity or acquired deterioration."[1]

A few experiments were made with the urine of women immediately after their confinement, on the supposition that the processes of tissue involution would throw a large amount of detritus into the circulation, whose ultimate products would be eliminated with the urine and thus increase its toxicity. The few experiments made, however, showed that this condition of hypertoxicity was insufficient to counteract the effect of the low diet of the puerperal *régime;* or else that such elimination did not become active before the sixth day. For convenience these facts are thrown together in the following table:

Name.	Day after Confinement.	Urinary Toxicity per Kilogram.	Urotoxic Coefficient
Case I.....	First	100 c.c.	0.037
	Fourth.	160 c.c.	
Case II.....	Third.	92	0.179
Case III.....	Fifth.	96.5	0.238
Case IV. Albumin; casts; urea, 7.29; milk diet.	Second.	86.16	No uræmic symptoms.
	Sixth.	29	
	Seventeenth.	34.01	
Case V. ...	Third.	81	

In the fourth case the rise of toxicity on the sixth day to a little above the normal minimum was all the more noteworthy because the urine was albuminous, a condition habitually associated with hypotoxicity; and because, on account of the albuminuria, the patient had not been restored to the usual mixed diet, but was living exclusively on milk diet.

In three women observed just before confinement, the urine was hypotoxic. Of these the first, the albuminuria patient of the preceding table, was on a milk diet; the others were on ordinary mixed diet.

Case I....	Two days before confinement.	Urinary toxicity, 94 per kilogram.	Two days after, toxicity, 86.16.
Case II....	Three days before confinement.	68	Three days after, toxicity, 92.
Case III....	Fifteen days before confinement.	97.7	

The injection of the last patient's urine into the jugular vein of a female rabbit caused the latter to abort of three young animals nearly at term, of whom two were alive and lived for fifteen hours. Only 30 c.c. of urine had been injected when the abortion occurred.

Abortion is not a necessary consequence of the injection of such a small amount of urine, for after the death of a rabbit killed with a much larger amount five fœtuses have been found in the uterus of the mother. It would seem, therefore, that the abortion in the above case was due to the specific action on the uterine spinal-cord centres of a toxin contained in the urine, and not, as might plausibly be supposed, to a simple mechanical disturbance of the circulation.

The diminished toxicity of the urine during pregnancy, as noted in the above cases, corresponds with the results of Chambulent's observations. In a series of six cases of pregnancy near term, this experimenter found the urotoxic coefficient to range from 0.22 to 0.35—an average of 0.25 (normal, 0.464). To whatever this diminished urinary toxicity be due, we may, from the nine cases (three of them ours, six of them Chambulent's), infer that it is the normal condition, and a deviation from it to imply something abnormal, hence possible danger.

In two other cases of women observed just before confinement, the urinary toxicity was not diminished, but remained within the limits normal to the non-pregnant state. This fact was all the more significant, because at a previous confinement one of these women had suffered from convulsions, and during this pregnancy had a slight albuminuria.

Case I.....	Daily expecting confinement.	Urinary toxicity, 56 per 1,000.	Amount of urine, 1,040 c.c.
Case II. Had convulsions at previous confinement; at present has albuminuria.	Daily expecting confinement.	29	576 c.c.

A larger number of observations on puerperal urine is a great desideratum, in order to ascertain whether at this time and for any reason the usual law is reversed, so that while the diminution of toxicity is an alarming circumstance in nephritis, it should be the normal condition at the close of pregnancy. May it imply that general tissue metabolisms are slackened in intensity during the concentration of nutritive energy upon the spinal centres about to enter upon the tremendous effort of parturition? If defective elimination were the cause, puerperal accidents due to an accumulation of toxins in the body might be expected to occur far more frequently than they do. Therefore it would seem more probable that at this time a smaller amount of toxic substance is elaborated, thus lessening the strain to which the organism is to be exposed during the accumulation of detritus after the confinement. At this time the urinary toxicity should normally be expected to rise. We have had as yet no opportunity to examine the urine earlier in pregnancy.

Our observations in cases of renal diseases tend entirely to confirm the dicta of Teissier: "The toxicity of the urine offers signs of the greatest importance for the prognosis of albuminuria. The toxicity varies inversely with the aggravation or amelioration of the disease. The urinary toxicity may vary from day to day. A large amount of albumin in the urine is important only if the renal elimination be incomplete. A urine containing only a small quantity of albumin may nevertheless indicate very serious disease if the renal elimination be insufficient; thus in interstitial nephritis, where Professor Bouchard has shown that the toxicity of the urine is always diminished. In some cases the urotoxic coefficient falls to 0.193, 0.146, 0.123 [see our Cases II., IV., V., VI.]. Albuminuria in kidney disease becomes a symptom of second rank."

Teissier cites two cases where in apparently grave disease, he gave a favorable prognosis based on the normal or even excessive toxicity of the urine, and in both cases the prognosis was justified by the result. The first was an albuminuria with colloid casts in the urine, but with a urotoxic coefficient of 0.490 (normal, 0.464). It was subsequently discovered that the albuminuria was due to a renal calculus.

In the second case there were a rheumatic nephritis and a *bruit de galop* at the heart, with frequent syncope. But the toxic coefficient of the urine was 0.664, indicating that the kidneys were doing their full duty; and the patient recovered so completely as to be accepted in the army.

In the case of pyelitis (Case XII.) the low urinary toxicity and urotoxic coefficient seemed to indicate an extension of disease from the pelvis to the parenchyma of the kidney. Yet it is possible that the renal inadequacy was functional and independent of any serious anatomical lesion, for not only did the patient

[1] Voisin, l. c. Herter's experiments in auto-intoxication in epilepsy were centred on the estimate of ptomains in the urine, as shown by its content in ethereal sulphates. N. Y. Medical Journal, 1889.

entirely recover, remaining in fair (subjective) good health three years later, but she had recovered from similar attacks at least half a dozen times in the course of eight or ten years, no symptom remaining between the attacks but the pyuria. Of the two experiments made in this case, the first preceded, the second followed a severe attack of renal colic. On the first occasion the patient was taking an ordinary mixed diet; on the second, was living exclusively on healthy persons, noticed that an exclusively milk diet, to the amount of three or four litres a day, markedly increased the toxicity of the urine; and observes that "the primary cause of urinary toxicity must be sought in the phenomena of intimate molecular nutrition"—thus not, as Bouchard would have it, primarily in the diet or in absorption from the intestine.

In Case V. diminution in the urinary toxicity was the first positive indication of renal disease, which

No.	Nature of Case.	Amount and Character of Urine.	Weight of Rabbit.	Amount of Urine Injected.	Amount in c.c. per 1,000 gms. of Rabbit.	Weight of Patient.	Urotoxic Coefficient.	Remarks.
1	Chronic parenchymatous nephritis.	585 c.c. (day); albuminous.	2,450 gm.	205 c.c.	83.67 c.c.	.....	.....	Myosis after 10 c.c.; exophthalmos after 110 c.c.; no convulsion until immediately before death.
2	Incipient nephritis.	Slight trace of albumin; urine dark, scanty; amount=760 c.c.; urea = 23.56 gm.	1,000 "	93 c.c.	93 c.c.	70 kgm.	0.116	
3	Parenchymatous nephritis.	Much albumin; night urine = 475 c.c.	1,860 "	164 c.c.	88 c.c.	.....	.....	Respiration accelerated to 102, then retarded to 72. One slight convulsion at 25 c.c.; seven serious.
4	Chronic nephritis.	Moderate albumin; granular casts; amount = 1,400 c.c.	1,742 "	109 c.c.	62 c.c.	75 kgm.	0.301	Myosis began at 30 c.c.; myosis to pin point at 142.
5	Advanced chronic interstitial nephritis.	Trace of albumin; amount = 2,153 c.c.; total urea = 8.845 gm.; specific gravity, 1.005.	1,560 "	345 c.c. (day urine); 2.88 gm. urea in day urine.	221 c.c.	55 kgm.; patient much emaciated.	....	No convulsions till 120 c.c., then very slight.
Idem.	Advanced chronic interstitial nephritis.	Trace of albumin; amount = 2,153 c.c.; total urea = 8,845 gms.; specific gravity, 1.005.	1,560 "	208 c.c. (night urine); 5.965 gm. urea in night urine.	174 c.c.	.....	(Calculated from average of day and night urine) 0.287	First convulsion at 155 c.c.; myosis marked at 95 c.c.
6	Incipient nephritis; milk diet.	1,440 c.c.; urea = 34.56 gm.	1,150 "	120 c.c.	104.34 c.c. = $\frac{1}{12}$ of amount.			
Idem.	After a week of mixed diet.	810 c.c.; urea = 17.82 gm.	1,740 "	170 c.c.	97.7 c.c. = $\frac{1}{2}$ of amount.	....	.....	Myosis at 10 c.c.; exophthalmos just before death.
Idem.	After two weeks mixed diet; patient feeling very badly.	705 c.c.; urea = 14.875 gm. (day urine).	1,180 "	45 c.c.	38.13 c.c. = $\frac{1}{26}$ of amount.			
Idem; 2 years later.	Pregnancy 2 weeks.	1,283 c.c.; urea = 27.72 gm. or 13,471, when leucomains precipitate; no albumin.	892 "	50 c.c.	73 c.c.	60 kgm.	0.25	Transient uræmic symptoms twice during pregnancy; in last 6 weeks albuminuria and granular casts; child born cyanosed; imperfect respiration for 6 hours; death; placenta markedly atrophied and sclerotic.
7	Diffuse nephritis; no medicines.	830 c.c.; very albuminous.						
Idem.	.....	Day urine = 830 c.c.; urea = 7,885 gm.	2,120 "	24 c.c.	11.32 c.c.	.....	.....	No myosis until final tetanus; no exophthalmos.
Idem; next 24 hours.	.....	Night urine = 415 c.c.; urea = 6,225 gm.	2,300 "	147 c.c.	63.91 c.c.	....	....	Slight myosis; great turgescence and dilatation of vulva.
8	Nephritis, 7 years; neuroretinitis; milk diet; strophanthus.	Amount = 2,500 c.c.; much albumin; granular casts.	2,250 "	305 c.c.	135 c.c.	.....	.....	Rabbit's urine showed trace of albumin.
Idem; 2 days earlier.	Nephritis 7 years; neuroretinitis; milk diet; strophanthus.	Amount = 2,500 c.c.; much albumin; granular casts.	1,800 "	30 c.c.	16⅔ c.c.	.....	....	Could discover no reason for this enormous exaggeration of toxicity, especially as the amount of urine was the same, and the medicine unchanged.
9	Chronic diffuse nephritis.	Day urine = 450 c.c.; albuminous; specific gravity, 1.015; urea = 12.15.	1,180 "	17 c.c.	14 c.c.			
10	Chronic parenchymatous nephritis; 0.004 bichloride mercury ter in die.	2,040 c.c.; urea = 26.52 gm.	2,090 "	110 c.c.	52 c.c.	82.5 kgm.	0.475	Convulsions began after only 5 c.c had been injected.
11	Nephritis 2 months' duration.	2,600 gm.; specific gravity, 1.007; albuminous casts; urea = 13 gms.	1,530 "	78 c.c.	50.98 c.c.	66 "	0.772	No myosis.
12	Chronic pyelitis of right kidney.	760 c.c. loaded with pus; filtrate from this used for injection; urea = 7.98 gm. (filtrate from leucomains).	1,150 "	95 c.c.	82.60 c.c.	88 "	0.105	Respiration accelerated instead of slowed.
Idem 8 days later.	Immediately after severe renal colic; milk diet and lithiated hydrangea.	1,315 c.c.; filtrate used; urea as estimated in supernatant fluid after precipitating leucomains = 32.50 gm.	1,742 "	175 c.c.	100.4 c.c.	88 "	0.148	

milk, and taking, in addition, lithiated hydrangea. Under these circumstances the quantity of urine was considerably increased, and the urinary toxicity considerably diminished—from 95 (already abnormally low) to 175. Nevertheless, the urotoxic coefficient rose from 0.105 to 0.148, and the proportion of urine required for a fatal dose, which was as much as one-eighth before the acute attack, fell after the attack to one-thirteenth of the whole amount passed in twenty-four hours. The concentrated urine before the attack was thus really less toxic than the dilute urine which followed; and although meat is held by Bouchard to constitute a principal source of urinary toxins, yet in this patient the urine from the meat diet was proportionately less toxic than that from the diet of milk. Lapicque, experimenting on two

became fully developed later. Discovery of this latent disease was all the more important, because it seemed to help to explain the accidents of five successive pregnancies, which were either terminated prematurely or resulted in the birth of non-viable children. There remained a mystery, however, for in the sixth pregnancy granular casts were present in the urine, and abundant albuminuria developed during the last six weeks; yet a healthy child was born at term, and five months later was still living and thriving. The acute pyelitis which developed a month after delivery suggested the possibility that the albuminuria which had previously existed, but only at long intervals and in the last month or two of successive pregnancies, had really been due to a catarrhal pyelitis, and not to parenchymatous disease; while the

other symptoms—diminished urinary toxicity, secondary[1] indigestion, transient uræmic aphasia and paralysis, chorion dropsy, and atrophy of the placenta—would be attributable to a more insidious interstitial lesion, which for a long time spared the secreting epithelium and the Malpighian tufts, and caused no albuminuria.

Sufficient comment has already been made upon the single case of epilepsy submitted to experiment.

The single experiment in diabetes gave remarkable results, and such as I have not seen elsewhere recorded.

UNEXPECTED FORMS OF DEATH AMONG THE INSANE.

By E. M. SOMERS, M.D.,

ASSISTANT PHYSICIAN, ST. LAWRENCE STATE HOSPITAL, OGDENSBURG, N. Y.

In every hospital for the insane a certain percentage of deaths will occur without any warning, save those symptoms which are intimately associated with the moribund state; and such occurrences set one to thinking whether some signs or symptoms ought not to have been observed during the usual condition of the patient to put the physician on his guard, although knowing that no essential treatment would have more than modified or delayed the occurrence. Again, one congratulates himself that such deaths did not happen while the patients were under some vigorous treatment, medical or surgical, or during the course of forced feeding or surgical restraint.

Of the many causes of sudden deaths among the insane, cerebral apoplexy and embolism are not uncommon, and these seldom present symptoms or lesions so remarkable as to need reporting. Ruptures of the heart, larger arteries, and liver are much less often found, and therefore make more striking impressions. Still, there are now and then cases showing but a scanty array of symptoms. The patients suddenly sink to the floor, with face intensely congested, and very rapidly pass into a fatal coma; or, partially arousing, become restless for a time, and expire in a few hours. During life such cases, which are essentially senile, show mentally the ordinary symptoms of dementia, and physically increasing feebleness of health. The heart action is generally feeble, the arteries are much sclerosed, the urine always contains albumin, and mild uræmic attacks are common. At the necropsy we find the ordinary signs of arterio-sclerosis and cirrhotic kidneys. The heart is possibly soft and its muscular fibres are flabby and easily lacerated; or, conversely, the muscle may be quite firm, and upon close inspection we may be able to observe the striations cloudy and indistinct, the aortic intima containing atheromatous and calcareous patches, most plentiful about the coronary ring, while the brain seems macroscopically unchanged save for some general softening.

A case in detail may illustrate the above description.

Case I.—Male, aged forty-four years, German, farmer; alleged habits temperate; duration of attack previous to admission, four years; diagnosis, terminal dementia. His history is that of an ordinary case of maniacal excitement before admission, followed by dulness and confusion, neglect of person, etc. During the patient's life in the institution (nearly five years) he showed very early the evidences and facies of a dement, occasionally having outbreaks of loud talking with motor restlessness, and seldom making assaults. Soon his physical state showed beginning enfeeblement as evinced by poor nutrition, increasingly feeble gait, and dyspnœa upon exertion; the urine from time to time showed albumin and casts. It might be well to state that the physical examination upon admission showed no organic changes. During the last month of the patient's life all the symptoms of enfeeblement, both of mind and body, were intensified. His periods of usual disturbance would tire him very noticeably, and he would perspire profusely even when not especially exercising. On April 15, 1897, he showed no unusual symptoms other than those above described, except a tendency to restlessness. While walking along the floor he suddenly sank with face intensely congested, remained in this comatose condition only a few minutes, and expired. The necropsy showed the brain substance to be slightly softened, nothing further. The cerebral arteries were sclerosed, the cerebro-spinal canal and ventricles were filled with clear fluid. The heart was contracted, the left ventricle hypertrophied, the muscular tissue pale and showing fine granular striæ throughout its stroma, but its substance was of fairly good consistence. The aortic intima and valves were crusted with patches of atheroma and lime. Liver nutmeg; kidneys large and tough; capsules non-adherent; surface of kidneys nodular; cortex atrophied; markings indistinct.

Case II.—Female, aged sixty-three years, Irish; habits said to be good; by occupation a domestic. She presented essentially the same mental symptoms as the patient in Case I. On admission she was in poorer physical health, however, and gradually became more and more enfeebled. Occasionally the patient would remain in bed for a few days. Frequent examination of the urine always revealed casts and albumin, and during her latter days œdema of the feet and muscular weakness were noted. January 13, 1897, the patient was observed to have slight spasms of the right arm and leg with dilatation of the right pupil. The attending physician was called and found the arm in marked spasmodic movements, though of a feeble character. The right pupil was widely dilated, the left apparently normal; the jaw was dropped and the tongue apparently paralyzed. From the above condition she passed into one of stupor with right hemiplegia, and a few hours later expired; but for a short time previous to death she was feebly restless. The autopsy showed the following important conditions: calvaria thin, porous, and difficult to remove, due to quite firm adhesion of the dura, especially along the posterior convexity. The sinuses were engorged, the pia was much injected, and a large quantity of cerebro-spinal fluid was collected; the brain substance was of good consistency. The cerebral arteries, especially at the base, were very much degenerated, containing calcareous plates and surrounded by yellowish patches. The ventricles were distended with fluid. Careful sections of the entire brain substance showed to the eye no sites of hemorrhage or of softening. Heart in diastole; considerable deposits of fat about the base of the ventricles; myocardium soft, easily macerated, and of cloudy appearance; valves thickened, indurated, and contracted. Liver small, dark-colored, nodular, and its substance in appearance "nutmeg." Kidneys typical of advanced interstitial nephritis.

Both of these subjects were uræmic, and the cause of death could safely be attributed to nephritis. The mode of death, however, was unusual and in an unexpected form, as neither had had coma before, or any of the severe symptoms of uræmia. Pepper[1] says: "Hemiplegia, with or without aphasia, may be the first symptom to call attention to a nephritis. . . . There is loss of motion alone, or of both motion and sensation." Case II. had hemiplegia with aphasia. Sensation in the paralyzed parts before stupor supervened was indefinite, owing to the patient's confused mental

[1] As distinguished from indigestion in the *prime* [illegible]

[1] "American Text-Book of Theory and Practice," vol. ii., p. 653.

state. Further he says: "These attacks have been ascribed to localized œdema of the brain." And: "In cases that I have seen there were no changes in the brain tissue, but the cerebral arteries were damaged by chronic endarteritis." The brain in this case was waterlogged, but no one locality seemed more especially œdematous and no hemorrhagic foci were revealed. Nevertheless, there were abundant evidences of advanced cerebral endarteritis, and the perivascular spaces were prominent throughout the entire brain substance. On the following page he says: "Persons apparently in good health are attacked without warning by convulsions, coma, delirium, or hemiplegia. . . . They may die in the first attack or live to go through subsequent ones." Case I. seemed to be of the comatose type, which rapidly became fatal. The brain was less waterlogged than in Case II., but had nearly as much arterial degeneration. The myocardium showed neither fibroid nor fatty changes to the eye, and the coronary sinuses were freely open. At no time in his history were there attacks indicating a possible angina pectoris and his last symptoms were of an apoplectiform character. Examination of the urine shortly after death showed the presence of the usual amount of albumin. Although the symptoms and evidences do not so strongly point to a fatal angina, yet the symptomatology in a dement must obviously be obscure, and in this case the cause of death be necessarily an open one.

Rupture of the heart has been the cause of death in less than two per cent. of cases at this institution. Occasionally one will read of this occurrence among the insane. Dr. Mickle, in the February number of the *Edinburgh Medical Journal* for 1884, reported three ruptured hearts. Dr. Pilgrim, in the *Journal of Insanity* for January, 1895, mentioned one similar case. Another was presented by Dr. Tompkins, in the *British Medical Journal* for May, 1885. Three out of these five ruptures were in cases diagnosed as melancholia; another was a case of senility with marked states of depression. The remaining one was terminal dementia due to chronic alcoholism. In four of these the site of rupture was in the body of the left ventricle. The fifth case, however, had the rupture in the right ventricle. Again, in three out of the series death occurred rather slowly. There are two other cases which the writer desires to add to the list:

Case I.—Female, aged eighty-one years, widowed, native born; habits good; occupation, domestic. Diagnosis, senile melancholia. Cause, epidemic influenza. Before admission she was depressed to a mild degree, neglected to care for herself, and became very hypochondriacal. During the fifteen months the patient was here she presented no interesting mental symptoms other than those commonly found in a large majority of senile melancholiacs. Her physical condition upon entry was feeble; pulse very fibrous: heart action fairly good and without murmurs. Lungs normal. Urine showed no albumin or casts. General enfeeblement kept her in bed frequently while here, but her usual condition immediately before her death seemed to be in no wise more decrepit. The circumstances pertaining to her death were simply that the night nurse found her in a condition of collapse about 4 A.M. The pulse was feeble; she breathed gaspingly, and soon life was extinct. Autopsy showed the following interesting facts: The brain was not structurally changed, though the basal arteries were markedly atheromatous. There were a number of foci of softening in the basal ganglia, some being as large as a pin's head. Lungs slightly œdematous. Liver softened and showing granulo-fatty changes. Kidneys of the moderately cirrhotic type. Heart in partial systole; myocardium firm; pericardium contained about one ounce of bloody serum. On the anterior surface of the left ventricle was noted a purplish extravasation running lengthwise of the organ for about two inches, giving to the touch a feeling of hardness surrounded by a dissolution of continuity. At the apex, involving the muscular substances of both ventricles and intermuscular septum, was an area of very friable muscular tissue mingled with clotted blood. The muscular fibres were ruptured and separated in the centre of the degenerated spot, yet the visceral pericardium was intact, so that there was no actual external communication. At one site under the injected area on the anterior surface of the left ventricle was a thick coagulum looking like muscle detritus, mingled with a thrombus, and through the centre of this mass the walls were attenuated to a layer of tough connective tissue, enclosing this purplish softened tissue, and the whole was held in place by the endopericardium. Attempts to reach the site by a probe in the coronary artery failed. The cardiac valves were thickened but apparently competent. Plaques of thickening were noted in the aortic arch. The kidneys were contracted and cystic to a mild degree.

Case II.—Female, aged seventy years, Canadian; domestic; a morphine habitué. Her tendencies before admission were suicidal, she having jumped from a second-story window. Duration of attack, several years; cause unknown. Diagnosis, dementia (senile). The accompanying history stated in substance that the patient thought the pain which had been constantly in her stomach for seventeen years was due to "a nest of cats" therein, and that she jumped from the second-story window "because the devil was in her." She was loud in her demand for arsenic, that she might quiet the pain or do away with herself. On admission the patient was emotional, agitated, and depressed, repeating constantly, "Give me arsenic." The physical condition was feeble, with indistinct heart sounds, though no murmurs could be detected. After the patient had been at the hospital a few weeks she was daily given a dose of morphine for its possible mental effect, but the rest was temporary. During her life here the patient was entirely absorbed in the one idea that animals, "cats," "little pigs," etc., were "gnawing" her stomach, and she was almost hourly pleading to be cut open so that the animals could be removed, or to be killed and freed from pain. Repeated physical examinations were made with unsatisfactory results, as she kept the muscles over the epigastrium rigid. Although her appetite was poor, she accepted a varied diet and showed no symptoms pointing to any organic changes of heart, stomach, or liver. There was a continued failure of physical strength, the last few months the patient remaining in bed much of the time. One morning while walking along the floor she suddenly fell unconscious, and quickly expired without further symptoms. The post-mortem evidences of importance were as follows: Heart relaxed; pericardium filled with about one and a half pounds of blood clot; myocardium very soft and of a cloudy appearance. At the left ventricular apex a small rent was detected in the muscle wall externally, communicating with a cavity. The muscular tissue about the rupture was blood-stained and very much softened. Nothing in other viscera was of interest beyond the evidences of common senile changes.

The two cases just detailed resemble in two points the five cases summarized: 1st, they were senile; and, 2d, mentally depressed—the sites of rupture differing, however, in that they were both apical.

Anæmic necrosis, a term used to indicate localized degenerative changes taking place in the myocardium as the frequent result of an obliterative endarteritis of the coronary branches, seems to have been well pointed out in Case I. The patch on the anterior ventricular surface, evidently of long standing, showed

its centre to be quite sclerotic. The ruptured site at the cardiac tip was an acute aneurism.

In Case II. the heart muscle in general was much more softened, and it would be difficult to attribute this apical rupture to a myomalacia cordis, at which site it is reported as most frequently occurring, in preference to the possible fact of this spot being simply the more advanced in the grand fatty decay. The more interesting feature of Case II. is the very well-defined illustration of "coanæsthetic illusions" of Regis,[1] who says: "There is a special class of illusions which cannot be properly referred to any of the special senses, and which are known by the name of internal or coanæsthetic illusions. . . . They consist in false interpretations of actual organic sensations. . . . Thus very frequently affections of the intestines, the stomach, or the uterus, induce in the patients, by the reaction they cause, ideas that they have animals in their bellies, that they have been violated, etc. . . . These internal illusions are especially frequent in the so-called sympathetic insanities." The reflex action of an organic heart disease was referred to the epigastrium (probably in the form of an intense neuralgia), and the ideas held by this patient that animals, "mice," "cats," etc., were "gnawing," were truly typical of a symptomatic or cardiac insanity.

The last case to be reported is one of a traumatic rupture of the liver. Male, Prussian, aged fifty-one years, single, baker. Habits intemperate; duration of insanity, ten or twelve years. Diagnosis, terminal dementia. His mental history is uninteresting, as it is characterized throughout by the classical symptoms of early involution. His physical state, which was fairly robust till about three years ago, gradually became more and more frail until he presented the anæmic and drawn features of one possibly suffering from chronic pulmonary tuberculosis. The man's gait, which was always feeble, was much hampered, owing to the fact that his left foot had been amputated. On March 10, 1897, while walking along with a number of other patients, he was suddenly pushed with considerable force against the wall by another patient. Shortly after he sank to the floor in a condition of collapse, and soon life was extinct. The necropsy, which was performed in the presence of the coroner, gave the following data: Calvaria unusually dense and heavy; brain well formed and presenting no gross changes. Heart relaxed; myocardium firm; valves slightly thickened. Lungs partially collapsed and anæmic. When the abdomen was opened, about four pounds of free blood was found in the peritoneal cavity, and the source of the blood was discovered to be a rent in the liver substance. The site of rupture was about the central part of the right lobe on its antero-superior surface. The tear was four inches long by two and a half inches in depth, with ragged edges, and running in an antero-posterior direction. The liver substance was in a state of marked granulo-fatty degeneration, and but little effort was necessary to tear or break down any part of the putty-like organ. The site about the rupture was not more degenerated than usual. The seventh and eighth costal cartilages were fractured opposite the liver lesion, and a moderate bloody extravasation in the cellular tissue covering these cartilages was detected. No skin evidences of injury were apparent.

The general opinion in this case seemed to be that the patient was crowded and squeezed against some firm object, so that a sufficient amount of pressure was exerted to cause a rupture of the already diseased gland.

To Prevent Nausea after Chloroform.—Pour vinegar upon the mask after the operation and let the patient inhale as he is coming to.

[1] Regis. "Practical Manual of Mental Medicine."

THE RELATION OF SEX TO MENTALITY.

By CHARLES A. WHITE, M.D.,

Much has been written, especially by German authors, concerning the relation of sex to mentality from the standpoints of psychology, criminology, and social science, but it is my purpose only to remark briefly upon that relation with reference to the sequelæ of surgical operations upon the sexual organs, especially those of ovariotomy. The literature of those sequelæ is extensive, but it is all, or nearly all, confined to the physical and pathological conditions which result more or less directly from the operation. That is, judging from the literature referred to, the possible effects of ovariotomy upon the mentality of the patient has rarely been taken into consideration by the operating surgeon. This assumed fact has lately been called to my attention in a somewhat forcible manner.

A daughter each of three friends of mine has been made the subject of ovariotomy, each by a different surgeon, neither of whom was cognizant of the other cases. One case was that of a woman, aged thirty-eight years, the mother of three children; another that of an unmarried woman, aged thirty-nine years, and the third that of a girl of eleven years. All three of the operations were successful, as such. The two women are living in good physical health and unimpaired mentality. The girl died after complete recovery from the operation, but before reaching the usual age for the establishment of the menses.

In each of these cases the father unsuccessfully solicited from the surgeon some prognosis of the probable effect of the operation upon the mentality of the patient. Being men of broad information, they fully comprehended the general character of the operation and were also well aware of the reputed psychological effect of castration upon the human subject. They therefore naturally inferred, or feared, that a similar result might follow the removal of the ovaries. The necessity for the operation seemed to be imperative, and they consented without further questioning.

After the operation in each case had been performed and recovery from its immediate effects practically assured, the father of each patient conferred with me, not professionally but as an intimate friend, upon the question they had respectively raised with the surgeons. I could not reply from any actual experience of my own in surgery, nor could I refer them to any literature bearing directly upon the question, for I had vainly sought for it in the great library of the United States Army Medical Museum. I had, however, given some attention to related subjects, and the following remarks embrace the substance of my replies to their inquiries. They are based largely upon the proposition that sex and a certain phase of mentality or of psychological manifestation are intimately correlated in their development.

While the greater part of the sum total of human mentality is developed in like manner and is of similar quality in both sexes, it is too obvious to need more than passing mention that certain prominent mental characteristics are peculiar to each. It is also just as obvious that differences of mental habit, and one might almost say of instinct, exist between the two sexes in childhood, and that those differences are strongly marked before the age of puberty. At that age the differences quickly merge into the peculiar psychological attributes of manhood and womanhood respectively. Those attributes being due to sex, it necessarily follows that if the ovaries or testes, the primary organs of sex, should not be potentially developed, or if they are removed before the full establishment of manhood or womanhood, as the case may be, the development of those psychological character-

istics which distinguish the sexes respectively will be thereby arrested. Thus, as is shown by the published records of eunuchism, if a boy be castrated in childhood, although his body and a large degree of general intellect are subsequently developed, certain features of his mentality remain deficient. That is, he is characterized throughout his whole life by an unmistakable puerility of thought, effeminacy of habit, and a lack of manly responsibility of conduct.

The absence of an actuating motive for and the difficulty of the operation of ovariotomy, as compared with that of castration, has doubtless prevented the barbarism of man from mutilating woman as he has done his fellow-man, and therefore ovariotomy in childhood is unknown except as a remedial operation. Furthermore, such diseases of the ovaries as require their removal rarely occur before the age of puberty, and consequently only a few cases of ovariotomy before that age are known to surgery. Some, however, are known, and from its analogy to castration one cannot doubt that in all such cases certain girlish or immature mental characteristics will remain throughout life. The changes which take place as a result of early castration present the strong contrast with the natural male condition which exists between virility and effeminacy, but because of the more delicate nature of woman it is not to be expected that so great a contrast will be the result of ovariotomy. Certainly no converse tendency toward mannishness is to be expected. Still, it is reasonable to expect that the psychological deficiencies produced by ovariotomy upon an immature patient may be so strongly marked as to be a source of grief and disappointment to her friends. In these cases at least it is within the province of the surgeon to inform the friends of the patient as to the mental as well as the physical condition in which she will probably be left when the wounds are healed which his knife has made.

Modern surgery has made ovariotomy, in competent hands, one of the safest of the capital operations, and recovered subjects of that operation are therefore somewhat numerous. And yet, as already mentioned, no satisfactory records of their mental sequelæ seem to have been published. This deficiency of record is doubtless due, not to remissness on the part of surgeons, but to the extreme difficulty of obtaining accurate information of this kind. The sequelæ referred to are manifested, if at all, after the case has passed out of the surgeon's hands and, for obvious reasons, the friends of the patient do not willingly make them public. Therefore the doctrine of probabilities must enter largely into any prognosis of such sequelæ, and it legitimately suggests the following statements, as it has some of those made in preceding paragraphs:

While it may be expected that the full establishment of the attributes of womanhood will secure the subject of ovariotomy from adverse mental effects, it is possible that if the operation be performed in the first years of her potentially fertile period there may result some degree of impairment of the sexual phase of her mentality, because it requires a few years after the appearance of the menses fully to establish the mental habit of womanhood. It is believed, however, that if such a result should occur it would be too slight to be observed by any but her most intimate friends. In all the cases here suggested it is assumed that both ovaries are removed, for the removal of one ovary does nor necessarily prevent subsequent fertility.

After the middle or later part of the period of potential fertility no degree of mental impairment is to be reasonably expected as a result of ovariotomy. In all such cases the surgeon's knife transfers the patient to that respected condition of non-fertility which is the natural heritage of every woman who reaches her later sexual climacteric and she is transferred to that condition only a little in advance of the time when she would naturally have entered it. That is, the mental condition is no more changed in the one case than in the other, and, save for the loss of a little diseased and therefore worthless tissue, the physical condition of the recovered patient is the same as is that of the woman who becomes infertile by the natural process.

In support of my proposition that certain childish characteristics are likely to remain with those who have been deprived of the essential element of sex in childhood, as well as with those in whom it may have never been developed, I gave the three friends referred to the following illustration drawn from my experience with mule packtrains in Western exploration. The low grade of these animals, as compared with man, does not make the illustration inapt, because it is only a small part of that great aggregate of human mentality which distinguishes man from those animals that is specially affected by sex. Therefore the contrast in this illustration is not so great as it might appear to be.

Mules are more serviceable for packing than are any other animals, but they cannot be managed alone with full success. Therefore a horse, much preferably a female, is always provided to lead them. She wears a small bell and is called the bell mare. The train marches single file, and at the first start it is the settled ambition of every mule in it to march next the bell mare. A contest takes place with much kicking and biting, the strongest or most persistent one secures the place, and the others gradually fall into line. After the first or second day out every mule knows its place in the train and keeps it without further trouble.

Upon those marches the animals subsist wholly upon the grasses which grow along the route. When they are turned loose to graze, it is only necessary to picket the bell mare, for the mules will all graze around and never lose sight of her. A thief needs to get away only with the bell mare and all the mules will follow. A case once occurred in which the bell mare broke her picket rope on a stormy night and wandered off, followed by all the mules. She fell, broke a leg, and perished in the storm. When found by the party several days afterward, the dead mare was surrounded by all the mules, and they were dying of hunger when, by wandering only a short distance away, they might have found plenty of food. All these, and others which might be mentioned, are obviously coltish traits.

Mules are infertile because ovules are not matured in the ovaries of the females, nor spermatozoa in the testes of the males. That is, there is no complete development of the essential element of sex in either case and consequently no correlation of that element with their psychological development. Therefore, psychologically, the mule remains a colt all its life, although in physical strength and general intelligence it is the equal and often the superior of either parent.

Smithsonian Institution, October 2, 1897.

Deformities after Fracture.—Deformity after unsuccessfully treated fractures may be prevented or relieved by refracturing the callus which unites the fragments. This is occasionally necessary in instances in which no treatment has been given. The bone is bent across the edge of a padded table or over the surgeon's knee, and after the band of union has been ruptured is treated as a recent accidental fracture. This may be done with success at the expiration of even six months, since the seat of fracture remains weaker than the rest of the bone for a long time.—Roberts, *Medical and Surgical Reporter*, October 31, 1896.

DIAGNOSIS BY BLOOD EXAMINATION.[1]

By H. W. FURNISS, M.D., Ph.D.,
INDIANAPOLIS.

That blood examinations have taken such a stride of late is due to the improvement in instruments for examination, differential stains, and consequent lessened labor and increased accuracy. About all that is necessary to be known about the blood in a given case can be ascertained in fifteen minutes, and since there are several diseases in which it is possible to make a positive diagnosis by blood examination alone, several others in which an examination will materially aid in diagnosis, others in which the negative result obtained aids us, to say nothing of the valuable assistance rendered in those cases in which we cannot communicate with the patient either because of stupidity, insanity, age, maligning, or unconsciousness—I deem it well worth even the busiest practitioner's time to avail himself of this aid to diagnosis, and particularly so in the case of fever, as there is no case on which a blood examination would not throw light.

To make a thorough examination of blood, it is necessary to find out the following facts: Number of red cells in a given quantity, which is usually a centimetre; number of white cells in the same; ratio of white to red; number of each kind of white cells; ratio to each other; size, shapes, peculiarities, and contents of cells; percentage of hæmoglobin; color value or relative amount of hæmoglobin per red cell; relative amount of fibrin; and finally, if any substance other than the above occurs, and if so, of what nature.

The methods of examining blood, its histology, preparation of specimens, stains used, etc., have been described from time to time in the medical journals and descriptions can be found also in any good book upon the subject, so I shall not take time to review them.

Naturally the first diseases that my paper would bring to your mind are anæmia and chlorosis, and rightly too, as no little of the diagnosis and prognosis can be told from a blood examination.

Anæmia is a diminution in red blood corpuscles, hæmoglobin, or both, and is independent of the color of the skin or the mucous membrane. The greater number of times it is impossible to tell pernicious anæmia from chlorosis except by blood examination. In the former you nearly always have decrease in the number of cells and a great alteration, decrease or increase, in size and form of the red corpuscles, the color value being high; while in chlorosis you may have decrease in red cells, but the principal thing is lack of cell hæmoglobin or color value. Then we may have megaloblasts in chlorosis, but normoblasts predominate; while the reverse is true of anæmia. True, we have fewer red cells in malignant disease, but then we nearly always have leucocytosis, which will help to distinguish; then normoblasts predominate in malignant disease, megaloblasts in anæmia.

Those diseases which do not cause leucocytosis but lessen corpuscles do not have megaloblasts or high color value, and leukæmia can always be made out by the greater number of myelocytes. In anæmia search carefully for nucleated corpuscles, for if any are present they will aid much in prognosis. The presence of megaloblasts with no other nucleated forms is a bad sign. It is the kind of nucleated corpuscles and not the number that is of interest—the ratio of megaloblasts to normoblasts that is important. Low color index and normal cells show improvement at the time; high color index is a bad sign.

In leukæmia the red cells are slightly diminished, the white markedly increased. About thirty per cent. of the white cells are myelocytes, and in lymphatic forms ninety per cent. are lymphocytes. Leukæmia is distinguished from Hodgkin's disease, which has the same symptoms, by the blood being normal in the early stages of the latter disease, and in the later stages not more than a slight anæmia existing.

It is possible by a blood count to diagnose shock of hemorrhage from that of concussion or compression, there being a marked decrease in red corpuscles in the former and none in the latter. In the same way internal hemorrhage can be told from peritonitis or obstruction, and the advisability of an operation after loss of blood can be safely told by estimation of the hæmoglobin, any percentage lower than thirty being a contraindication.

Again, it is possible by making a blood count to tell if one's patient has been in reality fasting, when if it is so there will be marked decrease in leucocytes; but it must be borne in mind that diseases of the stomach and small intestine may prevent leucocytosis. Then it must be remembered that pregnancy, violent exercise, cold baths, and massage may cause leucocytosis, but in each of these cases the condition of white cells remains about the same, only that the number is increased. We may expect leucocytosis to be present after hemorrhage in malignant disease and inflammation; and absent in malaria, measles, typhoid fever, and all forms of tuberculosis.

Typhoid fever is easily told by Widal's method or by Johnson's modification. The diagnosis depends upon the fact that blood or blood serum from a patient with typhoid will cause a drop of actively motile typhoid bacilli to cease motion and clump. Positive results are not always obtained, but they are nearly always. Acuteness or mildness of attack does not seem to have any appreciable difference on the clumping. Johnson's method consists in collecting a specimen of blood on a sterilized paper and allowing it to dry, thus permitting transportation—a great factor in municipal laboratory work. The dried blood is dissolved in a few drops of sterilized water, and a small portion of the solution added to a drop of bouillon containing actively motile bacilli. To make a success of the test, it is necessary to have a pure fresh culture of typhoid, and it has been observed that attenuated cultures work better than more virulent ones. The time necessary for the specimen to cause clumping should not exceed thirty minutes, and this clumping does not seem to be a killing of the bacilli, but just a paralyzing. It is said that this clumping cannot be caused by any other disease, yet it is quite necessary that the serum or blood should be considerably diluted, as it has been observed that sometimes healthy blood may cause this reaction, while typhoid blood diluted one to thirty will produce it.

Pneumonia is distinguished from typhoid, malaria, or plain influenza, when only symptoms are present and no physical signs, by the marked leucocytosis of the first-named disease. There is no means of diagnosing pneumonia from capillary bronchitis. In pneumonia there is always a marked fibrin network. So far as prognosis goes, the absence of leucocytosis is always an unfavorable sign, unless the case is of the mildest kind, while its presence leaves the matter in doubt, though favorable for recovery.

Septicæmia can be diagnosed by bacteriological examination of the blood; rheumatism and diphtheria cannot be told; and the grippe, according to Cannon, can be diagnosed by finding the specific microorganism in stained specimens of the blood.

Scarlet fever is distinguished from measles, in that the latter never has leucocytosis, while the former always has. In scarlet fever eosinophiles are absent in bad cases and increased in favorable cases.

Appendicitis cannot be told from pus tubes by exam-

[1] Abstract of paper read before the Marion County Medical Society, February 23, 1897, and the Indiana State Medical Society, Terre Haute, May 20, 1897.

ination of the blood, but can be told from colic, constipation, floating kidney, ovarian or pelvic neuralgia, gall stone and renal colic, if uncomplicated, because of the leucocytosis in the former and the lack of it in all other cases.

Cholera can be diagnosed in much the same way as typhoid fever, blood from a cholera patient causing a cessation of motion of cholera germs.

In peritonitis we have marked leucocytosis and increase in fibrin network, but there is no leucocytosis in tuberculous peritonitis, and it may thus be diagnosed.

Pericarditis with effusion can be told from hypertrophy or dilatation on account of the marked leucocytosis in the former case.

In meningitis we always have leucocytosis, while in no other form of intracranial disease except abscess and apoplexy do we have this phenomenon. On account of the always-present leucocytosis, meningitis can be told from typhoid, which it simulates, but cannot be told by blood examination from pneumonia.

Justus claims to be able to diagnose syphilis before the secondary symptoms have appeared. He first estimates the percentage of hæmoglobin, then gives inunction or injection of mercury, and finds that the hæmoglobin falls from ten to twenty per cent. in a day, which he attributes to the action of the mercury on the weaker blood cells. After a few days this marked diminution is followed by a gradual rise, and soon the percentage of hæmoglobin is higher than it was before. He claims that syphilis is the only disease in which the facts stated occur. Blood examinations otherwise are negative, except so far as indicating the severity of the affection, large numbers of young white cells and small percentage of hæmoglobin being diagnostic of severer cases. Cases having myelocytes are serious, while we look for leucocytosis after the primary stage.

According to Bremmer, of St. Louis, it is possible to diagnose diabetes by blood examination long before it could otherwise be told. His method is simple. He heats two blood films, one normal and the other of suspected blood, in a hot-air sterilizer for six or seven minutes, at a temperature of 135° C. He then allows the specimens to cool, and when cold he exposes the two to a one-per-cent. aqueous solution of Congo red or methyl blue for two minutes, when the normal blood will be stained red or blue according to the color used, and the other if diabetic will resist the action of the stain.

In purpura hæmorrhagica, hæmophilia, and scurvy, diseases in which you would expect to learn a great deal from blood examination, there is little or no characteristic change.

In examining the blood for malaria, it is best to take the specimen before or after the chill, as then the plasmodium is larger and is pigmented. It does not take much skill to find the plasmodium, provided you know what you are looking for and are patient and painstaking; and once you find it, it will be quite easy in the future to recognize it. Staining has its advantages, as by it it is easier to see the organism and one can examine it at one's leisure; also there is not the danger of confusing the plasmodium with other things found in the blood. The best stain to use is Phlen's, which is a combination of eosin dissolved in alcohol, and methylene blue. The blue stains the plasmodium itself, and the corpuscular substance is in contrast stained pink. In all cases of suspected malaria the blood should be examined, as clinical symptoms alone often warrant a diagnosis of malaria when tuberculosis, syphilis, septic infection, or something else is the true cause of the symptoms.

Pleurisy may be diagnosed from empyema, pneumonia, and malignant lung trouble, and cyst of kidney from perinephritic abscess, by the absence of leucocytosis.

Holmes, of Denver, claims to be able to diagnose tuberculosis, even in its earliest stages, by blood examination, even when it is impossible to tell it either by physical signs or sputum examination. He bases his theory upon the assertion that each individual has a biological prototype in the leucocytes of his own blood. He further claims the following characteristics of tuberculous blood: "Marked deviation from normal percentage of all varieties of leucocytes. Great decrease in percentage of small lymphocytes. Usually marked increase in percentage of large lymphocytes. Many giant lymphocytes with irregular contour and protruding globules of hyaloplasm. Eosinophile cells absent or few in number only in severe cases. Myelocytes occasionally present. Marked cell disintegration. Many groups of *débris* from disintegrating leucocytes. Phagocytes with indistinct cell contour and granules few in number, poorly stained, and scattering. Marked irregularity in size and appearance of phagocytes, dwarf phagocytes as small as small lymphocytes, giant phagocytes double usual size, with five or more nuclei. Often a clear narrow and sharply defined ring separating the nucleus from the cell body in small and large lymphocytes. Phagocytes with granules taking a basophilic tint, evidence of approaching dissolution. Grouping together of a large number of phagocytes observed before dissolution. Very little disintegration of red cells."

Finally, the examination of blood in post-operative pyrexia is of value to determine if pus is present, as with pus there is always leucocytosis.

New 142 West New York Street.

MEDICAL AND SURGICAL ICONOCLASM.

By MARVIN L. GRAVES, M.A., M.D.,

WACO, TEXAS.

Art admits no model but perfection. Science permits no result but truth. Medicine acknowledges its empiricism; surgery its experimentalism. Evolution and revolution have touched and influenced every thought known to man. Scepticism has been the point of origin of many truths. Agnosticism has been the invariable and essential accompaniment of many facts, finally demonstrated and accepted. Doubt, question, and negation have resulted in greater progress than ignorant affirmation or blind belief ever accomplished. Interrogation and investigation will never injure truth nor aid error. In seeking to draw your attention to iconoclasm and its always preceding or accompanying scepticism or agnosticism, no reference whatever is made to the use of these terms in religion. They have their practical application to the creed and practice of our profession. Iconoclasm literally means the smashing of idols or images, and it denotes either partial or complete destruction of the object together with the accompanying superstition or fanaticism attending its existence. Medical and surgical iconoclasm means the destruction of false theories and wrong and harmful practice in medicine and surgery. It means that the cold, critical, searching flashlight of experiment and investigation will dethrone error and enthrone truth. It means the exposure of all forms of sham and deception, accidental or intentional. It means the unmasking of charlatanry, whether inside or outside the regular profession. It means the total rejection of harmful doctrine and evil practice, wheresoever found. It means that the insanities of spiritualism, the frauds of Christian science, and the hollow pretences of vitapathy and magnetism, and all other medical and surgical isms and pathies not

founded on truth and supported by reason, shall fall beneath the guillotine of an art that is skilful and of a science that is inexorable. But iconoclasm is not merely destructive; it is also constructive by reflex action. It is creative by reaction. It may tear down, but it will also build up. The one may be radical, the other may be conservative, yet when the pendulum ceases from its excessive oscillations to and fro it is almost certain it will then traverse an arc of right and safety. Life in nature is said to come through death. Sacred Writ hath taught this great lesson in the "corn of wheat." Certain it is that in the creative chemistry of nature and the artificial laboratory there is a change, a transformation, if not an actual destruction of one or more elements in the formation of another. Through this process of destruction a newer and perchance a better life is born. Theories and doctrines have passed unquestioned from century to century, till some earnest, honest sceptic began to doubt, then question, then deny—

> "Till out of the darkness future brightness is born,
> As after the night comes the sunrise of morn."

Gravitation and the revolution of the heavenly bodies never met their correct explanation till Newton and Kepler, the iconoclasts of astronomy, disproved a host of false theories, smashed the idols of error, and established truth.

The pivotal point of modern progress is the "origin of species" and Charles Darwin's iconoclasm of hoary-headed errors. The inspiration of the new philosophy was born in the death agonies of the old. What may be said of the fanciful and foolish notions of the circulation of the blood, of the different functions of nerve and nerve cells, of the pathology of disease, before Harvey and Bell and Bernard and Charcot, mighty men of genius, medical and surgical iconoclasts, whose scientific minds revolted at error and never failed or faltered till modern physiology and pathology were established on accurate foundations? Who but an iconoclast like Lord Lister disputed the darkest of surgical heathenisms and illuminated the entire field of surgery by asepsis and antisepsis? Who but iconoclast Koch rejected the erroneous doctrines of tuberculosis and cholera, and after years of patient uncomplaining toil demonstrated their germal origin and erected a triumphal arch under which shall yet pass successful treatment? Who but Marion Sims doubted and denied the older practice of gynæcology and revolutionized this branch of surgery throughout the civilized world? Who but Jenner and Pasteur tore aside the cobwebs of ignorance and superstition from small-pox and hydrophobia, and gave to suffering, terror-stricken humanity a hope and a practice that have saved multitudes of lives? In the reactionary construction which follows destruction, it matters not whether each reformer or revolutionist himself established the complete truth. He may have only blazed the path and destroyed monster obstacles, and later investigators, led on by his flickering, perhaps feeble, but never-dying light, have solved the problems and blessed humanity. It was not necessary for Semmelweiss to live to see every obstetrician acknowledge that puerperal fever was a septic disease and due to infection by the surgeon at delivery. It was not necessary for the immortal Long to live to see anæsthesia practised in every hamlet on the globe and agonizing pain relieved under its blessing. It was necessary that, amid ridicule and derision, they gave to the world a new thought and improved practice. Nowhere in all the realm of science and art have scepticism and agnosticism been more truly the stepping-stones and starting-points of progress—real, true, beneficent advance—than in medicine and surgery. In the very nature of our art empiricism and experimentation were necessary.

Exactitude was impossible, perfection unattainable, when knowledge was minus and ignorance plus—when so many factors, as heredity, season, climate, age, constitution, and incomplete pharmacy, blocked the way. Out of all these difficulties patient investigation has tabulated results, until to-day etiology, physiology, and pathology have much of certainty, and diagnosis, prognosis, and treatment are growing more exact and more certain. But the mountain top has not yet been reached. Many fogs and sloughs and quagmires still remain. Modern medical science is throwing the searchlight full upon some modern fads and fancies, and exposing some deep-rooted fallacies. Of all men, the physician of to-day is the most sceptical. It is only after the most thorough trial and careful examination that he gives his approval to the theory of *post hoc ergo propter hoc*. He waits, he watches, and tries each new remedy or operation suggested or doctrine expounded, before he adds his sanction or expresses his rejection. Everything is rigidly tested; eclecticism in its broadest and truest interpretation demands it. Humanity, the victim or grateful beneficiary, demands it. No great man's *ipse dixit* will now make tuberculin cure consumption or antitoxin destroy diphtheria.

Let me point out to you some of the dangers that will threaten us if we lose this spirit of beneficent iconoclasm in our professional work. We do not record accurately and fully our cases in detail. We do not take time to study fully the disease we treat. We do not examine each case and note all signs and symptoms. We do not group, tabulate, and analyze series of cases, and thus get at correct conclusions. We do not report or write up our cases and subject them to the kindly criticism and discussion of the profession. Our haste and inaccurate style are illustrated in the following: How many of us, called to a man suffering intense pain, ever stop to examine him carefully before shooting a hypodermic of morphine into his arm? Admit the immediate necessity of relief—how many of us leave the house when pain has ceased without further effort to find out what really was the matter? How often, when asked to prescribe for piles, we write a prescription without even requesting an examination or knowing the condition, and later find the patient in the hands of an advertising quack, being cured of ulcer in the rectum? How frequently complaint of headache receives a routine prescription without question, when uræmic toxæmia or uterine disorders are the offenders? How often does a uric-acid storm or a bilious attack find itself labelled malarial fever and cured in twelve hours with calomel and quinine and arsenic? How frequently does a slight dermatitis, insignificant in nature and effect, flame out a violent erysipelas and require all the skill of Dr. Blowhard to cure it in two days? How often, oh! how often is typhoid fever turned into febricula and chased off the field of action in four days by the specific treatment of Dr. Greatman? How frequently is an ordinary bronchitis with engorged liver and pain in the side kept under dim gaslight and slippered tread and whispered consultation for two weeks; or, on the other hand, a terrible pneumonia throttled in twenty-four hours by the heroic treatment of Dr. Allgas?

Let not criticism assume a personal form or question smite an individual. It matters but little that the full value of hydrotherapy has been established by hydropathists as a clique. It matters but little that simpler methods and smaller doses have been the results of homœopathy as a sect. It matters but little that many new and reliable drugs have been introduced by eclecticism as a faction. It matters still less that spiritualism and Christian science as creeds have estab-

lished hypnotism and suggestive therapeutics. But it matters much that whatsoever doctrine advanced shall be truth; that whatsoever remedy offered shall be good. It matters much that education is getting broader and more catholic; that art demands skill, science commands exactness. It matters much that physicians are learning that they can no longer diagnose a simple urethritis as a virulent gonorrhœa, and cure the patient in two days; that the victim of a cough can no longer be called consumptive and cured with a patent consumption cure—when microscopical analysis of the former shows absolutely no gonococci, and laryngeal exploration of the latter shows a polyp easily removed. It matters much that dropsy can no longer be attributed to jaundice, but under the blaze of science reveals its cardiac, renal, hepatic, or abdominal origin. It matters much that typhoid fever can no longer be purged with calomel and tortured with quinine, when proper nourishment and careful nursing will tide the patient through. It matters much that everything is no longer congestion and the stomach no longer a swilltub into which may be poured all the refuse of the pharmacists. It matters much that our doctors are once again learning that water properly applied, the stomach wisely preserved, nutrition supported, and vitality stimulated, will save many a life when polypharmacy will dig many a grave. It matters much that nervous exhaustion is now not always due to overwork and loss of sleep, when we know the patient never worked three hours a day and sleeps nine out of twenty-four. It matters much that thirty grains of calomel are no longer specific for constipation and torpid liver, and orange blossoms can no longer be applied to the vagina for endometritis. It matters much that poultices are no longer applied to ruptured tubal pregnancies and that iodine is no longer painted over large pelvic abscesses. It matters much that a little uterine inertia is no longer the occasion for the application of the long forceps and the combined strength of Hercules and Samson to tear a child's head through a safe passage with tremendous velocity, when thirty grains of quinine or two ounces of sugar will deliver the babe safely at the end of forty minutes and still leave the mother a cervix, a urethra, and a perineum. It matters much that public sentiment and professional conscience no longer allow every tyro to open bellies indiscriminately in search of ovaries with imaginary inflammation or tumors of doubtful existence.

Then, all hail iconoclasm in its active destruction and its reactionary construction of safe practice and legitimate surgery!

600 Austin Avenue.

Sprains and their Treatment.—Graham defines a sprain as a wrench or twist of a joint; a sudden, partial displacement of two articulating surfaces, followed by immediate replacement. The symptoms include pain, swelling, discoloration, and usually heat, with impaired mobility. The diagnosis may be obscured by swelling, which may conceal also a fracture of bone. Whatever will quickly reduce the heat, the pain, and the swelling—such as massage, snug bandaging, and an elevated position of the joint—will proportionately make the diagnosis easier. The means just mentioned are therefore valuable not only for diagnosis, but also for treatment; and their use in many cases of sprains of all degrees of severity shows that recovery follows in one-third of the time required under absolute rest and fixed dressings without massage. Even the condition of a sprain involving a joint previously weakened by malignant disease may be rapidly ameliorated by massage, and useful motion be gained before amputation. *Boston Medical and Surgical Journal*, June 17 and 24, 1897.

Progress of Medical Science.

Acute Partial Enterocele.—Upon this subject Stahl (*Journal of the American Medical Association*, October 2, 1897, p. 683) reaches the following conclusions: 1. Acute partial enterocele does occur. 2. The symptoms of this condition are of a milder type than those of an acute complete enterocele; if it is strangulated, the vomiting is not stercoraceous and constipation not absolute. Exceptionally the reaction is so slight that the condition continues unrecognized. 3. Because of mildness of symptoms, smallness of size, and tendency to disappear, it requires most careful differentiation. 4. Acute partial enterocele is to be especially differentiated in its early forms from a large inguinal gland; in its later or inflammatory form from suppurative adenitis. 5. The acute form of partial enterocele, if not relieved, either induces the usual reactionary changes of an acute hernia or it is converted gradually into the chronic form of partial enterocele. 6. The treatment consists in reduction by taxis or in herniotomy.

Foot-and-Mouth Disease.—Loeffler and Frosch (*Deutsche medicinische Wochenschrift*, September 23, 1897, p. 617), constituting a commission appointed to investigate foot-and-mouth disease, report the following summary of the conclusions reached by them: (1) All of the bacteria hitherto described as the exciting cause of this disease have been accidental associations. The disease can be induced by inoculation with sterile lymph obtained from the vesicles, which contains morphotic elements of various kind. Protozoa have not been demonstrated as the causative agents. (2) Beef and swine have been also shown experimentally to be especially susceptible to the disease. Sheep and goats could not be infected artificially at first, as well as dogs, rabbits, guinea-pigs, ordinary mice, field-mice, and fowl. (3) The most certain mode of infection consists in the injection into the circulation of lymph obtained from vesicles. Infection could be induced also by injection of such lymph into the abdominal cavity and into the muscles, as well as by its introduction into the mucous membrane of the mouth previously injured by puncture. Uncertain results followed subcutaneous and cutaneous inoculation. In animals inoculated by intravenous injection vesicles appeared first in the mouth, and in milch cows upon the udders, after the lapse of from one to three days—in accordance with the amount and virulence of the lymph—in conjunction with febrile manifestations, and one or two days later vesicles appeared, first upon the extremities. Both sets of vesicles are thus to be attributed to virus circulating in the blood and not to direct infection from the skin. With the development of the vesicles the virus disappears from the circulation. 4. To effect inoculation with certainty, one-five-thousandth of a cubic centimetre of fresh lymph was sufficient. Smaller quantities up to one-twenty-thousandth cubic centimetre were uncertain in their effects, and still smaller quantities were innocuous. (5) The lymph was rendered innocuous when heated to 37° C. for twelve hours, or to 70° C. for half an hour, and also on drying for twenty-four hours at summer temperature. Preserved in refrigerators, the lymph inclosed within capillary tubes retained its virulence for fourteen days, at times even longer. Individual germs proved capable of continued existence for eight or nine weeks. Large quantities of lymph were necessary to induce infection. (6) In opposition to prevailing views it was demonstrated that immunity was conferred upon infected animals two or three weeks after recovery from an attack. On the one hand some animals are natu-

rally immune, while on the other hand others are extremely susceptible. The latter are not rendered immune by a single attack, but more fully so by a second. The blood of immunized animals contains substances which when mixed with fresh lymph seem capable of neutralizing the effects of the latter in susceptible animals. (7) Beef and swine can be immunized artificially by means of injections of lymph warmed until its infectiousness is removed, as well as by injection of mixtures of lymph and blood from immune animals. The majority of animals were rendered immune by a single injection, which apparently induced no bad effects. (8) It thus appears scientifically demonstrated that foot-and-mouth disease can be successfully treated by means of protective inoculation.

Successful Treatment of a Large Aneurism of the Aorta by Increasing Artificially the Coagulability of the Blood. — At a recent meeting of the Académie de Médecine, Lancereaux (*Deutsche medicinische Wochenschrift*, August 12, 1897) reported the case of a man with an aneurism of the ascending aorta, as large as a child's head, which had eroded a portion of the sternum and the cartilages of several ribs, was palpable immediately beneath the skin, and appeared about to rupture. Upon the basis of previous experiments upon animals, an attempt was made by means of injections of gelatin to increase the coagulability of the blood, in order to augment the formation of clots along the wall of the sac. Accordingly injections were made in the gluteal region, until in the course of two months the amount of gelatin in solution injected equalled more than two quarts. In the mean time the tumor became firmer and distinctly reduced in size, although some pulsation continued to be transmitted. The severe subjective discomfort present at first wholly disappeared, so that the patient declined to continue the treatment longer.

The Treatment of Tympanites. — Porter (*Medical News*, July 31, 1897, p. 134) contends that intra-intestinal tympanites often causes death in patients suffering from abdominal and pelvic disease, and that it may do so also in cases in which the abdominal and pelvic organs are free from disease. Tympanites occurring in the course of any serious illness should be considered a symptom of ill omen, and measures for its relief should be promptly instituted. If relief fails to attend the use of cathartics, posture, enemata, and the rectal tube, cœliotomy and incision of the bowel should be undertaken without delay. In cases of general peritonitis and obstruction of the bowel, no trial should be made of other methods, but cœliotomy and incision of the bowel should be undertaken as soon as the diagnosis is made. Puncture of the bowel should be practised only in cases in which the patient is *in extremis*, and then only in cases—such as those of typhoid fever without perforation, pneumonia, etc. —which present no other indication for cœliotomy than the tympanites itself.

The Prophylactic Utility of the Diphtheria Antitoxin. — The Roman correspondent of the *British Medical Journal* cites the report of an epidemic of diphtheria in the town of Baricella, in the province of Bologna, the progress of which was arrested by preventive injections of the diphtheria antitoxin. The outbreak developed among a population of fifty-five hundred persons, exposed to the worst possible hygienic and dietetic conditions. Fifty-eight cases occurred in the course of a few months. Of this number fifty-four were treated with the antitoxin of diphtheria, with five deaths—a mortality of 8.6 per cent. The usual prophylactic measures, *i.e.*, isolation, disinfection, closure of the schools, etc., failed to bring the epidemic to an end. Recourse was therefore had to preventive inoculations on a large scale, four-fifths of the children of the poor, between one and twelve years of age, receiving the treatment. At once new cases failed to appear among the vaccinated children, although they continued to develop with their previous frequency among those not subjected to the prophylactic treatment; and the epidemic was soon brought to an end.

The Treatment of Lupus Vulgaris with the New Tuberculin.—Morris and Whitfield report, in the *British Medical Journal* of July 24, 1897, six cases of lupus vulgaris submitted to treatment by means of injections of the new tuberculin of Koch, and summarize as follows the effects, in the order in which they were observed: A diminution of the surrounding halo of redness in those cases in which this had been present to a marked degree before the commencement of the treatment; in cases in which there were simply yellowish-brown nodules in a white scar, the injections produced no visible effect at this stage. The next change noticed was a slight depression in the centre of the nodules, leading to wrinkling and later to desquamation of the cuticle. Then there occurred a steady healing of all ulcerated surfaces, and slow subsidence of the previously permanent œdema of the lips, ears, etc. In two cases actual disappearance of the characteristic lupus nodules was observed. In other cases there was distinct shrinking of nodules, with diminution in the scaling of the surface. Another effect of the injections was the softening and flattening of pre-existing scars. In no case was there the slightest progress after the institution of the treatment. In the sequence of the injections there was at first little or no reaction, although in some cases a feeling of heaviness and drowsiness was complained of. When the larger doses were reached there was considerable febrile disturbance, sometimes with headache and pains in the limbs, and even some trouble in breathing, and a general feeling of depression, with broken sleep. Locally the erythema was generally increased, and the whole affected area, including even old-standing cicatricial tissue, was swollen. In two cases in which there were sound scars, probably from previous lupus, no reaction was observed in the scars. The phenomena of reaction quickly disappeared and were followed by a better feeling on the part of the patients. On the whole, the opinion is expressed that the local effects of the new tuberculin in the cases of lupus vulgaris in which it was employed were uniformly good, in some cases distinctly brilliant. The constitutional disturbance was in no sense severe and always of a transitory character. As far as could be judged, the injections did no harm.

Multiple Neuritis Following Influenza. — Allyn, writing in the *Journal of the American Medical Association*, July 24, 1897, reports several cases of multiple neuritis following attacks of influenza, and from these and a study of the literature of the subject he reaches the conclusion that influenza, like other infectious diseases, may be followed by neuritis and multiple neuritis. One sex does not seem to be more liable to this complication than the other. It occurs most frequently in persons between the twenty-fifth and forty-fifth years, and appears during convalescence in a few days or two or three weeks after the attack of influenza has subsided. It may present sensory, motor, vasomotor, or trophic symptoms, or all combined; but sensory and vasomotor symptoms are more prominent than in diphtheria and some other causes of multiple neuritis. In the great majority of cases recovery ensues, both as regards restoration of function and power, as well as regards life. Recovery does not

usually take place in less time than four weeks, and may be delayed for months. Treatment should consist first in absolute rest in bed. Anodynes must be given in sufficient doses to relieve pain, when that is a prominent symptom. Morphine hypodermically may be necessary, but may be often replaced by codeine. The antipyretic anodynes are insufficient in safe doses if the patient has pains for many days. Cinchonidine salicylate is distinctly valuable, especially when the pain is not of the greatest severity. At a later stage potassium iodide and mercuric chloride in small doses are helpful. When the pain is seated in an extremity firm pressure with a flannel bandage yields great comfort. Blisters over the painful nerve trunks when they are superficial are also valuable in relieving pain. Close watch must be kept on the action of the heart and the character of the breathing. In most of the fatal cases death results through paralysis of the diaphragm. The closest attention must be given throughout the course of the case to the nutrition of the patient and to the condition of the skin, especially over portions of the body exposed to pressure. As far as possible the stomach should be reserved for food. Medicines in these cases act better when given hypodermically, and the stomach is less likely to be deranged. This caution applies especially to the giving of anodynes.

The Treatment of Scleroderma.—Philippsohn (*Deutsche medicinische Wochenschrift*, August 12, 1897) reports the successful treatment of a case of scleroderma by Bülau with sodium salicylate, in doses of fifteen grains three or four times daily, and reports two cases of the same disease also successfully treated with salol in doses of seven and one-half grains three or four times daily. From this experience it is concluded that scleroderma is, with respect to the induration of the skin, capable of improvement and cure by means of salicylic acid. Early administration would be likely to prevent deformity and secondary atrophy. The best form in which to administer salicylic acid is that of the phenyl or ether. Salol, which is also capable of controlling the itching, can be taken for long periods of time without deranging the digestion. The daily dose is from thirty to forty-five grains. If after the disease has existed for some time shortening of muscles and tendons or stiffness of joints takes place, this must be overcome by systematically directed gymnastic exercises.

A Fatal Case of Addison's Disease in a Young Girl.—Bury reports in *The Lancet* of June 19, 1897, the case of a girl, thirteen years old, who had always been a delicate child, tiring easily and being constantly sleepy. As an infant she had been treated for rickets and diarrhœa. She had never had a severe fall or received any bodily injury. At the age of eleven years, after a stay of several weeks in the country, her skin became dark colored, as if sunburned, but in the course of a few weeks her natural color was restored. The existing illness had begun about a year previously, with symptoms of gastric disturbance—discomfort after food, nausea, and vomiting. She suffered also from headache, and on three occasions had fainted. In the course of a few weeks a change in the color of the skin was noticed, and it gradually became darker. For two months there had been daily vomiting and weakness had become marked. The girl was thin and of slender build, and had obviously wasted. All parts of the body were of a brown color, like that of a mulatto. The tint varied in depth in different parts, but the transition between a dark brown and a light brown was everywhere quite gradual. The bronzing was most intense at the back of the neck, on the dorsum of the hands, on the lower part of the abdomen, and over the knees; and least intense on the palms of the hands, the soles of the feet, and over the calves of the legs. No pigmented moles could be found. The nails were of normal color and the conjunctivæ were pearly white. A faint, patchy pigmentation was seen on the mucous membrane of the lips and the inside of the mouth. The tongue was free from discoloration. No enlarged glands could be found, and no abnormality could be detected on careful physical examination of the chest and abdomen. There was complaint of pain in the epigastrium, which was aggravated by the taking of food; and there was slight tenderness on pressure in each lumbar region, palpation setting up spasm of the abdominal muscles. The pulse was 96, regular, and feeble. The urine presented no abnormality. There were no paralysis, and no alteration of cutaneous sensibility. The knee jerks were increased and the wrist jerks appeared unduly irritable. No ankle clonus could be elicited. The superficial epigastric, abdominal, and plantar reflexes were exaggerated. Varied treatment was employed, including adrenal extract in one form or other, but progressive deterioration took place, and death followed a convulsion succeeded by coma. Upon post-mortem examination, in addition to congestion of the cerebral meninges, hemorrhages beneath the visceral layer of the pericardium, slight pleural adhesions on the left side of the chest, and diminished size of the thyroid gland, the adrenals were found enlarged and firm and adherent to surrounding tissues. Upon microscopic study the latter presented histologic changes of tuberculosis. The semilunar ganglion and the left great splanchnic nerve exhibited no pathologic alteration.

Traumatic Rupture of the Duodenum, with Survival for Sixteen Hours.—Close reports the case of a boy, thirteen years old, who had been kicked by a horse, and when seen twelve hours later was found lying in bed with the hip-joints slightly flexed and the face pale and anxious. There was complaint of some pain in the lower part of the abdomen, which was slightly distended and very tender. There was no visible bruise or external wound. The abdominal muscles were rigidly contracted and free manipulation could not be made. The percussion note was quite dull over the whole of the lower part of the abdomen and in the left flank, while there was a band of tympanitic resonance below the costal margin and ensiform cartilage; and in the right flank also the note was tympanitic in character. The temperature in the mouth was 102.5° F. The pulse was 140, rather small, but not thready. Consciousness was preserved and the patient was able to give a connected account of the accident. It was learned that the boy walked for some distance after the accident. Subsequently he was taken home, and after the application of hot flannels he so far recovered that he was able to get about for some hours, and walked upstairs and downstairs. Later vomiting took place. Clear urine, free from blood, was obtained by catheterization. The conclusion was reached that a rupture of the intestine had taken place, and cœliotomy was decided upon, but before the operation could be begun the patient was moribund, the abdomen becoming greatly distended. Upon post-mortem examination the peritoneum was found to contain about two pints of cloudy fluid mixed with partially digested food. The intestines were much reddened and coated with flakes of recent lymph. On turning back the omentum and coils of small intestine, a rent was found in the second part of the duodenum, from which the chyme was escaping. The opening was large enough to admit four fingers, and was four and one-half inches from the pyloric orifice. —*The Lancet*, July 17, 1897.

MEDICAL RECORD:

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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REMEDIES ANCIENT AND MODERN.

PRESENT-DAY medicine discards more and more the use of drugs. It puts its trust rather in natural agencies and recognizes the fact that each person possesses a separate individuality, instead of, as in the old days, lumping people together and prescribing to them the same drugs, without considering their differing temperaments or dispositions. An intelligent doctor will study the character and temperament of his patient, so as to act on the body through the influence of the mind. In a few words, the tendency of modern practice is to treatment by suggestion. The doctor therefore, should be a many-sided man, of a wide and warm nature, with active sympathies, and possessed of much tact. We all know that contact with a man of this type in many instances does a sick person more good than a prescription. Faith goes a long way, and the battle against disease is often half won when we resolve in our own minds to get well. In the face of this condition of things it is both curious and interesting to read a description of some of the old-time remedies. In a work that appeared in Frankfort in 1701, entitled "A Good and Careful Medicus," by Dr. Johann Helffrich Jüngken, an account of some of the remedies in use at that period is given. For instance, it is stated that "sores of the lips could be cured if the oil or fat which runs out when a wooden spoon is held over the fire was applied to the sores." For the cure of jaundice the advice is tendered "to fasten a live fish, preferably the 'schleye,' around the body or against the soles of the feet, and let it die there." For hydrocele, applications of a mixture of goat manure, crushed snails, powdered sulphur, and kümmel were made. The nastier the mixtures were, the more efficacious were they esteemed. Another alteration for the better that has been made in administering drugs is that they are not, as formerly, given in excessive combination, but are much more frequently prescribed singly.

Yet great as has been the advance in medical treatment and in the preparation and prescribing of drugs, we are nowadays rather too apt to plume ourselves on our superior knowledge, and to regard the pioneers in medicine with a pitying contempt. It should be remembered that the Egyptians, Greeks, and Romans had a very fair acquaintance with both medicine and surgery, and especially with drugs and their properties. Most of the drugs on which we chiefly rely date very far back. Nearly all those most commonly in use were known thousands of years ago. Castor oil and rhubarb were prescribed by the old Arabians, ergot was used in parturition by the peasants of Germany hundreds of years ago, male fern in tapeworm by the early Greeks and Romans. Mercury has been the specific for syphilis almost from time immemorial, and the list can be indefinitely lengthened. The most ancient pharmacopœia known was found between the legs of a mummy about 1500 B.C., and even the principles of modern treatment were practised by Asclepiades of Brussa, who was a sceptic in the use of drugs, and declared "that the cure must be effected by the physician, who must do this safely, quickly, and pleasantly."

History has a tendency to repeat itself. It is probable, too, that the people who inhabit this earth in a hundred years from now will regard our methods of treatment as antiquated and crude, or possibly as superfluous. The prophecy that in the course of time many diseases will be altogether stamped out is not too bold a one to make. Prevention, not cure, will be the motto of the future.

THE SIGNIFICANCE OF INEQUALITY OF THE PUPILS IN CASES OF CARCINOMA OF THE ŒSOPHAGUS.

THE occurrence of inequality of the pupils in conjunction with tumors of the œsophagus is not at all rare, and is to be attributed sometimes to involvement of the sympathetic nerve, sometimes to involvement of the anterior root of the first dorsal nerve, in which pass the oculo-pupillary fibres of the sympathetic. In the latter event there exists, in addition to atrophic palsy of the small muscles of the hand, with characteristic sensory derangement, narrowing of the corresponding pupil and palpebral fissure, with retraction of the eyeball and sluggish reaction of the pupil to light. Inequality of the pupils, with narrowing of the palpebral fissure and retraction of the eyeball, having been observed at the clinic of Professor Eichhorst at the University of Zurich, in a case of carcinoma of the œsophagus, attention was directed to the frequency of the association, and the results are detailed by Hitzig in the *Deutsche medicinische Wochenschrift*, No. 36, 1897. In the course of the year following the original observation, inequality of the pupils was found in four of nine cases of carcinoma of the œsophagus. In twenty-seven earlier cases this peculiarity had been noted but once. In five of the cases the left pupil was contracted and there were no further oculo-pupillary or vasomotor manifestations. In the sixth case there had been also paralysis of the right recurrent laryngeal nerve, and the right pupil and palpebral fissure were smaller than the left, and the eyeball was somewhat retracted. There was, however, no atrophy of the muscles of the right hand. Subsequently there was also paresis of the left recurrent laryngeal nerve. The post-mortem examination disclosed, in addition

to carcinoma of the œsophagus, at the same level, to the right of the œsophagus, a large carcinomatous lymphatic gland involving the vessels and nerves.

IDIOPATHIC SALIVATION.

Salivation may arise from a variety of causes—some local, some remote. In some instances an etiologic factor is not obvious. Among the local causes are inflammatory processes in and about the mouth and its glandular appendages; for instance, stomatitis, glossitis, gingivitis, pharyngitis, etc. Mercurial and other forms of metallic intoxication, such as plumbism and poisoning with antimony, may likewise be placed in this category. Among the remote influences related to salivation, some of which are constitutional and others reflex, may be enumerated gastro-intestinal disorders, nausea, vomiting, gastralgia, pregnancy, suppression of menstruation, hysteria, mania, epilepsy, hydrophobia. Excessive discharge of saliva sometimes occurs as a critical manifestation in the course or at the close of attacks of pneumonia, dysentery, septic intoxication, typhoid fever. It may also take place with the disappearance of a pre-existing leucorrhœa or œdematous state. Jaborandi or its alkaloid, pilocarpine, is almost the only drug directly capable of inducing excessive salivary secretion. Finally, there is a small number of cases in which no cause for the morbid condition can be ascertained. In these the disorder is designated essential or idiopathic, but such a distinction can be considered only tentative, to be supplanted by a more accurate and distinctive one when the expansion of our knowledge shall disclose the previously hidden cause.

In a recent communication upon this subject, Jordan (*Birmingham Medical Review*, September, 1897, p. 173) has reported two interesting cases of so-called idiopathic salivation occurring in children. In one the patient was a boy, four years old, who came under observation on account of constant dribbling of saliva from the mouth. The child's clothing for some distance below his neck was thoroughly soaked. It was stated that he had always dribbled, very much so during dentition. The dribbling continued at night, so that the pillow was wet, but to a less extent, and the amount of saliva that escaped varied from time to time. The boy appeared quite happy, and but for the salivation perfectly healthy. He was said to be in good health, to eat well, and have no digestive trouble, but to be always thirsty. He used ordinary diet and was very fond of porridge. He was intelligent for his age and talked plainly. Examination disclosed no latent mischief or defect, general or local. The mucous membrane of the mouth was healthy; the left tonsil was perhaps slightly enlarged; and of the teeth, which were cut normally, the lower premolars were already decaying. Four other children in the family were in good health and displayed no tendency to salivation.

Three months later another boy, aged two and one-half years, presented himself, giving a history almost identical with that detailed. This child too had dribbled very much during dentition, which began when he was four months old, and was completed eight months later. The dribbling continued, but received little attention until the child was two years old. From this time it had grown gradually worse, although it varied in degree. The clothing was saturated. At one time the dribbling had continued through the night. The general health was said to be good except for attacks of tonsillitis. This child also had fed much on porridge. His teeth and the mucous membrane of the mouth were in a healthy state, but the tonsils, especially the left, were much hypertrophied. No other lesion of any sort was discovered on examination. The boy was intelligent, although he did not speak plainly.

The condition described appears to be a rare one. Finlayson has reported a case in which salivation appeared rather suddenly in a child at the age of six years, and Bohn has contributed an article on the subject to Gerhardt's "Handbuch der Kinderkrankheiten," Bd. iv., Abth. 2. The disorder may set in in early life, during dentition, and continue indefinitely thereafter. In some cases it occurs for the most part only in the erect posture, ceasing, as a rule, during sleep. It may be diminished by emotions of the most varied kind. Iron has proved of undoubted influence in the treatment, but although anæmia was present in some cases this is not thought to be a cause of the disorder. The affection presents some features of a neurosis. The intermittent character of the salivation, its subordination to psychic influences, its tendency to abate with the development of the body or to yield to remedial drugs, point to a peculiar and isolated affection of the salivary-gland nerves in the developing organism of the child. How late in life the disorder may continue is a matter of uncertainty. The question arises: How far may the salivation be the result of an increased flow, and how far due to a failure to acquire the habit of automatically swallowing the saliva? In the presence of hypertrophied tonsils it is possible that as a result of difficulty in swallowing there may be a failure to acquire the habit of performing this act automatically.

A DISPENSARY NEEDED.

Not unduly to prolong the suspense, it should be stated in passing that we are not speaking of New York. In a recent number of the *North Carolina Medical Journal* the editorial department is devoted exclusively to a plea for the establishment of more dispensaries and hospitals in the South. The burden of caring for the sick poor in many regions now falls wholly upon the physician, who must often supply medicines besides giving his services and time, to say nothing of wear and tear to gig and horseshoe and perhaps pneumatic tire. There would appear to be a lack of "charity" in certain portions of our Southern States. The writer says: "In only three or four of the larger towns is there any effort being made to dispense medical aid to the poor from the public funds."

The good-natured doctor seems to accept the bur-

den placed upon him as a necessary part of his professional duties. If in some way the oversupply of philanthropists of this city, consumed with a desire to establish dispensaries, could have their attention diverted to the South, what a double blessing it would be! Or even if a few of our institutions now depending upon the "better classes" for material would consent to transfer the seat of their operations, what a relief to the army of willing, waiting, weary men who have been drawn into the metropolis by the false idea that private practice could be here pursued excepting among the very wealthy!

RECENT HAPPENINGS BEARING UPON THE LEPROSY QUESTION.

During the past fortnight there has appeared an unusual amount of leprosy literature in the public prints of this city. It is announced by cable that Dr. Besnier has returned to Paris from the leprosy congress in Berlin, and again startled his compatriots with a report that there are at least one hundred lepers abroad in the French capital. This, of course, has nothing very startling about it, since the same announcement was made over a year ago. New Yorkers seem to be developing a taste somewhat similar to that of the Parisians for shocking and being shocked. A year ago the health board of this city tried the effect upon the public of allowing its small colony of lepers to escape from North Brothers Island into the city. The shock produced was not marked, but seems to have been sufficient to encourage the board to perpetrate the farce a second time. We expressed our opinion of the whole procedure at the time, as well as of the board's attempt to secure the County Medical Society's backing for its act. Humanity would seem to demand that this class of patients be treated with more consideration and not run down like beasts, to be confined until the time comes around to turn them loose for another grand leper hunt.

If the health board has no jurisdiction over the leper, why does it not leave him alone?

In the Sunday edition of one of our most prominent daily journals, Dr. Fox adds to the health board's attempted shock by giving, in a half-page article, a detailed account of New York's lepers. The number at large is put down at twenty-five. He says that the disease is not contagious, and dilates upon the attractiveness of our climate and hygienic surroundings, under whose influence, combined with certain drug treatment, foreign lepers improve and even get well. The Skin and Cancer Hospital, he says, receives and keeps lepers for treatment. The writer invites attention to moral treatment of the patient as a therapeutic agent which is commonly overlooked. An appeal is made for the establishment by some wealthy individual of a special hospital for the study and care of leprosy cases.

In a reply to Dr. Fox's article, published in the same paper, Dr. Ashmead maintains the proven contagiousness of the disease, and quotes the conclusions of the Leprosy Congress, whose sessions have just closed in Berlin, in support of this view. The bacillus, he says, exists only in man, and treatment so far is merely palliative and not curative. Hansen's recently expressed opinion is cited, to the effect that if measures of isolation were universally adopted leprosy would be quickly eradicated. He asks Dr. Fox how leprosy can be regarded as a disease of insalubrious surroundings and filth if, as the latter has just claimed, it exists in this city in subjects close to the four hundred.

The most recent report of an epidemic of leprosy comes from far-off Tiflis, where the disease is reported to be assuming alarming proportions.

However, the practical and, it seems to us, important point to be determined for this country is whether we are destined to become burdened by the scourge. Is it not possible to make and maintain this a leper-free country, or rather, was it not possible some years ago when the Medical Record pointed out the dangers and undesirableness of fostering leprosy? We believe that even to-day, despite the reported increase, proper measures, such as have already been advocated in these columns, would in time save us from this preventable and most assuredly unwelcome disease.

News of the Week.

An Editor's Misfortune.—Dr. George Wilson, of Oxford, the editor and owner of the *Medical Magazine*, has disappeared, leaving behind many liabilities and no assets. He started the *Medical Magazine*, a most readable publication by the way, about six years ago, on borrowed capital. The venture ruined him, for the magazine was not of the character to win a large circulation at once, and notes fell due before subscriptions came in.

Death of Dr. Charles H. Avery.—Dr. Charles H. Avery, a practising physician in this city for thirty years and the secretary of the Medical Society of the County of New York, died on Tuesday night at his home, No. 238 East Eighteenth Street. He was born in Perryville, Madison County, N. Y., sixty-three years ago. He was graduated from the Long Island College Hospital and commenced his practice in a small village in the oil region of Pennsylvania. From there he came to this city. A chronic disease from which he had suffered for many years was the cause of his death.

Permanganate of Potassium in Opium Poisoning.—Surgeon-Major J. D. Reckitt reports, in the *British Medical Journal* of October 9, 1897, a case of a man, twenty-five years old, who had drank two ounces of laudanum. Permanganate of potassium, in five-grain doses repeated several times, was administered, and the man made a good recovery. He was seen too late to permit of removal of the poison from the stomach, so that the entire amount taken was absorbed.

In Memory of Benjamin Ward Richardson.—A subscription list was opened some time ago to endow a bed in the London Temperance Hospital as a me-

morial of the late Sir B. W. Richardson, who was one of the attending physicians to the hospital. The amount desired is one thousand pounds, but as yet only about one hundred pounds has been raised. Sir Benjamin was an ardent worker in the cause of total abstinence, having been perhaps the most active member of the British Medical Temperance Association.

The Alvarenga Prize of the College of Physicians of Philadelphia.—The next award of the Alvarenga prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about $180, will be made on July 14, 1898, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the secretary of the college on or before May 1, 1898. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. The Alvarenga prize for 1897 was awarded to Dr. Joseph Collins, of New York, for an essay entitled "Aphasia."

American Students in Germany.—Referring to the difficulties the German authorities have placed in the way of foreign medical students, the editor of the *Columbus Medical Journal* remarks: "We admire the position taken by our German brothers in attempting to annihilate the fad that has swept over this country like a tidal wave, to the effect that no medical student had completed his education without having attended some medical school in Berlin, Germany; and still worse, if he attended some foreign school, if it were but for two or three weeks, that he was far superior to his brother practitioner who had remained in the land of his nativity and studied hard in schools of equal facilities in America. We do not blame the Germans for drawing the line on these half-educated medical students and practitioners who rush into their schools from America, as it is certainly a nuisance, and detrimental to the advanced standing of the German schools and reflects no credit on the medical profession of the United States. We are a firm believer in utilizing the facilities offered for medical as well as other forms of education in America before we seek admission to foreign schools. It is a fad which deserves severe criticism, and we hope our ambassador will sustain the action of the German government in this direction."

The Physical Condition of Applicants for Enlistment in the Army.—According to the recently published report of Surgeon-General Sternberg, of the United States army, the total number of men examined for enlistment during the calendar year was 14,659, of whom 8,654, or 590.35 per 1,000, were accepted; 5,448, or 371.65 per 1,000, were rejected on primary examination; and 557, or 38 per 1,000, subsequently declined enlistment. The ratio of accepted men per 1,000 of those examined was considerably larger than in previous years. This must be regarded, says General Sternberg, as meaning that better men physically are coming up as candidates for examination for enlistment. The rejections among the colored men were relatively somewhat more numerous than among the white candidates for enlistment—379, compared with 371.04 per 1,000 respectively. Although the foreign-born recruit has the advantage over the native white in weight and chest measurement, the latter is taller by one-half inch.

English Medicines in Germany.—At the recent meeting of the German Apotheker-Verein at Strasburg, Dr. Tschaschel, of Wulsdruff, brought before his fellow-members the question of the importation of foreign medicines. He specially referred to the manufactures of an English firm, which had recently distributed among medical men a pamphlet in which the properties and uses of the firm's preparations were described. He moved that the executive of the Verein should take steps to prevent the introduction of these articles into pharmacies, and explain the state of the case to medical men. He said that he had bought a bottle containing twenty-five morphine tablets, which professed to contain one centigram of morphine hydrochloride in each. The tablets weighed five centigrams, and therefore it was clear they contained some other substance besides the alkaloid, so that the pharmacist could not take any responsibility for them. A long discussion followed, and in the course of the discussion it was mentioned that the Frankfort pharmacists put a red wrapper on the boxes containing the tablets, on which was printed a statement that they were not responsible for the contents. A pharmacist said that in his town they had informed the physicians that they made such preparations themselves, and would dispense the ready-made one only if they were expressly ordered. A druggist of Hamburg said the medical society of that city had issued a circular to the physicians there, pointing out that if they prescribed packed medicines they took a special risk, for the apothecary who dispensed them could not tell what such medicines contained.

Typhoid Fever in Ireland.—A serious outbreak of typhoid fever is reported to have occurred at a suburb of Belfast, and it is feared the disease will become epidemic in the city.

A Question of Sanatorium Rights.—A case involving the right of the proprietor of a mineral spring to empty its waters into a stream flowing across the land of another, after the water has been used for bathing-purposes, has recently been decided by the supreme court of Indiana. The defendants were the proprietors of a medicinal spring and had established a sanatorium. After being used for bathing-purposes the water was allowed to flow into a stream which crossed land not belonging to the owners of the mineral spring. One of the adjoining landowners sued the sanatorium managers, asking that they be restrained from permitting to flow into the stream any water which had been used in bathing persons afflicted with syphilitic or other disorders. The court granted the injunction, but on appeal the supreme court set it aside and

directed judgment for the defendants, on the strength of the evidence offered that, although the water had an unclean and repulsive appearance, it was not poisonous or injurious to live stock or human beings.

Football Barbarism.—At a game of football between the University of Georgia and the University of Virginia on October 30th, one player was killed and another seriously injured. The authorities at the Georgia State University have not abolished the game, and a bill prohibiting football in the State, which failed to pass the last session of the legislature, will be reintroduced this year, and will doubtless pass this time by reason of the sentiment aroused by these casualties.

Yellow Fever.—The beginning of the end of the yellow-fever visitation in the South is at last in sight. There has been more or less cold weather throughout the affected region, and in many parts of Louisiana sharp frosts are reported. Even when the appearance of frosty weather is delayed, the history of previous epidemics shows that the fever decreases with the general lowering of temperature always obtaining at this time.

A Colored Woman Physician was among the applicants for a license to practise medicine at Atlanta, Ga., recently. She is a graduate of the Woman's Medical College in Philadelphia.

The Pray Medical Prize Essay.—The late Dr. Thomas J. W. Pray left to the New Hampshire Medical Society a sum of money making possible the offering by the society of a prize of $100 for the best original essay upon some medical topic, written by a member of the society. Essays must be in the hands of the trustees on or before April 1, 1899. Each essay must bear some signature, and be accompanied by an envelope marked by the same signature and containing the name of the writer. This envelope is not to be opened unless the essay gains the prize. The name of the successful writer will be announced at the annual meeting and the prize will then be awarded; and if the trustees so direct the paper shall be read before the society and published in the annual report. The essays are to be legibly written or typewritten, and not to be less than four thousand words and not more than ten thousand words in length. If no paper is presented which the trustees deem worthy of the prize, no award will be made.

Obituary Notes.—Dr. George F. Matter died at Shenandoah, Pa., on October 22d, of cerebro-spinal meningitis, at the age of fifty-seven years. He served as a hospital steward during the war of the rebellion with the two hundred and tenth regiment, Pennsylvania volunteers, and he was graduated from Jefferson Medical College in 1866.—Dr. Frank L. Sallade died at Womelsdorf, Pa., on October 24th, in consequence of a self-administered overdose of morphine and atropine taken unintentionally. He was fifty-three years old and a graduate of Jefferson Medical College. In addition to the care of a large practice, he was besides an accomplished artist.—Dr. A. L. Hummel, of Hummelstown, Pa., died at Denver, Col., October 26th, at the age of forty years. He was a graduate of the University of Maryland, and for a number of years was connected in different capacities with various medical journals.—Dr. Stephen Parsons died at Chester, Pa., on October 27th, at the age of eighty years. He was graduated from the Baltimore College of Dental Surgery in 1846, and from the Philadelphia College of Medicine in 1849.—Dr. Clarence G. Abbott, of Woodbury, N. J., died at Easton, Pa., on October 27th, at the age of thirty-eight years, after a long illness.—Dr. William Henry Corse died at Philadelphia, on October 28th, at the age of seventy-seven years. He was a graduate of the Philadelphia College of Pharmacy and also of the medical department of the University of Pennsylvania. Until eight years ago he was engaged in the practice of his profession at Wilmington, Del.—Dr. Alexander Milton Ross, of Montreal, well known as a naturalist of high order, died in Detroit on October 28th. He was born in Belleville, Ontario, in 1832. When a lad he came to New York and worked as a compositor on a daily paper, and while still at this work studied medicine under Valentine Mott, and received his degree in 1855. He was a surgeon with Walker's filibusters in Nicaragua, in the Union army during the civil war, and in the Mexican army under Juarez. After his return to Canada he became a member of the College of Physicians and Surgeons of Quebec and Ontario, and was one of the founders of the society for the diffusion of physiological knowledge in 1881. He then began to collect and classify the fauna and flora of that country, a work that had never before been attempted by a native. He collected and classified hundreds of species of birds, eggs, mammals, reptiles, and fresh-water fish, thirty-four hundred species of insects, and two thousand species of Canadian flora. Among his published works were: "Birds of Canada" (1872); "Butterflies and Moths of Canada" (1873); "Flora of Canada" (1873); "Forest Trees of Canada" (1874); "Ferns and Wild Flowers of Canada" (1877); "Mammals, Reptiles, and Fresh-Water Fishes of Canada" (1878).—Mr. Hermon M. Atwood, vice-president of the New York College of Pharmacy, died at his home in this city on October 29th. Mr. Atwood was born in Hartford fifty-eight years ago. He came to this city in 1858, and was one of the oldest druggists in the city at the time of his death. In 1870 he became connected with the New York College of Pharmacy, and in 1882 he was elected a member of the board of trustees.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending October 30, 1897. October 27th.—Medical Director W. K. Van Reypen detached as member of the board of inspection and survey and made chief of the bureau of medicine and surgery. October 28th.—Assistant Surgeon T. W. Richards detached from the *Maine*, ordered home to Washington, and granted two months' leave.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Annual Meeting, October 25, 1897.

LANDON CARTER GRAY, M.D., PRESIDENT.

Report of the Treasurer.—DR. JOHN S. WARREN read his report. The disbursements had been $6,509.43, and the balance in the treasury was $821.39.

Report of Committee on Hygiene.—DR. W. H. KATZENBACH presented in this report an account of what had been done regarding the action of the board of health requiring notification of cases of tuberculosis. The details had been presented to the society last March.

Report of the Counsel.—DR. SENECA D. POWELL, in calling attention to this report, said that some idea of the work done by the legal counsel of the society might be gained from the statement that since the new law had been in operation one hundred and twenty-four arrests had been made for illegal practice of medicine, and seventy-six convictions had been secured. The aggregate fines imposed amounted to $5,115.

Report of Committee on Ethics.—DR. ARTHUR M. JACOBUS, after presenting a summary of the work done by this committee during the year, suggested that, in view of the fact that the rules of ethics of this society did not harmonize with those of the State society, and the rules concerning enforcement of discipline were not clear, this matter should be referred to the incoming comitia minora, and that power be given the comitia minora to enforce minor degrees of discipline without publicity and without appeal to the society.

DR. N. E. BRILL moved that the report be referred to the incoming comitia minora for action. Carried.

Committee on Prize Essay.—DR. WILLIAM STEVENS stated that the committee had received and carefully examined three essays. The committee recommended that the prize be awarded to Dr. Heinrich Stern, the author of the essay entitled "A Contribution to the Pathogenesis and Etiology of Diabetes Mellitus."

Amendments to the Bylaws.—In order to prevent unusual and unwarranted inroads on the treasury, the bylaws were so amended as to require the comitia minora to pass upon proposed appropriations and report to the society.

Committee on Legislation.—After a prolonged and somewhat heated discussion as to whether medical legislation in Albany could be best attended to by the board of censors, as heretofore, or by the proposed committee on legislation, the bylaws were amended so as to make the latter a standing committee, working under the direction of the comitia minora.

The Case against Dr. Van Fleet Non-Suited.—DR. D. B. ST. JOHN ROOSA announced that the president of the society and some other members of the profession had attended the trial in the United States court. It would be remembered that the society had voted to sustain Dr. Van Fleet. After hearing the plaintiff's testimony and the argument made by the society's counsel, the judge refused to allow the case to go to the jury; in other words, the court had practically decided that the society's meeting-place was a place of privilege, and that if reporters came there it was at their own peril.

Vote of Thanks to Dr. Van Fleet.—On motion of DR. ROOSA, the society tendered to Dr. Van Fleet a vote of thanks for his courageous defence of its rights at great trial and inconvenience to himself.

Resolution of Sympathy for Dr. Avery.—DR. E. H. GRANDIN offered the following resolution, which was unanimously adopted:

"*Resolved*, That the Medical Society of the County of New York sympathizes deeply with Dr. Avery in his illness, and expresses the hope that before long he will again be able to preside as secretary with his accustomed fidelity over the meetings of this society."

Election of Officers.—*President*, Dr. Arthur M. Jacobus; *First-Vice-President*, Dr. Nathan E. Brill; *Second Vice-President*, Dr. B. Farquhar Curtis; *Secretary*, Dr. Charles H. Avery; *Assistant Secretary*, Dr. William E. Bullard; *Treasurer*, Dr. John S. Warren; *Censors*, Drs. Landon Carter Gray, Walter Lester Carr, Herman L. Collyer, Floyd M. Crandall, and Frank H. Daniels.

A Contribution to the Surgery of Empyema, with the History of an Illustrative Case.—DR. CHARLES E. LOCKWOOD read a paper on this subject. After referring to the histology of the pleural sac and to the different varieties of pleurisy, he said that it was now believed that every empyema was due to microbic invasion of the pleural cavity. Statistics seemed to show that fifty per cent. of all cases were caused by streptococci, twenty-five per cent. by pneumococci, and the remaining twenty-five per cent. by several forms, of which tuberculosis was relatively the most common. In children the pneumococcus caused from sixty to seventy-five per cent. of all cases, the remainder being mostly the result of infection with streptococci or staphylococci. In all the different varieties of purulent pleurisy the treatment consisted of the immediate evacuation of the pus. There were four methods of accomplishing this, viz.: (1) Aspiration, (2) simple incision, (3) thoracotomy with resection, and (4) siphon drainage. Dr. L. E. Holt had collected one hundred and twenty-one cases in which aspiration had been done. Twenty-three of the patients were cured, six died, and ninety-two came to further operation. This gave twenty per cent. of cures; hence this operation was applicable in certain cases, and was worthy of trial in the mild cases and in those in which delay was not dangerous. It should not be done more than once. In children it had been found relatively more successful, probably because the empyemas of early life were usually produced by the short-lived and comparatively non-virulent pneumococcus. In some cases of tuberculous empyema which were latent, aspiration would seem to be most conservative. One observer had reported ten successful cases in adults suffering from pneumococcus empyema. Simple incision would seem to be especially applicable when general anæsthesia was not admissible and in the case of children. Morrison had given a series of thirty-four cases in which this operation had been done with only two deaths and an average duration of treatment of thirty-two days. Local anæsthesia by one-per-cent. solution of cocaine could be used. Thoracotomy with resection, in all cases not included in the cases heretofore mentioned, had seemed to give the most favorable results. In one hundred and seven cases in which incision had been done, there were sixty complete cures, or fifty per cent., and twelve fistulæ; while seventy-nine cases of resection gave fifty-five complete cures, or seventy per cent., and six fistulæ. The most important point was to secure thorough drainage, and if possible to avoid irrigation, which seemed to be dangerous and liable to prolong suppuration. From 1876 to 1880 all empyemas treated at one of the German clinics had been irrigated daily for an average period of one hundred and one days, with thirty per cent. of complete cures. From 1880 to 1885 only one irrigation was given, and the average duration was eighty-four days, and there were seventy per cent. of cures. From 1885 to 1890 irriga-

tion had been discarded entirely except in putrid cases, and the duration was fifty-two days, and there were ninety-six per cent. of cures. Siphon drainage consisted in tapping the chest with a large trocar, and after drawing off most of the pus inserting a soft catheter with a rubber tube attached, the distal end of this tube dipping into an antiseptic fluid contained in a bottle. The method was chiefly applicable to the chronic tuberculous empyemas and perhaps to the pneumococcus empyemas of adults.

A Septic Fever Controlled Only by Antiseptic Irrigation.—Dr. Lockwood then reported the following case: C. B——, sixteen years of age, a student, had lost three brothers, one sister, and one maternal uncle from pulmonary tuberculosis. His own health had previously been good. On December 10, 1896, he had a chill, and then the temperature rose to 104.8° F., the pulse to 108, and the respirations to 28. Examination showed an acute pneumonia of the lower lobe of the right lung and friction sounds indicating involvement of the pleura. For six days the morning temperature was 102° F., and the afternoon temperature 103° F. On the tenth day it was normal at 3 A.M., but had reached 100° F. at 3 P.M. For the next few days the temperature was normal in the morning and slightly elevated in the afternoon. Physical examination at this time showed pleurisy with effusion. On the seventeenth day the morning temperature was 99° F., and the evening temperature 103° F., and the patient suffered considerably from difficult breathing and pain in the right side. On the following day, December 28th, the speaker had seen him for the first time, and had aspirated the chest between the fourth and fifth ribs on the right side, drawing off twenty ounces of laudable pus. The next day the temperature was normal at 9 A.M., and 101° F. at 6 P.M. Examination of the sputum by Dr. Harlow Books showed considerable numbers of the diplococci of pneumonia, but no tubercle bacilli. On January 3d the boy was again aspirated between the fifth and sixth ribs, and twenty ounces of pus were removed. On January 5th an incision was made by Dr. W. T. Bull on the right side in the axillary line, over the eighth and ninth ribs, and portions of these ribs, one and one-half inches long, were removed. When the pleural cavity was opened a large quantity of fibrin and pus escaped. The cavity was irrigated with sterilized water and two large rubber tubes were inserted and fastened. To guard against danger from breakage, silk was passed through from end to end. The next day the morning temperature was 98.4° F., and in the evening it was 99.8° F. The dressings were changed three times in twenty-four hours. On January 16th the tubes were removed and the wound was irrigated, for the first time since the operation, with sterilized decinormal salt solution, and the tubes were cleaned and reinserted. For about one week the irrigations with sterilized water were done once a day, and it was then noted that the evening temperature seemed to have been higher since these irrigations had been used. However, they were continued for about another week. The patient now had night sweats, an anæmic murmur over the base of the heart, and slight œdema of the lower extremities. Dr. Janeway then saw the case. He expressed the opinion that the fever was septic, and recommended irrigation of the chest cavity with one drachm of carbolic acid to sixteen ounces of water, care being taken to measure the quantity introduced and removed, so as to make it certain that none of the solution was allowed to remain behind. The temperature was 103° F. at that time. On the following day, February 4th, the temperature remained normal all day and the irrigation was repeated. It should be noted that the septic fever prevailed about one month, and that it did not abate until the use of the weak carbolized solution. By February 18th the patient was able to take a short ride, and on April 26th the dressings were discontinued. On May 15th careful measurements of the chest were taken, and it was found that the difference between the two sides on inspiration was five-eighths of an inch, and on expiration one-fourth of an inch—a good showing considering the severity of the case. Great care was taken throughout the tedious convalescence to secure the highest possible nutrition. That there was a perforation in the lung was shown by the fact that the patient could breathe through the opening in the chest when the nostrils and mouth were closed, and it was probable that infection occurred through the introduction of micro-organisms in this way from the outside air.

Do Not Neglect Exploratory Puncture.—Dr. Beverley Robinson said that he had had under his care at St. Luke's Hospital last spring a little child who had been operated upon for pyothorax. The child was here this evening. He came in from the Orphan Asylum with the history of a pneumonia preceding his admission by some weeks. From the appearance of the child and from the physical examination it was supposed that the boy was possibly suffering from some malignant disease of the chest. Puncture of the chest was made, and purulent fluid withdrawn. A day or two later the rib was resected. After about two months he left the hospital cured, and was now in good condition.

With regard to the treatment of empyema, the speaker said that his individual opinion was that it was a mistake to allow ourselves to believe that mere puncture of the chest wall and withdrawal of the fluid one or more times was the best treatment, as he had found that it was not usually curative. Cases so treated usually required subsequent operation, preferably by resection of one or more ribs. The relative increase in surgical shock from resection of a rib, as compared with simple incision, he believed to be slight and unimportant. Simple aspiration was tedious and inefficient, and noncurative in a large number of cases; moreover, it did not, as a rule, allow of such efficient drainage as when the rib was resected. It was a mistake to attempt to operate on children under local anæsthesia, if for no other reason than the bad mental impression created. The only real risk attendant upon the operation of opening the chest and resecting a rib was that associated with the anæsthetic. He did not think that in the diagnosis of empyema we had any right to rely upon the general symptoms; unless we resorted to exploratory puncture we would almost certainly make grievous mistakes. It was a common but very erroneous belief that pleurisy was apt to change from the serous to the purulent form. Acute broncho-pneumonia in childhood was the most frequent cause of empyema in children, and, whenever there was any reasonable doubt during the course of the disease or following it, resort should be had to puncture to establish the diagnosis. There should be no danger from puncturing the lung with an aseptic needle. He had never seen any harm from such punctures when made with proper precautions. It was very difficult to recognize an empyema in connection with a pneumonia during the acute process; it was not so difficult after the period of crisis. He believed that it was bad practice to-day to irrigate the pleural cavity after an operation for empyema, unless we were compelled to do so by a fetid discharge, with or without rise of temperature, or by the presence of clots in the pleural cavity. Care should be taken, if a poisonous antiseptic fluid was used, that it should not be allowed to remain in the cavity. Personally he would prefer to use some non-poisonous antiseptic, such as boric acid or Labarraque's solution. Free drainage was, of course, all-important, and as it was difficult if not impossible in many children to secure this by simple incision, the advantage of resection of a rib was obvious. In an adult whose

pleural cavity had contained fluid for a considerable time it was difficult to see how the chest wall could retract sufficiently to allow healing of the abscess cavity unless a rib was resected.

Treat Pyothorax Like Any Other Abscess.—Dr. John B. Walker said that it seemed to him that the treatment of empyema should be the same as the surgical treatment of an abscess in any other locality. As an ordinary abscess was not treated by aspiration, it was not advisable to aspirate an empyema. The simple incision had the disadvantage of making it quite difficult to keep the wound sufficiently open to allow free drainage, and hence he favored resection of the rib. The tubes used should be as large as possible. In the case reported in the paper the tubes were about one-half inch in diameter, and the dressings were changed as often as they became moist. The effect of the weak carbolized solution upon the suppurative process had been exceedingly satisfactory.

Better do Too Much than Too Little.—Dr. Harry R. Purdy said that a rather extensive experience among children had taught him that empyema was not an uncommon disease in early life, and also that there was no other disease that was so commonly overlooked. If after scarlatina, diphtheria, measles, and pertussis a careful physical examination was made, these mistakes would not be so frequent. The most important physical signs were entire absence of vocal fremitus, immobility of the affected side, and the result of light and skilful percussion. He could not agree with the reader of the paper in calling any case of empyema "mild." In his opinion delay was always dangerous, and common sense would seem to indicate that the pus should be promptly evacuated by the resection of one or more ribs. Why waste time on the minor operations, when seventy-five or eighty per cent. of cures could be obtained by this method? The dread of giving an anæsthetic was not a proper excuse for delaying such an operation. He had seen children so weak that they had to be carried around on a pillow stand the anæsthetic perfectly well. He recalled one case in which the mother would not consent to an operation, and the child got well owing to the fortunate circumstance that the pus discharged through a bronchus. The operation of simple incision was not a good one for children, because of the narrowness of the intercostal spaces. The operation of resection should not be confined simply to so-called cases of empyema, for at times the so-called serous effusions did certainly become purulent. In cases of protracted pleurisy or of frequent reaccumulation of the fluid, he would, with Koplik, advise resection. There was more likelihood of failure in these cases from doing too little than from doing too much. In illustration, he cited the case of a baby who had been brought to him one year ago in a feeble condition. It had apparently suffered from empyema for many weeks, and was also enfeebled from pertussis. About two-thirds of a pint of pus was removed by operation, and with very marked improvement in the general condition. The discharge was continuous, but the mother would not consent to another operation. He had therefore dressed the child faithfully for a year, and then the little one had been admitted to St. Mary's Hospital. Here she had been operated upon again on July 27, 1897, an incision being made along the old sinus. The fourth, fifth, and sixth ribs, with portions of the seventh, were removed, together with the periosteum and parietal pleura. The latter was enormously thickened. The wound was packed, and a week later the child was sent to the country. Here chicken-pox developed. A sinus was left, and a week ago a further resection was done. The present condition of the child was quite good, considering the history of the case.

Remove Coagula through a Pleural Speculum.—Dr. Carl Beck said that several years ago he had presented to this society a paper on this subject. Fifteen years ago he had recommended resection of the rib for all cases of empyema without exception, and had been bitterly opposed by distinguished members of the profession. It was therefore with great satisfaction that he observed this evening the harmony of opinion regarding the advisability of treating these cases by resection, incision, and drainage. There was no reason why such cases should not be treated on the same principles as governed the modern surgeon in the treatment of any abscess. In the treatment of an abscess the surgeon would not only secure a large opening and free drainage, but he would scrape the lining membrane and remove the necrotic tissue and the attached microbes. He would not think of using irrigation, for after such careful treatment it would not be necessary. Irrigation of the necrotic membrane meant irrigating dirt; it was better to remove the dirt. In cases of empyema there were often very large solid masses—sometimes as large as a man's fist—and he could not understand how such cases could be successfully treated by aspiration or even by simple incision. It was evident that these masses under such circumstances must be left behind to dissolve and escape slowly in the discharge. It seemed to him that in the case reported in the paper there must have been necrotic membrane which had been gradually washed out with the irrigations. He was not inclined to think that it was the carbolic acid that should be credited with the improvement, but rather the mechanical effect of the irrigation. If more attention had been given to the removal of necrotic tissue at the beginning, the history of the case would have probably been different. He advised the use of a "pleural speculum," with the aid of which it was easy to see the fibrinous clots and remove them. Only at this time was it necessary to irrigate the cavity. In recent years he had preferred to pack the cavity with iodoform gauze, packing it tightly for two or three days, and after this using a loose packing. Since the adoption of this treatment he had but rarely seen death occur in an uncomplicated case. He preferred to call these cases "pyothorax," because empyema referred to collections of pus, without designating the locality.

Remove the Cause by the Use of Strong Carbolic Acid.—Dr. Seneca D. Powell said that a pus pocket was a pus pocket, no matter where it was found or whether in a child or in an adult. The two important points in the treatment were (1) the establishment of perfect drainage, and (2) the removal of the cause of the infection. In order to remove the cause, one should use a germicide which could be employed safely in a strength that would be efficient. He claimed that the only germicide fulfilling these conditions was carbolic acid. Pure carbolic acid could be applied to one's hands for a moment, and then the action of the acid could be limited by washing in alcohol. He would advise swabbing out the cavity with pure carbolic acid after having curetted away the necrotic tissue, and then packing the cavity with gauze. If good drainage could be obtained by an incision, then all was accomplished that was necessary. Except in long-standing cases, he thought it was but rarely necessary to resort to any extensive resection.

Dr. Lockwood, in closing the discussion, said that he was very glad that the discussion had emphasized the fact that the best treatment was the recognized surgical treatment for abscess. It was also well to remember what Dr. Robinson had said about the great importance of exploratory puncture in establishing a positive diagnosis.

The Clinical Importance of Impacted Pelvic Tumors.—Dr. Henry C. Coe read only a portion of this

paper, because of the lateness of the hour. He said that the subject was one which really concerned the general practitioner. Pelvic neoplasms often remained unrecognized, and the pressure symptoms to which they gave rise were often misinterpreted. A small tumor, from the size of an English walnut to that of a baseball, might cause no special symptoms until it became impacted in Douglas' pouch or surrounded by inflammatory exudate. In the latter case the symptoms were often quite marked, and the patient's general health would probably suffer greatly. The symptoms produced by impacted pelvic tumors were often referred to the pelvic and abdominal viscera, and the physician was thereby misled. The amount of pain was frequently entirely out of proportion to the size of the growth, and distant organs might be affected—as, for instance, through pressure on the ureters. When such tumors complicated pregnancy, they deserved the serious attention of every practitioner. The importance of intrapelvic tumors varied according to their anatomical character, their mode of development, and their locality. Thus a rapidly growing cystoma would possess more significance than a small subperitoneal fibroid. Again, a tumor impacted in Douglas' pouch possessed more importance, from a clinical standpoint, than an intraligamentous growth of the same size and variety. For practical purposes, as the tumors impacted in Douglas' pouch were the most common, they alone would be considered.

Reflex Pressure Symptoms Liable to Mislead.—The most obvious effects of such tumors were those resulting from pressure. The uterus, from its mobility and anatomical relation to the neoplasm, was apt to be first affected. Procidentia, occurring in a young woman with a good pelvic floor, should be regarded as probably an indication of pressure from above. The rectum would always be more or less encroached upon by growths in the cul-de-sac, and the bladder naturally shared in the pressure effects. Still more serious were the results of direct pressure of fibroids in the lower uterine segment. The results of pressure on the intrapelvic portion of the ureter were well known. The general venous congestion of the pelvic organs in connection with impacted tumors was frequently noted on the operating-table. Varicose veins of the labia and hemorrhoids presented external evidence of obstruction to the circulation. The distinction between an impacted and an adherent tumor was important. When the neoplasm was attached to the uterus and rectum, the pressure effects were exaggerated. A small tumor, which previously gave rise to no symptoms whatever, might, under the influence of pregnancy, not only increase in size, but contract adhesions which would permanently imprison it in Douglas' pouch. A case was cited in which a cystic tumor complicated pregnancy. He had been able to push it up out of the way of the descending head and to deliver easily, but in a second pregnancy the tumor was found to be impacted, and it became necessary to perform abdominal section. Colicky pains and pains in the appendical region were common in connection with extensive intestinal adhesions. In two cases of sudden dislocation of subperitoneal fibroids, seen in consultation, the symptoms exactly simulated those of a ruptured ectopic sac. Obstruction to the passage of fæcal matter, tenesmus after defecation, and a sensation as if the lower bowel had not been completely emptied were all suggestive of pressure on the lower bowel. More or less complete obstruction of the lumen might be indicated by the small size of the fæcal masses. One might be frequently led to suspect the presence of an intrapelvic growth in young girls by persistent hemorrhoids, which could not be explained in any other way. The bladder symptoms were sometimes the only evidence of a pelvic growth encroaching upon the pelvic organs. In the absence of satisfactory evidence of disease of the genito-urinary tract, the possibility of pressure upon or dislocation of the bladder should be borne in mind. Rectal palpation should never be omittted; in young girls it alone was permissible, and fortunately the information thus obtained was often conclusive. If the examination were not at first entirely satisfactory, it should be repeated under an anæsthetic. The present comfort and the future safety of the patient had both to be considered. Constant and severe pain, steadily increasing in spite of local treatment, was a sufficient indication for operative interference. Marked pressure symptoms, in connection with the steady growth of a tumor, were an ample excuse for operation. Only an imperfect idea of the extent of pelvic adhesions could be gained through a vaginal incision, and the operation could be done more thoroughly and intelligently through a free abdominal incision.

Impacted Tumors Complicating Pregnancy.—When impacted tumors complicated pregnancy they were especially dangerous, because they gave rise to no symptoms directing the attention of the patient or of her physician to the condition in the early months. This should emphasize the importance of a routine examination during pregnancy, even though the physician had previously attended the patient in confinement. Before the seventh month, if repeated and careful attempts to dislodge the mass failed, the patient being in the knee-chest position and if necessary under anæsthesia, the question of interference at once arose. Previous to the fourth month the induction of labor might be elected. After four and one-half months he would insist upon the choice of cœliotomy, even though the tumor was small and accessible through the vagina. Should premature delivery occur, no harm would result. He disliked the vaginal route for the removal of growths in pregnant women. The frequency with which dermoids became impacted in the cul-de-sac, and their liability to undergo changes, made it imperative that they should not be subjected too long to pressure by the uterus. Induction of labor offered a little more chance to the child, and exposed the mother to practically the same risk as at term. Cœliotomy must eventually be performed, because of complications resulting from mechanical injury to the tumor. The management of labor at term, when complicated by impacted tumors, was a purely mechanical problem. Sometimes the sac could be diminished in size by tapping or even by incision. In the presence of an impacted solid growth, one must be governed by its size and relations to the birth canal. The performance of cœliotomy did not necessarily imply Cæsarian section, as the tumor could be removed by abdominal section and the child delivered through the natural passages.

Place the Pregnant Woman under Medical Supervision.—Dr. Edward H. Grandin accepted the position taken by the reader of the paper. The first thought suggested to him by the paper was the necessity for examining a pregnant woman as early in pregnancy as possible. He believed that the medical profession had become convinced of the necessity of this, but it yet remained to educate the laity to the fact that the interests of both mother and child demanded that the pregnant woman should place herself under the care of her physician as soon as she was aware that she was pregnant. It was surprising how far a woman might be advanced in pregnancy before a tumor would become impacted; hence the great importance of its early recognition, that such a catastrophe might be averted. In his opinion it was as safe at the present time, even in the early months of pregnancy, to remove the tumor as to interfere with the progress of gestation. It was not traumatism that did

damage, but dirt. He did not think we were called upon to interrupt the progress of gestation in any case when a properly performed abdominal section would enable one to remove the growth. He would always prefer attacking such a tumor from above, except when he was satisfied that it was really a pus collection, in which case the vaginal route was the proper one. Through the abdominal opening the operator could best determine the relations of the tumor, the extent of the peritoneal adhesions, and also whether or not the appendix vermiformis was affected—a not uncommon complication. Later on in pregnancy, unless the symptoms were urgent, as the chances were in favor of a radical operation, it was better to postpone the operation, if possible, until the child was viable. The vaginal route should never be selected for such an operation, unless pus was present.

Does the Gravid Uterus Press upon the Ureters?—Dr. Freeland Barbour, of Edinburgh, being invited to participate in the discussion, said that he desired to emphasize the importance of the statements made regarding examination through the vagina and rectum in determining the position and fixation of these tumors. He related the two following cases:

The first case was one of a dermoid tumor impacted in the pelvis. It had given rise to no symptoms until the woman had become pregnant. At the time he had seen her, the symphysis and the tumor were only about two inches apart; the tumor was embedded in the cellular tissue and could not have been taken out without a very serious operation. The patient was unwilling to be exposed to such a risk, and therefore labor was induced at the seventh month, and, by turning, a living child was delivered. In the Edinburgh school, he said, they did not attach so much importance to the induction of premature labor as had been intimated in the remarks made this evening. This patient recovered perfectly, and had since been quite well.

The other case had impressed upon his mind the great seriousness of these tumors through implication of the ureters. He would like to know what theory those present entertained regarding the manner in which the ureter was affected. His own theory was that the tumor simply pushed the ureter aside in the same way that the pregnant uterus did, and that when pressure occurred it was due rather to inflammation. He knew, of course, that some had held that the pregnant uterus compressed the ureters at times, but some years ago he had made a number of dissections and had carefully traced the course of the ureters, and in this way had satisfied himself that the risk of the ureter being compressed between the bony walls of the pelvis and the gravid uterus was very small. In the case referred to there was also a hydronephrosis, and on tracing the ureter it was found that the ureter was completely embedded in and occluded by cicatricial tissue, which had developed in connection with the growth of the tumor.

More Tumors Imprisoned than Impacted.—Dr. A. Palmer Dudley said that the clinical importance of impacted pelvic tumors grew with our knowledge of pelvic disease, and the clinical importance of the same, with respect to the patient, depended upon our ability to explain that condition properly to her. He believed that more pelvic tumors were found imprisoned than impacted. It was sometimes very difficult to convince the patient that distant reflex pains had their origin in pelvic disease. One of the most important of such reflex affections was neuralgia about the eye. Any condition which interfered with the diaphragmatic action of the pelvic floor became just as dangerous to the patient as an impacted tumor. The retroflexed uterus might become an impacted tumor. Our object should be carefully to differentiate between the different growths, and in doing this we should take into consideration the age of the patient. In probably nine out of ten cases the abdominal route was the better one for both the patient and the operator.

Pressure on the Ureters Leads to Serious Disease.—Dr. George W. Jarman said that in a recent autopsy he had found distinct evidence that the tumor had produced sufficient pressure on the ureter to cause the death of the patient. If an impacted tumor involved one or the other side of the broad ligament, even though there were no bladder or rectal symptoms, operation was especially indicated. He was convinced that many deaths after operations for fibroids were due to latent kidney disease caused by pressure upon the ureter.

Danger from these Tumors even after Delivery.—Dr. Robert A. Murray said that about fifteen years ago there had been an important discussion regarding the effect of tumors on the pregnant condition. At that time the opinion seemed to be that these tumors should be left alone, and that as a rule they would be sufficiently lifted up out of the way to admit of delivery. But fifteen years had made a great difference in our opinions, and also in the mortality in these cases. While it was true that sometimes the tumor rapidly disappeared during the involution of the uterus after labor, it was equally true that the patient not infrequently became septic as a result of the injury caused by labor. In a Cæsarean section done at full term on a uterus containing many fibroid tumors, there was great danger of septic peritonitis. He would favor in these cases extirpation of the uterus. We should never hope against hope, believing that the tumor would be lifted out of the pelvis, delivery effected, and that then no further complication was likely to take place. This was a serious mistake.

Dr. Coe, in closing the discussion, said that he agreed with Dr. Barbour that in most cases of compression of the ureter the result was due to inflammatory action, yet he had seen one or two autopsies in which, so far as could be ascertained, hydronephrosis was due to direct pressure, particularly from intraligamentous growths.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, May 26, 1897.

John Slade Ely, M.D., President.

Lipoma of the Diaphragm.—Dr. Lewis A. Conner presented several specimens. The first was a fatty tumor which projected from the diaphragm into the left pleural cavity. It was found at an autopsy on an old woman who died of cerebral hemorrhage. The tumor was situated a little to the left of the cardiac apex and more posteriorly. It measured four by three centimetres, was sessile, and was covered with the diaphragmatic pleura. On the under side was to be seen what appeared to be a deficiency in the diaphragm which might possibly explain the origin of the tumor. There were no adhesions to the surrounding organs beneath the diaphragm, or evidence of attachment to the omentum. This was the first time that the speaker had met with a tumor in this situation.

Malignant Endocarditis.—The next two specimens were hearts exhibiting the lesions of endocarditis. The first one had been taken from a laborer, thirty years of age, who had been admitted to the Hudson Street Hospital on December 2d. He had had rheumatism years before, and had been told that there was some cardiac affection, but it had caused him no inconvenience. Shortly before death he had been sud-

denly attacked with irregular chills, fever, and sweating, and on admission had a temperature of 100.4° F. The heart dulness was increased, and at the apex were to be heard a diastolic thrill and murmur, and there were all the signs of an old mitral stenosis. The spleen was enlarged, and there were a few spots over the abdomen which resembled the eruption of typhoid fever; indeed, both the tongue and the general appearance of the patient suggested this disease. Examination of the blood showed no malarial organisms. A specimen of the blood was sent to the board of health, and was reported to have given the typhoid reaction with the serum test. A few days later a distinct double murmur developed over the base of the heart, in the aortic area, and the pulse became harder. A diagnosis was then made of endocarditis. He lived ten days longer, and during this time the murmur was changeable. During the last three or four days there were distinct pericardial friction sounds. With the exception of the chills the clinical picture was that of typhoid fever. At autopsy the pericardium was found to contain ten ounces of red fluid, and the parietal and visceral layers were injected and everywhere covered with a thin layer of fibrinous exudate, giving a granular appearance to the surface. The heart was moderately enlarged; its cavities were all dilated; the muscle was rather soft. The mitral orifice admitted only the tip of the little finger; the valve was much thickened and the chordæ tendineæ were shortened. At the base of the posterior cusp of the mitral valve was a soft, recent, reddish thrombus, measuring two centimetres at the base and one centimetre in thickness. On the anterior cusp of the anterior valve, midway between the mitral and aortic valves, was a large whitish vegetation, measuring two centimetres at the base and 1.5 cm. in thickness. The cusp was considerably thickened, and the sinus of Valsalva was greatly enlarged by what appeared to be an aneurismal dilatation. This formed a prominence on the wall of the left auricle, corresponding to the seat of the first-mentioned thrombus. The other valves were normal. Both kidneys contained a number of small yellow infarcts. The aneurismal pouching of the sinus of Valsalva was evidently the cause of the thrombus, although there was no perforation.

The next specimen showed a malignant endocarditis affecting the pulmonary valves. The specimen had been removed from a woman, thirty-eight years of age, who had been admitted to the New York Hospital after an illness of a few days. She had had several chills and at the time of entering the hospital presented the clinical picture of a lobar pneumonia. This was the diagnosis made in the hospital. A loud systolic murmur was heard over the base of the heart. The autopsy showed the spleen to be enlarged to three times its normal size. The kidneys were normal except for some cloudy swelling. There were areas of recent exudation over both pleural surfaces. The left lung contained two areas of hemorrhagic infarction in the lower lobe. In the centre of each small area of broken-down tissue in the right lung were several small but similar areas of infarction, and near some of these were found emboli in the branches of the pulmonary artery. In the lower part of the upper lobe there was quite an extensive area of consolidation, with an area of softening in the centre. The heart itself was about of normal size. The mitral, aortic, and tricuspid valves were apparently normal. There was a mass of fresh friable vegetation arising from the posterior and under surface of the pulmonary valve.

The speaker called attention to the great difference in the clinical picture in the two cases of endocarditis. Vegetations, he said, were very much more common on the left side of the heart than on the right. When the left side of the heart was involved, emboli were washed into the general circulation, instead of into the pulmonary circulation; hence the great difference in the clinical picture in the two classes of cases.

Aneurisms of the Aorta; Rupture. — The next specimen presented by Dr. Conner consisted of a remarkable series of aneurisms of the aorta. It had been taken from an old man, seventy-three years of age, who had been admitted to the Hudson Street Hospital on March 14, 1897, in a state of coma. The man had been found ill in the street, but had been able to walk to the police station. A few hours later he had been removed to the hospital in an ambulance. No complete physical examination was made before his death, which occurred in a few hours. At the autopsy the left pleural cavity was found completely filled with clotted and fluid blood. The pericardium and heart were displaced to the right beyond the median line. Occupying the normal position of the heart, and pushing forward the parietal pleura in that region, was a rounded tumor, the size of a large orange. The left lung was completely collapsed and its apex converted into fibrous tissue. The apex of the right lung showed some fibrous nodules and tuberculous deposits. The heart was extremely small; its valves were apparently competent. The aorta, from its beginning to its passage through the diaphragm, was enormously dilated and converted into a series of irregular pouches, the largest being ten centimetres in diameter. About twenty centimetres from the aortic valve, in the upper part of the descending aorta, was a transverse linear rupture, about three centimetres long. The sac contained for the most part fluid blood. The dilatation of the aorta continued down to within about six or seven centimetres of the bifurcation. The intima of the aorta everywhere was the seat of atheroma and calcareous deposits.

Dr. Warren Coleman said that he had seen several cases of malignant endocarditis occurring on the right side during the puerperium. He had never seen the pulmonary valve so affected.

The President said that he had seen a few cases in which the pulmonary valve had been affected. Naturally in these cases pulmonary emboli were also found.

Dr. Conner said that in the cases he had reported there had been no evidence of an outside infection; in other words, it was a secondary process. The streptococcus pyogenes was found in each of them.

The society then adjourned.

Fractures of the Skull.—In a consideration of the permanent or later results of these fractures Dr. William N. Bullard (*Boston Medical and Surgical Journal*, April 29th) draws the following conclusions: "1. Out of seventy persons with fractures of the skull, thirty-seven presented no symptoms when examined some time later. 2. Only seven persons presented serious symptoms, and in at least four of these it is doubtful whether the symptoms were due to the injury. 3. The most frequent consequences found were headache, deafness, dizziness, and inability to resist the action of alcohol on the brain. 4. Out of the fifteen cases in which operation (trephining, etc.) was performed, twelve had no symptoms; in another it was doubtful whether the symptoms present were due to the injury; in another the symptoms were slight (headache rare, tension over the wound while lying in bed); the other was deaf, but had no other trouble. We are justified, therefore, in concluding, so far as our statistics lead, that those cases in which trephining was performed have shown much better results, as far as the symptoms discussed are concerned, than those in which no operation was performed."

Clinical Department.

TENOTOMY IN CONVERGENT SQUINT.

By A. BETHUNE PATTERSON, M.D.,

ATLANTA, GA.

The guiding muscles of the eyeball are the internal and external recti, the superior and inferior recti, and the oblique, and are the muscles involved in strabismus. There are several methods of treating strabismus, which are based upon the theories entertained as to the cause, and which will not be taken into discussion here, as the principal object is to call attention to the too frequent and unscientific operation of cutting the internal rectus muscle in convergent squint.

The indications in cross-eye have always been to straighten the eye; modern research has led us a step farther, and established a second indication—that of re-establishing the function of observing with the deviating eye, for binocular vision becomes suspended soon after parallelism of the visual lines is lost; coincident with the deviation, double vision makes its appearance and is usually of short duration, for the squinting eye soon learns to suppress its image. The fusion of the two images when once suspended is by no means easily restored; it is a tedious and painstaking task to bring about a restoration of the physiological function, and should be of grave concern to the conscientious operator. It must not be understood that the straightening, or more properly the apparent straightening, has restored to the eye its former habit of seeing; but, on the other hand, when fusion takes place it is proof positive of the parallelism of the lines of vision.

I hold that the treatment can be regarded as successful only when these several conditions are realized, for the eye is useless and virtually blind so long as the image is allowed to remain suppressed; then it should be the principal object in the treatment or management of squint to restore to the eye its physiological usefulness. This becomes exceedingly difficult and in many cases impossible after cutting the internal rectus muscle, because after a complete severance of the internal rectus the eye turns a little up and remains in this position. This hyperphoria becomes a grave complication, and must be overcome before binocular vision is attained.

It might be said that considering the strabismus operation from a cosmetic standpoint only is an obsolete custom, yet there are a few old operators who continue the practice of twenty years ago. It is to be regretted that this branch of eye surgery has been neglected by many of our distinguished operators. It is true that the simple tenotomy is the quickest and easiest way of disposing of these cases, and, coupled with the fact of the improvement in the appearance of the subject that follows, it is satisfactory to those who are ignorant of the true condition.

In an article published in the *Southern Medical Record* six or seven years ago, I protested against the indiscriminate cutting of the internal rectus in convergent squint. The following I select from a number of cases illustrative of the evils of which this paper complains, of operating wholly from a cosmetic standpoint:

Miss P—— had her internal rectus muscles cut for convergent strabismus by a distinguished surgeon a short time after the squint appeared. The double vision had subsided only a few weeks. The operator was ignorant of the existing hypermetropia, or farsight, which was three and one-half diopters. When she came under my treatment there was still a slight convergence, with the usual turning up (eso-hyperphoria). I succeeded in re-establishing binocular vision by doing a graduated tenotomy and correcting the hypermetropia with glasses. I feel very confident, if her hypermetropia had been corrected at the time of the first operation, and accommodation had been kept quiet by the instillation of atropine for some time, that the cutting of the muscles would not have been necessary.

Very many cases of convergent strabismus in children are due to far-sight, and if taken in hand early can be cured by glasses which correct the refractive error; then again there are many others due to a weak external rectus, which can be cured by developing the weak muscle. A complete severance of the muscle should be made only after a due consideration of all the conditions incident to strabismus.

PAROXYSMAL TETANOID.

By N. GORDON PRICE, M.D.,

NEW YORK.

Under this heading I desire to mention a train of peculiar tetanic symptoms arising as the result of mental overexertion. This condition was brought to my notice several months ago by my friend, Dr. Rosentover, who has been for quite a time subject to these paroxysms, and I have had occasion to confirm the existence of this phenomenon and to become more familiar with its details through personal experience.

I bring this condition before my medical brethren, not because the condition *per se* is of much importance, but because I am in the hope that its recital may throw some new light upon the influence of prolonged cerebration upon the motor apparatus of the human economy, the motor centres primarily and the muscular and nervous system secondarily.

The only etiological factor I am familiar with is hypercerebration, brought about in numerous ways; as, for example, the result of close and constant application of the mind to reading material requiring deep thought and concentrated attention, or as the result of brooding over unhappy thoughts.

Apparently this factor disturbs the cerebral equilibrium, rendering the happy harmony of will and action discordant; it severs the normal relationship of the motor and volition centres, and permits for a time the motor apparatus to act independently, although the will power retains its normal vigor—the motor centres being in a state of revolt, as it were.

The attack is most prone to come on when the subject is in the supine recumbent position, and especially at night on retiring, provided cerebral activity is allowed to continue. Quite a remarkable fact is that if a person is once attacked, tetanoid may be brought on voluntarily merely by fulfilling the above condition, *i.e.*, deep thought after prolonged mental work on retiring.

The attack is usually ushered in by prodromal signs, whose proper significance only experience can teach one to interpret. These signs are as various as are those of the epileptic aura, though most frequently they are of the auditory type; hearing is acutely and painfully exaggerated, and peculiar hallucinatory noises are heard, such as the rushing of water down a fall. Sometimes the aura is of a sensory type, in the form of one of the paræsthesiæ, the sense of formication being most frequent. These premonitory symptoms last a few seconds, when the attack itself comes on. If these symptoms are correctly interpreted, the oncome of the attack may be prevented by moving any of the voluntary muscles.

In the attack itself we have a faithful representation of the tonic rigidity of a tetanic convulsion—the vol-

untary muscles contract spasmodically, trismus is present, the extremities are violently extended, and palpitation of the heart is a frequent accompaniment. Consciousness is maintained throughout the attack, opisthotonos is absent or slight, and the contractions are perfectly painless. The will power is normal; intellection is normal, as a rule, though in some attacks it is impaired; there is a dread of death present, and the person feels as though he were bound in chains, being unable to move any of his muscles.

One is taught by experience that if he succeed in exerting his will to such an extent as to enable him to move any of the voluntary muscles, as the vocal cords or even the levatores palpebrarum, he will cut short the attack and compel the motor centres and muscular system to reassume their natural subservience to the will. The seizure lasts a few minutes, though to the afflicted it seems so many ages; its withdrawal is a signal for a free general sweat and for a grateful relief from all the symptoms, mental and physical. If cerebral activity is still continued, as many as five or six attacks may be brought on, one following the other in rapid succession. The attacked, to eliminate further seizures, must drive away all thought, lie in the semiprone position, and imagine nothing, except that he is a log, incapable of thought.

The specific cause and precise nature of this phenomenon are, I must admit, entirely obscure. The attack will probably be explained as epileptiform, but this will be merely evasion, and resemble the answer of the philosopher, who, when asked, "What is mind?" answered, "No matter;" and when asked, "What is matter?" replied, "Never mind."

The elucidation of this peculiar puzzle I will leave to those who are more qualified than I am to probe into the depths of neurological phenomena.

139 Columbia Street.

FLOATING KIDNEY.

By SARAH E. POST, M.D.,

BROOKLYN, N. Y.

Recently a patient sent for me, complaining of abdominal pain, nausea, anxiety, and general distress. I found the woman in bed. Examination easily found the right kidney presenting, its upper border, I think, inclining to the abdominal wall. The patient is the mother of ten children. I have found the relative frequency of these cases somewhat determinable. My first case I came to in the dispensary of the Woman's College, as early as 1883 or 1884, my first year of practice. The complaint was in a young woman, who appeared at the clinic of general medicine. Difficult urination was the prominent symptom. The kidney was not made out, and the diagnosis depended upon the nausea and the general distress. Another case was met about five years later in the Demilt Dispensary, evening class, then devoted to general medicine. This woman did not show the displacement at the time. Another time I was called to her house and found her in bed, with the kidney easily recognizable. This woman was about thirty-five years of age, and had an unyielding retroflexion of the uterus. A truss was fitted to the kidney. A third case was met almost five years later in the same clinic, then given up to gynæcological and skin troubles. I mention the latter because the patients did not have to ask care for a gynæcological complaint, and the inference is not clear that this one came even suspecting such a trouble. In my last case my first thought was to anticipate miscarriage and to look for the enlarged uterus. Even with the third case in mind, however, I have no ground for thinking that the patients themselves ever make this mistake. The third case was in a woman, twenty-five years of age. She came in the height of the distress, with all the symptoms marked—flushed face, difficult urination, nausea, and pain, distress and anxiety predominating. The kidney could be found protruding. It could be returned and held by a compress and bandage.

In fifteen years' practice, including dispensary work, four of these cases have come to me, the intervals being nearly uniform, each being about five years. The first year brought a case as serious as those that came to me later. The use of a compress and bandage with a week in bed has been the usual treatment. I have not found the cases such as to suggest operation. The second patient has returned to me. One has such attacks only now and then. Another had had one such attack six years previously.

A METHOD FOR PREPARING STERILIZED CATGUT.

By S. H. CHAMPLIN, M.D.,

CHICAGO, ILL.

If a catgut ligature be chromicized and then boiled thirty-five minutes in water, it will resist absorption in the tissues from ten to twenty days, according to size. The following is the method I have adopted: A catgut ligature of any length desired is wound in a single layer around a No. 5 or No. 7 cork; it is then sunk in absolute ether for twenty-four or thirty-six hours. On removal from the ether the cork is placed in the open air until the ether in the catgut has entirely evaporated. The cork is then sunk in the following solution: Potassium bichromate, two parts; formalin (forty per cent.), four parts; water, ninety-four parts. At the end of four days the cork is taken from this solution and washed a few minutes in running water, and is then sunk in boiling water for thirty-five minutes. The catgut may then all be stored in one large sterilized jar—or, better, each ligature may be kept separately in a small, wide-mouthed bottle, the bottle and cork having been previously boiled.

Corks are used instead of glass spools, because a certain amount of shrinkage takes place in the gut, and if wound on glass the ligature becomes flattened into a ribbon-like strand and loses much of its toughness.

Catgut prepared in this way does not become brittle if boiled only once, and it may even be boiled a second time for ten minutes without detriment. If boiled only fifteen minutes the first time it may be boiled a second or a third time for fifteen minutes each time. The water should be at the boiling-point before the catgut is dropped into it.

A piece of No. 6 catgut prepared as above was passed through the abdominal wall of a patient on whom I performed abdominal section, and used together with others of silkworm gut as an approximation suture. On the tenth day the sutures were removed, and the catgut, like the others, had to be cut. It was found to be very pliable and about one-half its original size, and required considerable force to break it. The peritoneum, recti muscles, and fascia had been closed by continuous sutures of catgut from the same cork.

Later I buried three pieces of No. 6 gut under the skin of a dog. One piece, removed the seventh day, was bleached from a brown to an opaque white, but otherwise was very little changed; the second piece, removed on the twelfth day, was very much reduced in size, and after being dried it was broken with moderate force; the third piece was looked for on the twentieth day, but could not be found.

This catgut has been used in pelvic operations, herniotomy, and a great variety of subcutaneous operations, and no infection has taken place.

It seems to me that a No. 12 catgut prepared as above would make an ideal bone suture. I have prepared only sizes Nos. 4, 6, and 8; probably the larger sizes would have to remain in ether and the bichromate solution somewhat longer.

1002 Madison Street.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE ELECTION; MR. HORSLEY SUCCESSFUL—THE MAIDSTONE EPIDEMIC—TYPHOID IN A LONDON HOSPITAL—MEDICAL SOCIETY OF LONDON—CLINICAL SOCIETY—DR. ALEX. HILL—DR. BISHOP HICKS—MR. ERNEST HART—DEATHS OF DRS. BARRY, R. SMITH, J. LONG, AND WICKHAM.

London, October 15, 1897.

The election is over and Mr. Victor Horsley is our new direct representative in the General Medical Council. It is estimated that more than thirteen thousand votes were recorded and that Mr. Horsley's majority is nearly six hundred, but the exact figures cannot be given for another day or two. The result will, I believe, give general satisfaction.

The epidemic of typhoid at Maidstone is still extending. Last night the total number of cases notified had risen to 1,642 and the deaths to 91. The rate of increase has some days seemed less and inspired hopes of a rapid decline which have been disappointed. On Monday the cases were 1,574, of which 20 were new. On Tuesday the number rose to 1,593, Wednesday to 1,620. From September 18th to 21st the attacks were at the rate of 82.7 per diem; for the week ending September 28th at the rate of 74.4; for that ending October 5th, 69.4; October 13th, 26.4. There is so great distress in consequence of the epidemic that subscriptions have been opened in various towns to help. The Lord Mayor of London has also opened a fund.

I mentioned that the water company was to discuss the disinfection of the Farleigh mains. On Monday it was determined that this should be done on Wednesday or Thursday, but the work has not been done. The town is now promised that the disinfection shall be carried out between to-morrow and Monday, and the inhabitants naturally want to know why it was not done three weeks or more ago. It is now to be done under the supervision of Dr. Sims Woodhead. It is proposed to mix eleven tons of chloride of calcium with 225,000 gallons of water and pass the solution through all the pipes supplied by the Farleigh Springs. So simple an operation as this could surely have been adopted at first, and the water company has much to answer for without adding to its faults this delay. There is an outcry for governmnent investigation and confiscation of the monopoly, a demand which meets with sympathy wherever people feel themselves at the mercy of water companies. Dr. Semple inoculated eighty of the attendants in the asylum with the vaccine prepared at Netley. Some of the nurses in the town also submitted to the experiment, but very few of the inhabitants. Forty medical men and more than one hundred nurses are engaged in the town. I regret to hear that Dr. Semple is ill with Malta fever contracted during his Netley experiments.

London has been alarmed by reports of cases imported from Maidstone, and much has been made during the week of the occurrence of cases in University College Hospital, where too great reticence was observed toward the press; but typhoid does not appear to have been in excess of the average in London at this season. The alarm will be productive of good if it rouses the public to the disgraceful state of the River Lea, from which East London draws water. The company is warned that there is great danger from this source, and neglect on its part will be severely visited.

The cases at University College Hospital have been confined to certain nurses and wardmaids. In the course of rebuilding-operations their dining-room had to be demolished. In the one to which they were removed a different water supply was used, and this had become contaminated from a tank in which soiled linen was soaked before boiling. About eighteen cases have thus occurred, but the source of infection was soon traced and cut off.

The societies are at work. Last week the Obstetrical and Clinical held meetings. This week the Medical met on Monday; yesterday the Gynæcological and the Society for the Study of Inebriety. The Pathological is to meet next Tuesday.

The new president Dr. Sansom took the chair at the meeting of the Medical Society and discoursed on nervous disorders of the heart not associated with obvious organic lesions, and urged that such abnormal conditions should be more carefullly observed and examined in a methodical manner. Among symptoms often met with in functional cardiac disturbance he mentioned protuberance of the eye, inharmonious action of the muscles of the globe, retraction of the upper lid, inequality of the pupils and other eye symptoms. Auditory signs, the pulse, and muscular tremors were also to be noticed.

The mechanism of cardiac dilatation and the significance of systolic murmurs at the apex or near it were further considered.

A very interesting—not to say amusing—paper followed by Mr. Anderson. It was a biographical sketch of John Anderne, born in 1307, and accepted by Mr. Anderson "with pride and veneration as the father of English surgery." Lovers of early medical literature will be delighted with this paper.

At the Clinical Society meeting the new president, Mr. Langton, thanked the fellows for the honor they had accorded him of succeeding the late Mr. Hulke, whose office he had temporarily occupied in consequence of the latter's lamented decease. He then remarked on the history of the society and the work it had done, especially in the last two years. In illustration of the value of its work he instanced the report on myxœdema, which elucidated the pathology of the disease and even led to the discovery of its successful treatment. Another piece of work was that done in connection with the vermiform appendix. He mentioned that at St. Bartholomew's Hospital operation on this organ had been done in fourteen cases during the last year, in all of which the patients had recovered. In ten of these there was suppuration, in four inflammation. He promised to give the usual inaugural address at the first meeting of the coming year.

A case of Loreta's operation was then related by Dr. White and Mr. Langton, after which Dr. Phear read an account of a case of cerebral sinus thrombosis in a child of seven. There was an interesting discussion on each of these cases.

Dr. Alex. Hill has been appointed vice-chancellor of the University of Cambridge—the highest executive office. Dr. Hill is the lecturer on advanced anatomy and has been Hunterian professor at the College of Surgeons. He will be known to you as an eminent neurologist, the author of the "Physiologist's Note Book" and numerous papers on the anatomy and physiology of the nervous system.

Dr. Hicks, the newly-appointed bishop of Blömfonstein, is a well-kown medical man and author of a "Standard Text-Book of Inorganic Chemistry."

Mr. Ernest Hart's convalescence has continued, and he has left town for Brighton.

Frederick William Barry, M.D., D.Sc. Ed., F.B.S. Ed., D.P.H. Cantab., the senior inspector of the local government board, was found dead in his bedroom at Birmingham Hotel on Tuesday. He arrived the evening before in order to confer with the board of guardians. He was the writer of numerous important reports in the course of his duties on cholera, vaccination, fever, and other matters relating to the public health. He was government sanitary commissioner in Cyprus from 1880 to 1882, a member of the Epidemiological and other societies and also a barrister of the Middle Temple. At the inquest a verdict of death from natural causes was found. Dr. Barry is deeply regretted in the health service and by all who knew him.

Dr. Rob. Smith, medical superintendent of Gateshead Aslyum, died under chloroform last week in the Stockholm Hospital, to which he had gone to have an operation performed for fistula. He was M.B. Aberd. 1854, M.D. 1858.

Dr. James Long, a retired deputy inspector-general, was found dead in his sitting-room on Friday. The body was under the table in a position to which it might have slipped. He lived quite alone. He was M.D. of Edinburgh, 1850.

"Dear old Dr. Wickham," of Tetbury, Gloucestershire, died on the 30th ult. in his ninty-fifth year. He went to Tetbury about fifty years ago.

OUR PARIS LETTER.

(From our Special Correspondent.)

DUSTS AS PROPAGATORS OF INFLAMMATORY DISEASES —DONATION TO THE FACULTY OF MEDICINE TO FOUND THE LEGROUX PRIZE—TRANSMISSION OF MUMPS TO THE DOG—ABDOMINAL SURGERY—CYON'S NERVE—FLOATING KIDNEY AND VIBRATORY TREATMENT, ETC.

PARIS, October 22, 1897.

THE rôle played by dusts of different kinds as factors in the causation of disease is more important than is generally admitted. The metallic dusts, by their irritative action upon the membranes of the finer bronchial tubes, frequently give rise to bronchitis and pneumonia; and all are familiar with the calico-like appearance of a lung impregnated with coal-dust deposit. But it is to other dusts than these that are due many cases of eruptive fevers, diphtheria, pneumonia, and almost always tuberculosis. We refer to the dusts that are concealed in the cracks of floors, along the cornice, on the tops of window-frames, and in the angles of walls. It is for this reason that modern hospital wards should be built with rounded corners and vaulted ceilings, without cracks or confractuosities of any kind.

By decree, the Faculty of Medicine is authorized to accept the donation of a sum of 10,000 francs, made in its favor by Madame Legroux for the foundation of a prize to be given every five years under the name of the Charles Legroux prize. The prize is in perpetuation of Dr. Charles Legroux's memory, late professor *agrégé* at the Faculty of Medicine of Paris.

There have been several important and interesting communications made recently at the Academy of Medicine. In the first instance, Dr. Laveran related a curious observation of the transmission of mumps from man to the dog. It should be noted, however, that Dr. Laveran made this communication on behalf of Dr. Busquet, of Bordeaux, adding that, although Dr. Busquet thought he had observed such transmission, it seemed to him (Dr. Laveran) not probable.

The military doctors took part in the proceedings. Dr. Moty entertained the academy on the accidents of the wisdom tooth. The word "accidents" is given in the French sense, meaning diseases and their complications.

Dr. Chauvel confirmed with two observations—the one by a successful operation, the other by a death—the necessity of immediate intervention in all cases of penetrating wounds of the abdomen. He advocates opening at once the abdomen, suturing the intestine, and washing the peritoneum. This is the ground taken by some of the leading American surgeons many years ago. Sims was among the first to propose it, and although the operation was talked of in Garfield's case it was unfortunately not undertaken. With our modern system of antisepsis, the abdomen could be opened in all cases of penetrating wounds, certainly without increasing the already existing danger. Not only does the surgeon thus become doubly sure of his diagnosis, but the chances of the patient's ultimate recovery are largely increased thereby.

All heart specialists are familiar with Cyon's nerve —a sensitive nerve of the heart by which that organ provokes a reflex action dilating the peripheric circulatory system and thus diminishing the energy and number of its efforts. Dr. Cyon, who was for some time editor-in-chief of a Paris newspaper, is now discoursing at the Academy of Sciences on the thyroid gland and iodothyrin, the product of its secretion, with reference to the treatment and cure of exophthalmic goitre. It is strange in so learned a body as the Academy of Medicine, that is intended to represent all branches of medical science and practice, how rare the neurologists are! The vast and magnificent department of nervous pathology has as yet no special section. Certainly the academy should create one and admit into its ranks Professors Raymond and Joffroy, also (*agrégés*) Professors Brissaud, Dejerine, and Gilbert-Ballet, none of whom, although leading lights in the world of nerves, is a member of the Academy of Medicine.

Dr. Ferrand is one of the most active neurologists now in the academy. He is a spiritualist as well, and has brought his synthesis to dualism, differentiating the psychical from the intellectual functions, the faculties of the soul from the properties of the cerebral cell.

Dr. Lanceraux, who is evidently an advocate of vibratory medicine, reported the case of a client affected with painful floating kidney, who one day took the train for Bordeaux, some seven or eight hours' journey from Paris, for the purpose of obtaining there a suitable bandage to support the wandering organ. After six hours of railway travel, she experienced a cessation of the pain and a return of the kidney to its customary place, where it remained for three years without occasioning any trouble whatever. The patient thought herself permanently cured, when the kidney again left its normal position. She took a second time the train for Bordeaux, and again after six hours of travel the pain ceased, the tumor in the right hypochondrium disappeared, and the kidney returned *in situ*.

We had already the vibratory helmet and chair of Charcot, such excellent remedies in the treatment of neurasthenia, but should be at a loss to account for the happy action of trepidation in this case, unless we accept Cheron's idea that floating kidney is a ptosis of neurasthenia, and the trepidation or vibration acted as a stimulus to the nerve cells—a treatment that is certainly indicated in neurasthenia.

The trial of Dr. Laporte, who recently performed craniotomy with a mattress needle, began yesterday. The operation, it will be remembered, was followed by the death of the mother as well.

OUR BERLIN LETTER.

(From our Special Correspondent.)

THE NEW ORDER IN OUR UNIVERSITIES—THE INTERNATIONAL MEDICAL CONGRESS IN RUSSIA.

BERLIN, October 1, 1897.

THE German ministry has formulated a new rule governing the study of medicine in all the allied German States. This has already been made public by means of the telegraph, but it is of such vital importance to Americans studying in Germany that I may be excused for dwelling upon it at length. It has been ruled that only such persons as have passed the preparatory medical examination in Germany, or one similar thereto in other countries, may be admitted to visit and study at the clinics, etc. As a degree from a German college (gymnasium) is required of all candidates for the "*testamen physicum*," and as there exists in America no arrangement corresponding to the German "*physicum*," the importance of this new law is very apparent, for it excludes Americans from clinical studies in the German States. This bureaucratic ruling is, however, a double-edged sword. It serves the good purpose of excluding from our universities the unworthy element which has heretofore brought such disrepute to the German medical title; on the other hand, it at the same time excludes the good and desirable element whose purpose in coming here is to further medical knowledge. Germany will suffer in consequence, for as a natural result Americans and others affected by the new law will visit other countries.

The medical post-graduate courses are in no wise affected. Many of the Americans who attended the Moscow congress are at present actively attending these courses.

As the scientific proceedings of the congress are to be reported by the international press bureau of the congressional committee, I will omit any mention thereof and speak only of the open arrangements and public proceedings. I will begin by stating that at no previous international congress was there such perfect organization as at this one. Government and private individuals vied with each other in trying to add to the pleasures and comforts of the foreign guests, to make their stay in Russia memorable.

The granting of a free railroad ride, in first-class compartments, from the border to Moscow and thence *via* any selected route to Petersburg and return to the border —an allowance never yet made by any other government—secured the good will and the good humor of the guests. A nod from one high in authority (in Russia always a magic talisman) relieved us from all those inconvenient and vexatious passport and customs difficulties one encounters nowhere so ubiquitously as in Russia. In fact, there was a marked absence of customs revision. We Europeans, who are not so accustomed to long-distance travelling as our American colleagues, regarded with horror the thirty-hours' ride *in prospecto* from Warsaw to Moscow. It was a most agreeable surprise to us, therefore, to find ourselves at our journey's end in nowise tired out—in fact, in very fresh condition, so excellent and comfortable are the Russian railway coaches, which are in this respect as well equipped as the American. The excellent railway restaurants added not a little to our comfort.

Delegates from the congress accompanied all trains and also met them at the railroad station at Moscow, where each visitor was assigned his quarter and given all necessary directions and help. Many lived gratis in the clinics, which were empty on account of the vacation; others with Russian colleagues, especially the professors; the majority, however, located at hotels and private residences at remarkably low prices. The committee had a list with prices, thus excluding any extortion.

The headquarters were at the "Manège," in the very centre of the city. Here one learned details about the sessions, the arrangements for the festivities, excursions, city attractions, etc. The national committees had their bureaus here, one met acquaintances or formed new ones, got general information, obtained return tickets—in short, it was the place where all concerned met and obtained or learned what they wished. This arrangement was an ideal one. Everything was well regulated—no confusion, no crushing, no pushing or rushing, as was the case in Rome; everything went along smoothly. Male and female students, most of them speaking English, French, and German, did voluntary service and proved very useful. Every participant in the congress received gratis a "Guide to Moscow" in French, and there was issued almost daily a French journal. The official programme was also made public here.

The general sessions—there were three in all—were held at the Imperial Theatre, an immense building with a seating capacity of three thousand. Each session could be attended by about one-half of the total number of members. The first one, which was opened by the uncle of the Czar, was most brilliant; the foremost members of the profession in the entire world were present. The greatest honors were paid to Virchow, an almost unceasing applause greeting his every appearance upon the platform. Section meetings were held at various buildings not widely separated, and those intimately associated were when possible assigned to the same building—for instance, general medicine and general surgery in the Adels Club, a magnificent edifice. Many sections were held at the old and new universities and at the principal clinics. In spite of the heat the attendance was very good. Proceedings were held mostly in the German language; English and French were also employed; Russian very little. The French complained later in their professional papers about the prevalence of German; in spite of their alliance they felt themselves set back. I believe their complaint is unjust, the Russians being unbiassed in their hospitality. We cannot blame them for feeling more closely in sympathy with their German colleagues, who are in a great measure their teachers. Their text-books are German or translations thereof, and the number of Russian physicians studying in Paris is very small compared with the number of those in Berlin.

The hospitality of the Russians is beyond praise; classical in fact. Delightful beyond description were the festivals given by the city of Moscow, by the physicians of Moscow, and by the different colonies. At one affair fourteen thousand guests, including representatives of the city itself, were present. Until 3 A.M. there prevailed the greatest good-humored animation —this in spite of the babel of tongues and the large attendance. A moderate estimate would place the expense of this festival at not less than $25,000. There was such a superabundance, that late at night when the guests departed the tables were still loaded with eatables. For the eye, the ear, and the tongue, there was more than enough. So with all the festivals. Special thanks are due to the Russian ladies who looked after the comforts of the female guests. They were most amiable, and their efforts were entirely successful.

A word about Moscow itself, for with the exception of Rome no city of Europe presents so much of historic interest. In spite of the great destruction by fire of its older churches, there still are many which date their existence back eight hundred years or more. The Kreml, with the coronation cathedral, the imperial palace, and the treasure chamber, in which latter

are kept the coronal insignia of all the crowned monarchs of Russia and where are immense quantities of jewels and gold, offer enough of interest to the visitor to occupy several days. When one considers in addition the other interesting churches and monasteries, the museums, picture galleries (including the Tretiokoff, in which most of Verestschagin's are to be seen), the unique foundling and lying-in house, the curious streets and pretty parks and squares, it will be easily understood that the congress members could well employ the time left them outside of the section meetings.

Bodily wants were also well provided for; the Russian cuisine is excellent and the prices are moderate. One soon learns to eat caviar and to drink tea. The pavements are miserable, but carriage hire is so cheap that riding is no costly luxury. The drivers—isswoschtschiks—are an institution peculiar to the country itself. There is no fixed tariff, so one must bargain beforehand in engaging a droschke (carriage). It is the rule to give only one-half of the price asked by the isswoschtschik. The latter is a model of patience; no matter how much you scold him, he is always polite and quiet.

A bird's-eye view of the city makes a panorama never to be forgotten—one gets such a view from the bell tower of the Kreml in the centre of the city, or from the "sparrow hill" at the southwest border of the city. Every member of the congress has in all probability visited at least one of these lookout points. Though numbering not more than one million inhabitants, Moscow is much spread out. The dwellings are low and broad; churches, monasteries, parks, and squares are in large number. Here and there the blue, green, and golden tower of a Greek Catholic church stands out proudly above this vast sea of houses. Each nationality has its peculiarities; the Russians are marked by their hospitality and outward piety. This first quality has succeeded in making the Twelfth International Congress memorable to those who attended. St. Petersburg, ranking with the large American cities as a very modern city, is a jewel in the diadem of modern Russia. We cannot but speak in warmest terms of praise of the Russian government and people for their grand reception of us all.

In the next letter I report on the "Lepra-Conferenz," which has taken place here in the last few days.

BOVINE TUBERCULOSIS.

To the Editor of the Medical Record.

Sir: A few years ago we were surprised and alarmed by the discovery that a large number of the dairy cows of this country and Europe were affected with bovine tuberculosis. The public was much excited, and I believe that most of the diseased cows were destroyed and the expenses added to our already overburdened tax list. And there the matter seemed to have ended, so far as the institution of any preventive measures was concerned.

Since that time during my summer vacations in all parts of the United States I have endeavored to find out the cause of bovine tuberculosis, and the answer has invariably been "over-milking," viz., not allowing the cows any rest during pregnancy, but milking them from one year to the other until they die. In many instances I know this to be true, as the farmers have assured me that their cows never "went dry;" but these same farmers would never allow their own children to be nursed during their mother's pregnancy.

I am assured that bulls, steers, and unimpregnated heifers never contract tuberculosis.

That there are other secondary causes, such as too close confinement in warm houses or stables, I have no doubt; but the primary and principal cause is as I have stated above, and it must and will be remedied; not by forever killing the cows as they develop the disease, but by removing the cause.

The law should compel every farmer or dairyman to allow his cows to go dry for the last three months of gestation.

This is a very important matter, and I hope that other physicians will investigate for themselves.

John H. Trent, M.D.

[illegible]

THE ALTERNATIVE OR "RECURRENT TREATMENT" IN RETRODEVIATIONS OF THE UTERUS.

To the Editor of the Medical Record.

Sir: In my recent paper on "Retrodeviations of the Uterus," the following heads were elaborated: (1) Retrodeviation, *per se*, does not always give symptoms, although favoring the congestion which does give them. (2) As the congestion gives the symptoms, it is more important to remove this cause than to anchor the womb forward. (3) Every case will therefore be helped by "treatment" removing this cause, even though ultimately an operation is required. (4) Many cases, if not most cases, will lose symptoms under comprehensive treatment (including reparative work), even though the womb remains to the rear. This relief from symptoms usually continues for a period varying in length. It may be only three months; it has frequently been five years. In favorable cases "recurrent treatment" is a reasonable alternative to be weighed before selecting any of the operations, considering their drawbacks. By this is meant a few weeks of treatment each year, or every two or even five years. (5) When the periods of relief are too short, or when nothing but the rear position of the womb prevents recovery, unquestionably operation should be done—but never as routine, ignoring the safer, cheaper, more comfortable alternative. (6) The malady called retrodeviation is a complex one, always including pelvic congestion, and frequently general enteroptosis or downward displacement of the abdominal viscera. Sewing the womb forward will not always cure it. If surgery is the only resource for the condition, anchoring the kidneys will be the next amendment to the present operations.

Edebohls strongly supports my view in his experience, though we shift, and deduce differently therefrom. His paper, "Shortening the Round Ligament," gives a most complete *résumé* of its subject and a comprehensive bibliography. In addition are tabulated one hundred and fifteen operations by this painstaking surgeon. The results are most frankly given. Seventy-seven were uncomplicated anatomical successes. Thirty-four were complicated successes; that is, cases in which there were suppurations, tearings of the ligament, opening of the abdominal cavity, hernia, floating kidneys, or trouble with the appendages existing at the time of the operation or discovered thereafter. These complicated cases, added to the uncomplicated cases, make one hundred and eleven final anatomical successes out of one hundred and fifteen operations. Few surgeons can point to a better record. He writes:

"The frequent association of movable kidney or kidneys and retrodeviation of the uterus has been observed by the writer since 1890, and it is drastically illustrated by the recorded observations made in the one hundred and fifteen cases tabulated. No less than twenty-five patients are noted as suffering from movable kidney or kidneys, either existing at the time the round ligaments were shortened or developed (discovered [?]) after the operation. Of these twenty-five

patients with movable kidney or kidneys, eleven were cured by right nephropexy and two by bilateral nephropexy."

It will be seen that Edebohls has already amended the Alexander operation by the addition of nephropexy. He further says:

"While the anatomical results may be thus readily and succinctly stated, an accurate report upon the therapeutic results becomes a more complicated matter. The less searchingly we cross-question our patients, . . . the more likely are we to record a large number of therapeutic successes. But closer investigation often reveals one or more stumbling-blocks to perfect satisfaction, in the shape of complicating diseases present at the time of the operation or developing (discovered [?]) soon thereafter, which complications more or less fully, more or less permanently, mar the therapeutic result."

This is but another way of saying that even though the womb is safely stitched forward by a competent surgeon, the condition is not always cured.

All the special surgical devices for retrodeviation have drawbacks. To hide them, to evade their discussion, is not only unscientific but unfair. These drawbacks are entitled to serious consideration in weighing the alternatives, operation *versus* "recurrent treatment"—both involve so much time, so much money, so much disability; and there is a balance to be struck.

The Alexander is the least objectionable of the operations, but "recurrent treatment" is better, cheaper, safer, in all cases in which it gives the therapeutic results. Of course it cannot compete in anatomical results.

EUGENE COLEMAN SAVIDGE, M.D.

60 WEST FIFTIETH STREET, NEW YORK.

EXPERT EXAMINATION FOR TESTAMENTARY CAPACITY.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Quite recently there has been no small amount of litigation, in the courts of this district and presumably in the courts of other districts, regarding the validity of wills. In the vast majority of these cases the ground is taken by the plaintiff that the testator was *non compos mentis* at the time of the execution of the will in question. Some endeavor to establish that, while the testator may not have been actually insane, yet the mental faculties were in a state of mild degeneration or something of that nature, so that the testator was abnormally susceptible to the influence of interested parties. It often happens, too, that the cause of death of these people who have left unsatisfactory wills is due to some disease other than that of the mind or nervous system. The physician who attended perhaps saw no need of a thorough examination of the nervous system—certainly did not examine it with a view of establishing the competency or incompetency of the patient to execute a will. As a result, the physician, when called to testify, is not infrequently unable to set forth the case with that clearness which would obtain had he deemed it necessary to examine the nervous system with reference to its stability or instability.

In view of these undisputed facts, the conviction forces itself upon me that a pathological condition of existing laws is the real cause of this diseased condition of affairs.

A law should be enacted providing in the main as follows:

1st. The intending testator must, on the same day on which he proposes to make his last will and testament, be carefully examined by a reputable physician of at least three years' practice, as to his sanity and ability to execute a will understandingly. If the testator is found to be possessed of his normal faculties and able to execute a will understandingly, the physician shall so certify in his own handwriting. This certificate must be sworn to before any person empowered by law to administer oaths for general purposes. The signature to the certificate must also be witnessed by two persons who can write. This certificate is then to be attached to and become a part of said will.

2d. In case the testator, at any subsequent time, desires to change his will, a physician must re-examine and certify as before.

3d. In cases in which it can be shown that the circumstances connected with the making of the will were such as to render the presence of a physician impossible, or when, the physician being present, the condition of the patient precludes examination, then the will must be reduced to writing and may be considered valid without a physician's certificate. Even in these cases the physician should hastily examine as best he may, and certify, if he so believes, that to the best of his judgment, knowledge, and belief the testator is in full possession of his normal faculties and entirely capable of executing a will understandingly.

Exception: This law shall not apply to wills which in the aggregate bequeath real or personal property, or both, less in value than $500.

I do not wish to be understood as taking the ground that the attachment of the physician's certificate is to render a will incontestable, but I do affirm that the existence of the certificate would in the vast majority of cases be considered too great an obstacle to surmount, and so prevent litigation. The absence of this certificate, however, should in every case, except as mentioned above, render a will absolutely null and void.

The only objections to which this system might give rise would be the extra trouble and slight expense incurred—objections which, when compared with its advantages, appear very insignificant indeed.

The conveyance of real estate by deed requires an acknowledgment under oath from the conveyer. Is the conveyance of real estate by will any less important?

A. C. MATTHEWS, M.D.

Wounds of the Air Passages.—1. Suicidal wounds of the throat should be treated by primary suture in all cases in which the general condition of the patient permits. 2. Antiseptic precautions are most important. 3. If necessary, chloroform should be administered, and is perfectly safe. 4. Divided muscles should be sutured, and in bringing together the edges of the skin the inversion caused by the platysma muscle should be corrected. 5. The wound in the air passage should be completely closed. 6. In many cases it is quite safe to dispense with the use of a tracheotomy tube. If a tube be deemed necessary it should not be introduced through the suicidal wound in the air passage, but through a fresh vertical cut at a lower level 7. Silk is the best material for suturing the larynx or trachea. 8. During the after-treatment it is unnecessary, except in certain special cases, to feed by a tube or by the rectum. 9. If the above methods of treatment be adopted, not only will a very large proportion of even dangerous and extensive wounds of the air passages recover, but the period of recovery will be greatly shortened, the patient will not be exposed to the same risks of secondary inflammatory complications, and he will be much less liable to the occurrence of permanent stenosis of the trachea or the formation of an aerial fistula.—PLATT, *The British Medical Journal*, May 8th.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 30, 1897:

	Cases.	Deaths
Tuberculosis	198	106
Typhoid fever	24	5
Scarlet fever	109	14
Cerebro-spinal meningitis	0	4
Measles	149	7
Diphtheria	145	15
Laryngeal diphtheria (croup)	1	2
Chicken-pox	7	0

Medicine for "Threading Ideas."—According to a French paper, an American physician advises students to combat the nervous asthenia which paralyzes their faculties and causes them to lose the thread of their ideas by taking ten drops of tincture of gelsemium three times a day. For the same purpose an English specialist prescribes wine of opium to be taken by actors and singers before going on the stage. From five to six drops he says will give to the most timid actress the self-possession of the most spirited old player.

Abuse of Alcohol.—Speaking of the abuse of alcohol, M. Van den Corput, at the International Congress on Drink lately held at Brussels, said it was the direct outcome of the storm and stress of life under the conditions created by modern progress. Neuropathy was a sign of the times, and the remedy for this was intelligent feeding with the use of beverages, such as sound and generous beer, milk, tea, coffee, etc.

Suicide by Hanging.—Professor Brouardel remarks that suicide by hanging has a peculiar fascination for dipsomaniacs, children, and, generally speaking, all persons whose intellects are weak or undeveloped. He says: "In some families self-murder by hanging would seem to be a hereditary failing. Not far from Étampes there is a large farm with which I am acquainted. One day, without any apparent cause, the proprietor hanged himself, leaving a family of seven sons and four daughters. Ten out of the eleven subsequently followed their father's example, but not until they had married and begotten children, who in turn all likewise put an end to themselves with the cord. There is now but one representative left of this remarkable group, an old man of sixty-eight, who has passed the family hanging-age."

The Sale of Ice Cream in Glasgow.—The Glasgow municipal authorities deal with the ice-cream vendors in that city in a somewhat novel way. Some few years ago the city fathers, alarmed at the amount of sickness, especially typhoid, clearly traceable to the consumption of ice cream, attempted to place ice cream in the same category as milk. Their efforts at first were unsuccessful. However, resolved not to be beaten, they obtained special powers, and now the sellers of ice cream in Glasgow, alone of all cities, are under the same regulations as those which control the dairies. If the example of Glasgow were to be followed in more than one of the cities of America, the result might be for the public good.

Headaches, if due to pelvic disturbances in the female, are usually located at the top of the head and are accompanied by soreness of the scalp; if due to digestive disturbances, they are occipital or frontal; if to disease of the pharynx, they involve the entire vault, as though the pharynx were expanded and extended upward; if due to migraine, they are usually one-sided, local, and accompanied by soreness at the supra-orbital foramen; if to eye strain, generally superciliary or frontal, sometimes occipital; if to disease of the nares, between the eyes and extending backward.—Dercum.

Treatment of Epilepsy.—Opium, beginning with five-sixths of a grain daily, distributed in three doses, and steadily increased until four or five grains daily are administered. At the end of six weeks the opium is stopped, and bromides are used—in large doses, seventy-five to one hundred grains a day, for a period of at least two months. The fits generally yield to the first dose of bromide. The treatment should be adopted only in chronic intractable cases of epilepsy in which the administration of bromides alone has failed. The contraindications are the status epilepticus, plethora, and cerebral focal lesions.—Flechsig.

How Does Malaria Enter the Human Body?—The mosquito, as is well known, deposits its eggs in water or in damp places; from the eggs are hatched larvæ, which, very voracious, devour everything they encounter, among other things the bodies of the dead mosquitoes and the envelopes from which they have emerged. They then pass into the state of nymphæ, from which emerge the young mosquitoes. During this long period of life in damp soil or in water, and especially in the state of larvæ, one may imagine that they load themselves with malarial germs, which everything leads us to believe are found most abundantly in the soil, and which afterward in the last period of life, when the female mosquitoes live as suctorial insects, might inoculate man. This hypothesis would naturally give rise to other problems. The malarial germs, having entered into the young larvæ, might live in them as parasites, going through a necessary stage of their life in this host before arriving at man. On the other hand, one might suppose these diptera to be simply carriers of the germ into man.—Bignami.

Is Crime a Disease?—Of 394 thieves, 74 are dolichocephalic, 129 mesocephalic, 191 brachycephalic; of 107 homicides, 21 are dolichocephalic, 31 mesocephalic, 54 brachycephalic; of 92 sexual offenders, there are 18 dolichocephalic, 30 mesocephalic, 38 brachycephalic; of 54 swindlers, there are 9 dolichocephalic, 15 mesocephalic, 30 brachycephalic. A study of the individual indices shows a considerable proportion to be entirely outside of the physiologic limit. This is most marked among the sexual offenders, in whom the cephalic index was in itself absolutely pathological in about fifteen per cent.; that is to say, considering the antero-posterior diameter of the cranium as 100, then the transverse was represented by less than 76 or more than 87, the former being extremes of dolichocephalic and the latter of brachycephalic skulls. The brachycephalic skulls much predominated in the entire group of criminals.
W. A. McCom.

Diphtheria in London.—Despite the great outlay on sanitation in London, diphtheria goes on increasing in prevalence. According to the clerk of the Metropolitan Asylums Board it has been steadily gaining ground for a considerable time past, and its continuous development has puzzled all who have examined into the matter. The same increase is observed in the provincial towns, but not to the same extent. Thus in them the death rate from diphtheria rose in ten years from 0.27 to 0.38, while in the same period in London it has increased from 0.41 to 0.60 per 1,000. This increase obtains even in parts of

London otherwise creditable in their sanitary conditions. The disease is five times more fatal at present than scarlet fever, according to the experience of the Metropolitan Asylums Board's hospitals, although the mortality has been greatly reduced by the antitoxin treatment.

Sterility.—Dr. Vedder, of Christiania, Sweden, reports the results of examination of three hundred and ten married women who had never been pregnant though married at least one year. In fifty of these cases he was able to examine the husband also. He draws the conclusion that in seventy per cent. of these cases the husband is to blame for the sterility, either through impotence or through infecting his wife with gonorrhœa.—*Norsk Magazin for Lägevid.*

The Mystery of Heredity.—Out of two hundred and twenty-two pupils in the grammar schools in Chicago who attained a certain percentage of efficiency, only twenty-five were boys. This would indicate that girls are about four times as bright as boys. It is hard to understand these things and straighten up the rules of heredity. It is, we believe, the accepted rule that boys "take after" their mothers and the girls after their fathers. If they, the women, are the smarter, the boys, "taking after their mothers," should also be the smarter. If the men are the smarter, then the girls, "taking after their fathers," should be smarter. It is a difficult riddle to unravel.

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the United States Marine Hospital service, during the week ended October 30, 1897:

YELLOW FEVER. UNITED STATES.

		Cases	Deaths
Alabama, Mobile	October 30th to 04th	40	8
Montgomery	October 21st to 29th	6	1
Notasulga	October 25th	1	
Sandy Ridge	October 25th	1	
Selma	October 23d to 26th	12	1
Whistler	October 29th	Not stated	2
Georgia, Atlanta (refugee)	October 24th	1	
(detention camp)	October 27th	1	
Louisiana, Baton Rouge	October 22d to 28th	3	
Franklin	October 20th to 21st	2	
New Orleans	October 23d to 29th	367	82
Patterson	October 21st	1	
Mississippi, Bay St. Louis	October 23d to 28th	33	3
Brent	October 23d to 29th	91	8
Cayuca	October 23d to 25th	5	
Clinton	October 23d to 29th	7	
County Farm	October 25th	1	
Edwards	October 23d to 28th	12	1
Hinds County convict camp	October 23d to 25th	6	
McHenry	October 23d to 29th	6	
Nitta Yuma	October 23d to 24th	6	
Pascagoula	October 23d to 29th	11	
Scranton	October 23d to 29th	75	4
Tennessee, Memphis	October 23d to 29th	21	3
Texas, Galveston	October 27th, yellow fever present		

YELLOW FEVER. FOREIGN.

Brazil, Para	October 3d to 9th	..	8
Cuba, Cienfuegos	October 14th to 15th	..	2
Havana	October 14th to 21st	..	13
Matanzas	October 9th to 15th	..	6
Jamaica, Kingston	July 9th to October 9th	44	23
Manchester	July 9th to October 9th	7	2
Port Antonio	July 9th to October 9th	1	1
St. Elizabeth	July 9th to October 9th	1	1
San Salvador	July 1st to 31st	38	11
	August 1st to 31st	84	19
	September 1st to 9th	14	12

CHOLERA. FOREIGN.

China, Hong Kong	September 4th to 11th	..	1
India, Calcutta	September 11th to 25th	..	21
Madras	October 18th to 24th	..	7
Singapore	August 1st to 31st	..	1
Japan, Kanagawa Ken	September 2d to 9th	1	1
Tokyo Fu	September 2d to 9th	..	..

SMALL-POX. UNITED STATES.

Louisiana, New Orleans	October 16th to 23d	1	
Pennsylvania, McKeesport	October 17th to 23d	..	1

SMALL-POX. FOREIGN.

Egypt, Alexandria	August 7th to September 11th	..	1
Cairo	August 7th to September 16th	..	1
India, Calcutta	September 4th to 25th	..	1
Scotland, Glasgow	October 2d to 9th	1	
Russia, Odessa	October 2d to 9th	1	
Moscow	September 26th to October 2d	2	1
St. Petersburg	October 2d to 9th	1	1
Warsaw	October 2d to 9th	..	..

PLAGUE. FOREIGN.

India, Bombay	September 14th to 21st	..	1

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

MEDICAL AND SURGICAL GYNÆCOLOGY. By Dr. R. W. Garrett. 8vo, 419 pages. Illustrated. J. A. Carveth & Co., Toronto, Canada.

TRANSACTIONS OF THE WISCONSIN STATE MEDICAL SOCIETY FOR 1897. Vol. XXXI. 8vo, 667 pages.

A MANUAL OF LEGAL MEDICINE. By Dr. J. Herold. 8vo, 678 pages. Illustrated. J. B. Lippincott Company, Philadelphia.

TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION FOR 1897. Vol. XIII. 8vo, 250 pages.

LECTURES ON THE MALARIAL FEVERS. By Dr. W. S. Thayer. 8vo, 326 pages. D. Appleton & Co., New York.

FACIAL DIAGNOSIS. By Dr. A. F. Reinhold. 8vo, 106 pages. Illustrated. A. F. Reinhold, New York City.

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CUTANEOUS MEDICINE. Part II. By Dr. L. A. Duhring. 8vo, 404 pages. Illustrated. J. B. Lippincott Company, Philadelphia.

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TWENTIETH CENTURY PRACTICE. Vol. XII. Mental Diseases, Childhood, and Old Age. Edited by Dr. Thomas L. Stedman. William Wood and Company, New York.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION. Vol. XV. Edited by Dr. DeForest Willard. 8vo, 600 pages Illustrated. William J. Dornan, Philadelphia.

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Original Articles.

ON SOME UNUSUAL FORMS OF APOPLECTIC ATTACK.

BY M. ALLEN STARR, M.D., F.R.C.P.

NEW YORK,

PROFESSOR OF DISEASES OF THE MIND AND [illegible] IN THE COLLEGE OF PHYSICIANS AND SURGEONS, MEDICAL DEPARTMENT OF COLUMBIA UNIVERSITY; CONSULTING PHYSICIAN TO ST. ELIZABETH'S, ST. VINCENT'S, AND ST. MARY'S HOSPITALS, AND TO THE NEW YORK EAR INFIRMARY.

To the lay mind and to many physicians apoplexy and paralysis appear to be synonymous terms. Even in many of the text-books the varieties of apoplectic attack possible are not clearly stated. Hence it seems proper to call the attention of the profession to cases which, though exceptional, occur; and in which the sudden onset of cerebral symptoms, quite of the nature of apoplexy, is not attended or followed by any paralysis.

If a moment's consideration is given to ordinary apoplexy, it will be recalled that its chief feature is a sudden attack, usually characterized by complete loss of consciousness, in which the person falls as if struck; (ἀποπλήσσειν, to strike), and followed by more or less complete hemiplegia, which is attended by aphasia when the paralysis is upon the right side of the body. This is so commonly the history that the ordinary association of the hemiplegia with the apoplexy has led to the conclusion that such an association is inevitable. Such apoplectic attacks are usually due to a hemorrhage in the brain, or to embolic or thrombotic suspension of circulation in the cerebral arteries; although it is never to be forgotten that such a stroke may be the first sign of a brain tumor.

But the various parts of the brain differ widely in their function, and hence it is to be expected that hemorrhage or embolism will produce different effects according to the part of the brain which is affected. It is well known that hemorrhage and embolism are far more common in the domain of the middle cerebral artery than in that of other blood-vessels. And the middle cerebral artery supplies the motor area of the brain and its adjacent speech areas with blood. Hence the usual effect of a rupture or an obstruction in this vessel is the production of the ordinary form of apoplexy with paralysis.

If, however, some other vessel in the brain—the anterior cerebral artery, the posterior cerebral artery, or some branch of the basilar artery—is obstructed or ruptured, the motor area of the brain will escape, and in such a case there is not necessarily any paralysis attendant upon the attack. In such cases the local symptoms of the attack will vary according to the region of the brain affected. In every case there will be evidence of brain destruction, just as serious, just as permanent, as the paralysis attending the ordinary attack; and the prognosis regarding recovery must be as guarded and the care of the patient during recovery as rigid as though a severe hemiplegia were present. I call attention to these facts because I wish to emphasize the need of care both in prognosis and in treatment, for it has been my experience that too little importance is often attached by physicians to attacks of an apoplectic nature when it is found that they are not followed by paralysis.

The following cases illustrate the statements made:

CASE I.—Male, aged forty-one, while convalescent from a short continued fever, his only illness for several years, went to Las Vegas, an elevation of seven thousand feet, arriving in a weak condition. On the night after his arrival he awoke twice with very intense pain in the left frontal region, and was obliged to rise and pass unusually large quantities of water. On the second occasion he suddenly felt a numb sensation over the entire right side, the pain in the head became more intense, and he fell over upon his bed. He did not lose consciousness and soon got up to call some one, but on opening his door he found that he could not recollect the name of any one or speak. He made a noise, however, attracting help. When seen by a physician within an hour he seemed bewildered, talked in a rambling manner, misplacing words so that it was difficult to understand what he wished to say, but he had no paralysis anywhere. For several days this condition remained stationary, his mind being bewildered and anxious, his speech becoming, however, clearer, his chief complaint being of a sensation of numbness in his right side, which was not, however, attended by actual anæsthesia or by any paralysis. He was brought to Kansas City after two weeks, and thought he improved as he came down to a lower altitude. During the following two months there was a slow but continuous change for the better, though his memory for recent events, for things he read or heard from day to day, was wholly untrustworthy.

Examination here ten weeks after the onset showed a thin, pale, anxious, nervous man, able to tell his story slowly, with some slight hesitation for words at times, but a fairly clear consciousness of his condition. In talking the effort of attention wearied him; he would seem distressed, bewildered, and lose the thread of his conversation. He complained that he could not concentrate his attention, that it was a great effort to think, that he could not read or write without exhaustion, and that he was confused and forgetful. Yet examination failed to show actual aphasia, agraphia, or alexia; there was no paralysis, no loss of sensation, no hemiopia or deafness. The pupils were equal and normal in size and action. The discs were clear. The knee jerks were equal. There was no cardiac or arterial disease, and no nephritis. The subsequent history was one of slow improvement, and at the end of ten years he is alive and able to work, but has a feeling that his mental capacity is not so good as it was before his attack.

CASE II.—Male, aged fifty-four, previously in good health, was suddenly seized, while reading quietly, with severe pain in his right frontal region and with vertigo, attended by great anxiety and prostration. He soon vomited and had a movement of the bowels, after which he was very weak and confused in his mind and talked with difficulty. Dr. Gill Wylie saw him within an hour, found him in a state of shock, with slow feeble pulse, profuse sweat, great weakness, and extreme mental confusion; a slight left facial paralysis with deviation of the tongue to the left was

noticed. He reacted to stimulation, but for ten days appeared to be ill, was too weak to stand, and any exertion produced vertigo and nausea. He suffered constantly from headache in the right frontal region.

Examination on the tenth day showed a large, muscular, well-nourished man. Pupils equal and acting normally; discs clear, with veins rather large; very slight paresis of the left side of the face and tongue; no paralysis of the arm or leg, though the left knee jerk is greater than the right; and no anæsthesia or subjective numbness; speech clear. His chief complaint is one of great mental confusion. He cannot fix his attention on anything, and any effort to think, to read, to listen to talking, or to talk is painful, so that he feels completely incapacitated for all mental activity. This mental feebleness is in striking contrast to his physical condition. He does not trust his memory or judgment, and is much distressed at his failure of mind. This condition gradually passed off. At the end of a month there was no trace whatever of any facial paralysis and his knee jerks were equal. He still had occasional headache and vertigo on any physical effort. Slowly his feeling of mental confusion subsided. At the end of six months he was able to return to his business, and during the past ten years he has had no return of his symptoms and no recurrence of the attack.

Case III.—Male, aged sixty-seven, who had been failing in vigor and in mental power for three years, was suddenly seized with an attack of great weakness, prostration, and confusion of mind and distress, attended by great difficulty in respiration, inability to inhale, with apparent obstruction at the larynx. He was seen by Dr. R. P. O'Neill, who found a weak, slow, intermittent pulse; irregular respiration, much labored; profuse, cold perspiration; and a marked mental confusion and a slight weakness of the left side of the face. From this attack he gradually recovered, but he has never been well. He has no control over his emotions. He cries or laughs indifferently when he talks, there being no actual connection between the train of thought and the emotional exhibition. To ordinary questions he replies intelligently, but his memory is poor for recent events, his judgment is weakened, he has no confidence in his own mental actions, appeals constantly to his wife for correction of his statements, and his emotional instability is most painfully apparent. He laughs at nothing and cannot stop, or he cries and sobs and recovers his composure with much difficulty, complaining that he cannot control himself, and yet that there is no occasion for this evidence of emotion. There is no corresponding mental state of amusement or of distress. The emotional act is as uncontrollable as a convulsive twitching or spasm would be, and equally without intention. There is no paralysis, there is no sensory disturbance except a subjective tingling of the left hand. His knee jerks are increased. There are no cranial nerve symptoms.

This patient has been under my observation for the past four years, during which his condition has been practically stationary. He is more feeble, has to make a great effort to talk aloud, and has never recovered his emotional control to any degree, but he has had no attacks and he has no paralysis or disturbance of sensation. His blood-vessels are rigid and his heart is weak and at times intermittent.

Case IV.—Female, aged fifty-two, had suffered from trigeminal neuralgia for many years at intervals, but was otherwise in fairly good health without evidence of nephritis or cardiac disease. On the 12th of June it was noticed that she was unusually drowsy and dull during the morning, and this drowsiness gradually increased to a state of semiconsciousness, in which it was difficult to arouse her attention or to make her move. This was associated with a very great contraction of the pupils, with superficial rapid respiration, and a feeble but not rapid pulse. There was no apparent paralysis, but there was no control of the sphincters. For thirty-six hours she remained in this condition, there being no rise of temperature, and then the stupor became somewhat less, but she could not be aroused sufficiently to talk intelligently. There was no apparent loss of sensibility, but the left side of the face was slightly flattened and the left side of the tongue was partly paralyzed. The pupils were less contracted; pulse, 78; respiration, 24; temperature, 99° F. She was able to swallow, but still allowed everything to pass from her without notice. During the following week there was a gradual but steady improvement in the condition. She became brighter mentally, conscious of her surroundings, recognized her family, was able to answer questions intelligently, but slept most of the time when not actively aroused by the nurses. By the end of two weeks but little trace was left of the facial paralysis and the tongue no longer deviated; the pupils had come to their normal condition, reacted perfectly; there was no evidence of congestion of the retinal vessels; the motion of the eyes was perfect, vision good; there was no deafness, no anæsthesia or paralysis in any part of the body; and from this time there was a gradual but steady recovery of health, until she returned to her previous normal condition. It is thought, however, by her family that she is a little less active mentally, that her memory is not quite so reliable, and that her emotional control is somewhat defective, as she becomes excited and irritable more easily than formerly and shows more emotional excitement upon little provocation than she did in a state of health.

I think it is evident from these histories that attacks quite of the nature of apoplexy occurred in each case, but not attended by paralysis of a permanent or very noticeable character.

The location of the lesion: In these four cases the location of the lesion was probably in the frontal lobe of the brain. This was evident from the location of the sudden severe pain in the frontal region and upon the side of the lesion, from the symptoms of slight confusion of speech and slight facial paresis of temporary character, and more especially from the mental symptoms. It is an accepted fact that mental confusion and dulness, an inability to concentrate the attention, to pursue a train of thought, to exercise self-control, and to conduct the highest mental processes are almost uniformly produced by lesions in the frontal lobes.[1] These were the most marked symptoms in the first three cases. An emotional condition of unusual character also points to the frontal lobe as the site of the lesion. Seguin called attention to this many years ago, and recently Brissaud[2] has confirmed the fact by recording a number of such cases. It seems to be more commonly caused by lesions of the right frontal lobe, and hence is often associated with left hemiplegia in patients who are paralyzed. The condition is one of a more or less complete loss of control over the outward manifestations of the emotions, so that crying or laughing without cause is observed, and the patients admit that they do not know why they are showing such emotion and cannot help it. In all these cases the lesion must have been in the domain of the anterior cerebral artery.

In the following cases somewhat different symptoms were manifested:

Case V.—Male, aged fifty-four, was suddenly seized, while in the act of walking, with a sensation of numbness and coldness in the left foot, which ex-

[1] See "Contribution to Cerebral Surgery." McBurney and Starr, American Journal of the Medical Sciences, June, 1893.

[2] "Leçons sur les Maladies du Système Nerveux." Paris.

tended up the leg, involved the side of the body and the arm and side of the neck, but did not reach the face. It was not attended by any loss of consciousness, pain, vertigo, or sense of prostration, and he had no feeling of weakness. When I saw him three months later the sensation of numbness persisted and was attended by a feeling of intense cold in the left leg, body, and arm, so that he insisted even during the heat of summer in having the arm swathed in cotton. He could perceive a light touch of cotton everywhere, but felt it differently on the two sides, the left being numb. The sensation of pain was less acute in his left side except upon the face. All warm objects were felt as cold, and cool or cold objects were painfully cold in the left arm and to a less intense degree in the left leg and side of the body. There was no paralysis, no loss of muscular sense. All the cranial nerves were normal. There were no general symptoms. His arteries were rigid, but the heart was not diseased. The condition remained stationary for several years.

Case VI.—Male, aged sixty-two, who has a well-marked mitral regurgitant murmur and extremely rigid arteries, suffered in 1893 from a slight attack of left hemiplegia which passed away gradually, leaving a disagreeable and permanent sensation of numbness in the left hand. During the summer of 1896 he had an attack in which he noticed a headache, a sensation of vertigo, and a sudden obscuration of vision in the left eye. This was attended by a condition of prostration, in which he was seen by Dr. W. C. Campbell, who found his heart very weak and intermittent, but his mind perfectly clear. There was no anxiety, no aphasia, no paralysis, but an examination showed that the supposed dimness of vision in the left eye was really a bilateral left hemianopsia. In the course of two weeks the general symptoms subsided under appropriate treatment, and since that time he has been attending to business. But the left homonymous hemianopsia remains, a careful perimetric diagram of the visual fields taken in October and again in December, 1896, showing that the blindness in the left half of both eyes is a permanent symptom. The field of vision is shown in Fig. 1.

Case VII.—M——, aged sixty-five, a hard-working banker, had been apparently in good health until March 14, 1897, when he suddenly fainted and had a slight convulsion. This was followed by a condition of prostration of an unusual degree, and for a week he was confined to his bed. Then, on attempting to get up and move about, he had a second slight convulsion, which is said to have been limited to the right side of his body. This attack was followed by great confusion of mind, by a slight weakness of the right hand, and a mild degree of aphasia, in which he misplaced words though he talked freely. The paralysis and aphasia had entirely passed away three days later, when I saw him, but his mental condition of confusion, inability to concentrate the attention, to give a connected and intelligent account of his condition continued, and he complained of great distress and pain all over the top of his head.

Examination showed a loud, direct, aortic murmur, and very tortuous and rigid arteries without any increased tension. There was no nephritis. He was extremely pale and mentally he was very feeble, being apparently unable to conduct a connected conversation, though his speech was in no way affected and he was not at all paralyzed. He was able to read and to write, but it was found that he could not add up figures or make ordinary computations, although this was part of his daily business. Further examination showed a right bilateral hemianopsia which had not been noticed by himself or by his physician. He was advised to remain in bed, not to exert himself in any way, and was ordered caffeine and iodide of potassium, five grains three times a day. On the 4th of April he had another attack of faintness and increased mental confusion, after which the sensation was slightly affected in the right hand and leg. He continued in a feeble condition, gradually losing weight and becoming more and more exhausted, and died the 1st of July. He never recovered his mental balance or his power of thought and judgment, and although he developed no further symptoms of the nature of paralysis, his hemianopsia and hemianæsthesia remained until the end. He died suddenly in an attack of unconsciousness.

In these cases the lesion must have been in the domain of the posterior cerebral artery. This was clearly the case in the patients who suffered from hemianopsia. It will be noticed on the chart that the hemianopsia was not exactly homonymous; that is, the field of vision differed in the two eyes. This is supposed to indicate a subcortical lesion in the course of the visual tract, as distinguished from a strictly cortical lesion in the cortex of the calcarine fissure, which Henschen has shown conclusively to be the site of the primary visual centres.[1] We may conclude

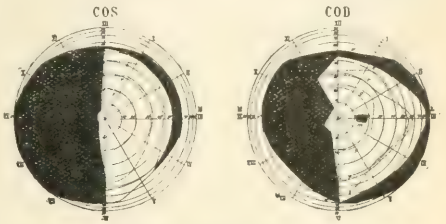

Fig. 1.—Field of Vision in Case VI.

therefore in these cases that some branch of the posterior cerebral artery passing into the base of the occipital lobe was occluded.

The course of tactile and temperature sense fibres through the brain is still not satisfactorily settled. My belief is in the existence of the cortical receptive centres for these sensations in the parietal lobe, and hence in the patient with constant sensations of cold in the arm I should locate the lesion within the parietal lobe beneath the cortex.

Case VIII.—Female, aged forty-nine, who had been decidedly nervous while going through the menopause, was suddenly seized with a sensation of numbness in the left hand, which soon extended to the left side of the body and leg, and then was felt in the right side of the face. The feeling was as if the entire left body and right face were asleep or dead, the sensation extending up the neck and over the back of the head to the vertex on the left side, and involving the forehead, face, and jaw on the right side. At the same time she noticed a ringing in the ears, a difficulty in swallowing, and when she attempted to move and to talk she found her motions awkward and some defect in the pronunciation of words. She was seen immediately by Dr. Runyon, of South Orange, who found her in great mental distress and alarm, with a weak pulse, but no disturbance of consciousness or paralysis. Her condition had remained stationary when I saw her within a week of the attack.

Examination shows vision normal in the right eye, slightly defective vision in the left eye from an old atrophy of the optic nerve, but the visual field is good. The right pupil is sluggish and does not dilate in the dark, but reacts normally, like the left, to strong light and in accommodation. The eyeballs move upward and downward well, but do not converge to near objects, and cannot be turned to-

[1] "Pathologie des Gehirns," Upsala, 1895-96.

gether toward either side beyond 20 degrees; yet each alone can be moved freely when the other is shaded, hence there is defect of conjugate action of the eyes. There is marked nystagmus on any attempt to conjugate action. In rest the eyes look forward without strabismus; there is no ptosis. She complains of a constant sensation about the eyes, "as if they were set in stone in her head." The right side of the face feels numb and cold, and tingles constantly. It is hypersensitive to touch, to heat and to cold, and to pain; any contact making the paræsthesia most intensely disagreeable. This condition extends to the inside of the mouth and to the gums, but not to the tongue. The face is not flushed or pale, and is not paralyzed. The left side of the face is perfectly normal. Hearing is normal. She complains of difficulty in swallowing, and occasionally chokes. The tongue protrudes toward the left without tremor, and her speech is somewhat thick and lisping on this account. All motions of the head and neck are perfect. Her pulse is uniformly rapid, 110 to 130; respirations are regular and normal. On the left side of the head at the back, including the neck and back of the ear, and over the entire left side of the body, including the extremities, there is a continual sensation of tingling and numbness, which is increased by any contact. There is in this region hypersensitiveness to pain and to heat and cold, and touch is said to be more keenly felt, but the æsthesiometer shows that two points are felt as one on the tips of the fingers of the left hand at three millimetres' distance, while they are felt as two at two millimetres' distance on those of the right hand. All movements of the left extremities are extremely ataxic, but there is no loss of power. She holds the hand in an awkward position, fingers and thumb being overextended. In attempts to make motions there is a lack of adaptation, it being impossible to execute any voluntary movement accurately with the eyes closed. She is not able to state in what position her fingers and hand are when her eyes are closed, and cannot reproduce in the right hand positions given to the left, though she can place the left hand at once in positions given to the right hand. She cannot distinguish with any degree of accuracy between different weights in the left hand. Thus there is a very marked loss of muscular sense in the left hand. The same condition is present in the left leg, all motions being awkward and standing being impossible. No wrist or elbow jerks; knee jerks equal and normal; no ankle clonus; no incontinence of urine or fæces; no paralysis of arms or leg; systolic murmur at apex of heart and accentuation of the second sound at the base.

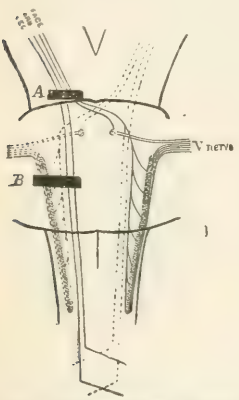

Fig. 2.—The Sensory Tract in the Crus, Pons, and Medulla, showing Nucleus and Roots of Fifth Nerve. Lesion *A* causes hemianæsthesia; lesion *B* causes alternating hemianæsthesia, right face and left side of body. Lesion *B* in Case VIII.

Three weeks later her condition was not materially changed in any way, the pulse being still 120 and the tingling being constant and almost unendurable. During the following months, however, her symptoms gradually subsided, and when I saw her one year after the attack the tingling had become less intense though it was still present; the ataxia had disappeared; the eyes could be moved in all directions well, though nystagmus was produced by all conjugate movement laterally; and her pulse was still rapid. She could walk well and was able to attend to household and social duties.

The diagram explains the necessary situation of the lesion in the pons Varolii in all such cases.

Cases of alternating hemianæsthesia are quite rare. I have recorded two.[1]

To these cases I add two cases of cerebellar apoplexy:

Case IX.—Male, aged seventy-three, was suddenly seized on July 10, 1895, with vertigo and soon after with headache and vomiting attended by great prostration. The latter symptoms gradually subsided and after two weeks he was able to be up and about, but he has suffered ever since from vertigo and he staggers in walking. He is never dizzy when lying down or when seated quietly, but as soon as he attempts to walk he becomes unsteady, feels as if he were going to fall, and in his attempts to steady himself sways somewhat from side to side and walks with an irregular gait which resembles exactly the gait seen in cerebellar disease. Any physical or mental exertion will increase the staggering and the vertigo. He occasionally suffers from a sense of pressure and fulness in the back of the head and from headache, and when these symptoms are present he staggers more and his legs feel heavy. He has no trouble with sight or hearing. His ears are normal. His digestion is perfect, and there is no evidence that the vertigo is from the stomach, eyes, or ears. He has no paralysis and his knee jerks are normal. He has no sensory symptoms. For two years there has been a stationary condition, but gradually he has noticed that motion of his eyes upward causes vertigo even when he is seated.

Case X.—Female, aged sixty, had a slight hemiplegic attack in 1889 from which she recovered entirely. About August, 1893, she had a sudden attack of a cerebral nature, attended by vertigo, headache, and prostration, from which she recovered slowly, her feebleness and apparent sense of weakness being out of proportion to any actual objective symptoms. From that time, however, until I saw her with Dr. T. M. Markoe, in March, 1895, and again in October, 1895, she had suffered constantly from a sense of unsteadiness whenever she stood up or walked. There was no vertigo while she was seated or lying down, but any attempt at standing, at walking, or going up and down stairs produced the sensation of instability and uncertainty, so that she required a cane or the aid of an arm. When thus steadied she felt relieved and could walk fairly well, but without support she had a typical cerebellar gait.

The examination showed nystagmus on movement of the eyes in any direction. There was no paralysis. The knee jerks were normal. There was a loud aortic direct murmur, and her arteries were rigid. There was no condition of the eyes, ears, or stomach at all sufficient to account for the vertigo.

The diagnosis in these two cases was a small vascular lesion in the cerebellum affecting the mechanism of equilibrium, which is known to be located in that organ. The cases could not be classed with ordinary vertigo, because the vertigo was never felt when the patients were lying down or when they were seated, was not caused by gastric or aural disease, and was permanent and continuous for years. In one case it was associated with nystagmus, and in the other it was produced by looking upward. It is known that the cerebellum controls and has a close relation to ocular movements. Hence these symptoms confirmed the suspicion of the cerebellar origin of the disease. Furthermore, the characteristic gait of cerebellar dis-

[1] New York Medical Record, February 11, 1893, "Familiar Forms of Nervous Disease," Case XVII., p. 122.

ease was manifest in both patients to a marked degree. The persistence of the knee jerks in these cases cannot be asserted as pointing to a normal cerebellum. The loss of knee jerk is not a constant symptom of cerebellar disease, as has been recently asserted. I have records of twenty-six tumors of the cerebellum, in twenty of which the knee jerks were increased, in three they were normal, and in three only were they lost. The knee jerk was not lost in any one of eight cases of cerebellar tumor recently reported by Jacobson and Jamene.[1] It must be regarded as a rare symptom of disease of this organ.

The nature of the lesion in cases which are not fatal is always a matter of conjecture, as there are no positive means of differentiating hemorrhage from thrombosis. That the lesion was a vascular one in all these cases is evident from its sudden occurrence. That the attack was not the first symptom of a tumor, as it may be in any case, is demonstrated by the progressive recovery or stationary state of all the patients. The recovery does not, however, prove that the lesion was a hemorrhage and that the clot was absorbed; for in many cases of thrombosis, especially of cortical blood-vessels, the collateral circulation is so perfect that repair is quite commonly effected. Hence the nature of the lesion must be left uncertain. When such attacks occur—as they frequently do—in the course of a case of general paresis, they are due to a hæmatoma of the pia or dura.

The severity of the lesion differed in the different cases. Here the resemblance of these cases to those of hemiplegia becomes apparent. In some cases of hemiplegia the symptoms subside slowly and power returns; in others a permanent paralysis results. This is due to the extent and position of the lesion, and to the degree of damage done to the motor tract. The same thing is true in cases of apoplexy with mental or with sensory symptoms, and the fact that no paralysis is present does not argue that recovery will ensue. In the emotional patient and in the patient with hemianopsia there has been no improvement at all and never will be. The same is true of the cases of cerebellar disease. Hence caution must be exercised in giving a prognosis in all these cases. And it is well to remember that as complete incapacity for professional work or for business may be caused by a lesion of the frontal lobe causing mental weakness, or by a cerebellar lesion causing vertigo, as by a lesion of the motor zone causing paralysis or aphasia.

As to the treatment of such cases, it is to be remembered that all the precautions against allowing effort of mind or of body during the period of repair are to be enforced just as they would be in a case of hemiplegia. A hemiplegic is kept quiet for weeks after his attack. There is no reason for allowing a man with equally extensive lesion in the frontal lobe to go about because he does not happen to be paralyzed. In hemiplegia attempts to improve the condition are made by regulating the circulation, dilating the blood-vessels by nitroglycerin, and aiding the heart in cases of thrombosis and cardiac weakness; enforcing perfect quiet and using laxatives, cold applications to the head and iodide of potassium in cases in which hemorrhage is thought probable. The same treatment should be carried out in these cases. And too great care cannot be taken to prevent a too hasty return to ordinary occupations and to those business and social anxieties which tend to put a strain upon brain action or upon the cardiac and vascular systems.

Catarrhal Pneumonia in Children.—Tincture of veratrum viride in small but frequently repeated doses until the pulse and respirations are lowered.—SUTLIFF.

[1] Arch. f. Psych., xxix., 80, 1897.

DISEASES OF THE MASTOID: THEIR COURSE AND TREATMENT.[1]

BY FRANK S. MILBURY, M.D.,

BROOKLYN, N. Y.

OTOLOGIST, OPHTHALMOLOGIST, AND LARYNGOLOGIST TO THE BEDFORD DISPENSARY AND HOSPITAL, AND THE NORTH BROOKLYN EYE, EAR, AND THROAT HOSPITAL.

BEFORE beginning the consideration of this paper, I wish to request your attention for a few moments to some of the anatomical features of the middle ear and mastoid.

It is an air-containing space, lined throughout with mucous membrane, and continuous with the covering of the nasopharynx and adjacent parts. Its divisions are the Eustachian tubes, the tympanic cavity, and the mastoid cells. The first is the channel of connection between the pharynx and the tympanum, and consists of two portions, the cartilaginous and osseous, the widest opening being pharyngeal and the narrowest point at the junction of the soft and the bony parts. It is from one inch to one and one-third inches long, the osseous portion constituting about one-third of its length; the two portions are formed at an obtuse angle. Its direction is obliquely outward, backward, and slightly upward. The tubal mucous membrane contains throughout a ciliated epithelium destitute of glands, the movements of the cilia being away from the tympanic cavity, thus aiding in the drainage of the tympanum and partially preventing its invasion by pathogenic organisms from the rhinopharynx.

The tympanic cavity is an irregular pneumatic space, with its longest diameters vertical and lateral, containing the ossicula; it consists of two portions—the atrium, immediately behind the membrana tympani, and the attic, which lies above the membrane. The communication between these two is quite narrow, owing to the arrangement of the ossicles and folds of mucous membrane, and therefore a slight inflammation and swelling of the tissues may easily shut off the attic space, producing interference with its drainage, this being a serious factor in middle-ear pathology. The mucous membrane lining the tympanic cavity is thin and delicate, and closely adherent to the underlying bone; its epithelium is usually tessellated, and may in places be ciliated, as is most frequently the case in the vicinity of the Eustachian orifice. A little above, continuous and posterior to the attic, the mastoid antrum is situated; it is the only pneumatic space developed at birth, the others being formed subsequently. Not infrequently a second cell of considerable size is found at the tip of the process. The mastoid process, both externally and internally, varies greatly in its construction; thus we may have those which are entirely pneumatic, those which are pneumatic and diploetic, those which are wholly diploetic, and, lastly, those which are altogether sclerotic, excepting the antrum. Zuckerkandl, in the examination of two hundred and fifty bones, found 36.8 per cent. completely pneumatic, while 42.8 per cent. were partly diploetic and partly pneumatic, and 20.4 per cent. entirely diploetic or composed of dense osseous tissue throughout. These conditions are also found to vary on the two sides, one side being partly pneumatic and the other completely so. From such examinations it is evident that a sclerotic process does occur normally and also as the result of inflammatory action. The position of the lateral sinus varies greatly in different individuals, sometimes being one inch or more posterior to the wall of the meatus; and, again, the bend of the sinus is so sharp that it extends forward so near to the posterior

[1] Read before the section on otology and laryngology at the forty-eighth annual meeting of the American Medical Association held at Philadelphia, June 1–4, 1897.

wall of the meatus that opening the antrum would be impossible without wounding this venous channel. To the operator the position of the sinus and the middle cerebral fossa is of special importance, and many efforts have been made, by the examination of specimens, measurements of the skull, and its outward conformation, to determine the location of the sinus; but all such researches have proven useless. Dr. Politzer states that in five hundred temporal bones which he examined he found the position of the sinus most favorable when the mastoid process was strongly developed and entirely filled with pneumatic cells. In these cases there is a broad space between the sigmoid sinus and the posterior wall of the external meatus, which in operating permits access to the antrum without danger of wounding the sinus. He found the relations less favorable in the diploetic and compact mastoid processes. How are we to know positively whether the process is diploetic or pneumatic? Hence for practical purposes these investigations prove as useless as others.

We will now take up the individual mastoid diseases.

Primary periostitis is very rare, and when it does occur is usually the result of traumatism or exposure, but sometimes is without any traceable cause; the latter is usually the case in persons of a cachectic condition. Only a few cases have been reported.

Secondary periostitis, however, is quite frequent, and is due to acute or chronic middle-ear suppuration or necrosis, the process extending outward from the tympanum until the mastoid covering is reached. It occurs oftener in early than in adult life, owing to the much greater liability of the young to ear disease. In acute middle-ear suppuration it is most frequent when free drainage is interfered with, as from a very small perforation badly placed, or from a possible pus retention by the blocking up of the opening with powders—as boric acid, alum, and some of the more adhesive new products. The fluid must find exit, and will do so at the point of least resistance. This may be:

1. Through the external mastoid cortex or into the external meatus.
2. Through the digastric fossa.
3. Through the roof of the antrum or the tympanic wall into the middle cranial fossa.
4. Into the posterior cranial fossa, by rupture usually, into the groove lodging the lateral sinus.

If the cranial cavity is invaded, meningitis is induced, and may be diffuse or circumscribed. In the latter the limit appears to be caused by the formation of an epidural abscess, the infectious material being walled in on all sides by adhesions between the dura and adjacent walls. Internal rupture may occur, or the free anastomosis between the blood-vessels and the dura and the pericranium may provide the channel through which the infectious material may pass to the brain, producing an intracranial abscess or a thrombosis of the lateral sinus. Unfortunately these lesions often occur simultaneously, thus greatly increasing the danger to life.

Until within a comparatively recent period the operation for acute disease of the mastoid was the principal surgical operation upon the ear. It was near the end of the fifteenth century that Riolanus proposed opening the mastoid cells; later, about the year 1655, Sir Thomas Brown advised against such a procedure; and it was not until one hundred years later that the operation was first performed by Petit for the removal of secretions. In 1776 Jasser performed the operation for necrosis of the bone with great success, but after his decease surgeons lost sight of the true indications for operating and perforated the bone for various purposes, until the death of Bergen, a noted Danish surgeon, upon whom the operation was performed for the relief of deafness and ended in fatal meningitis. This caused the procedure to fall into disrepute, and nearly a century elapsed before it was revived by Forget (1849), Follin, and Troeltsch (1859).

When there were inflammation, swelling, and tenderness over the mastoid, Troeltsch made an incision down to the bone to prevent necrosis, and if the symptoms indicated a deeper seat of the disease he perforated the bone with a blunt probe. To prevent injury to the brain or lateral sinus, he placed the instrument on a line with the meatus, and worked it forward and inward in a horizontal plane. If the cortex was thick he used a small trephine. The sinus was kept open by means of a piece of gauze.

To Schwartze is due the credit of developing the operation; by 1883 he had reported one hundred cases, which was the largest number reported up to that time.

Acute inflammation of the mastoid cells varies according to the stage in which the patient comes under observation. Acute otitis media without perforation is often accompanied by symptoms of mastoid irritation, which usually subside with slight antiphlogistic measures. In acute inflammation of the mastoid cells the prominent symptoms are: (1) Intense continuous pain over the mastoid and radiating over the side of the head and in the neck, which is increased on pressure and percussion; redness, heat, and œdema of the skin. When the abscess becomes localized the pain generally remains fixed at one point. (2) The membrana tympani appears strongly bulged forward before the pus perforates; following perforation a nipple-like projection is often found in the posterior-superior quadrant of the membrane, on the tip of which the perforation is situated. (3) A swelling and bulging of the posterior-superior wall of the canal, causing a narrowing of its lumen, and shutting from view all or a part of the membrane. These two latter points are very indicative symptoms. Free discharge from the ear exists, which rarely ever ceases while the mastoid inflammation continues. However, the only absolutely positive sign of a mastoid abscess is pus found within its interior on opening it. The temperature usually ranges from 99.5° to 102° F., but is seldom higher.

The course of the affection varies considerably in different cases—in some running to a fatal termination in a few days, and in others requiring weeks and months and possibly years before indicating positive symptoms. In chronic otitis media purulenta the extension to the mastoid is often without characteristic symptoms. The quality and quantity of the discharge varies greatly, now very slight, now copious, according as there is a narrow or a free outlet for drainage from attic and antrum. A thickened cheesy pus may exist for a long time in the mastoid cells without indicating itself by any symptoms except a stubborn fetid otorrhœa, resisting cure in spite of thorough cleansing of the tympanic cavity. We may be almost sure of retention of pus in the antrum, provided caries of the external canal, ossicles, or walls of the tympanic cavity may be excluded.

Inflammation of the mastoid process and fever occur only through traumatism or the retention of pus in the cells. They may subside, only to reappear. Sharp pain on pressure, united with œdema, may have existed a long time without producing any perceptible change in the periosteum and the bone surface. If the bone is greatly sclerosed and very dense, and the cortex much thickened, which conditions may be congenital or occur as a result of chronic middle-ear suppuration, such acute symptoms may never arise, even in a long course of the disease. However, the absence of the same cannot be looked upon favorably as a prognostic sign, for it is often just such cases that prove

rapidly fatal through pyæmia. Zaufal and others have called attention to the frequent existence of optic neuritis, neuro-retinitis, and choked disc in inflammation of the mastoid process, at times bilateral, at times unilateral, and not always on the affected side. The course of the morbid process in bone affection varies in different cases. Extension of the inflammation in an outward direction, with periostitis and abscess, is the most common course. Several such abscesses, in more or less rapid succession, over the mastoid process, are indicative of disease of the bone. Occasionally the pus finds its way down the side of the neck, and forms a swelling of considerable size; or it may pass forward to the side of the pharynx, and downward even as far as the pleura; or it may extend into the cranial cavity and set up trouble in the lateral sinus, or involve the Fallopian aqueduct and the membranes of the brain.

Next to opening through the cortex of the mastoid, the most frequent point is through the posterior-superior wall of the external canal. If not recognized early it may cause such excessive bulging of the canal wall as to prevent free discharge. If seen at the proper time a generous opening followed by copious syringing may suffice to empty the mastoid process of all deleterious substances, such as pus, cholesteatoma, the cheesy exudate, epidermis masses, and even sequestra if very small. Bezold has well described those uncommon cases as mentioned above. When rupture takes place toward the digastric groove, or on the median surface of the mastoid process, owing to its deep position beneath the fasciæ the pus easily finds its way into the submuscular tissues and along the course of the large vessels, and causes swelling in the side of the neck with abscess formation. In the early stages no perceptible difference may be seen between the sound and the diseased side. After the swelling beneath and on each side of the sterno-cleido-mastoid muscle has developed, deep pressure over the tip of the mastoid elicits acute pain. An early recognition of the condition is necessary, since from the consolidation of the parts invasion of the cranial cavity is likely to occur. In favorable cases the carious and necrotic portions are exfoliated, the granulation tissue is absorbed, and healing takes place. Several good recoveries have been reported, even after the whole of the mastoid process has been exfoliated. Again, only small portions of bone may be detached, and fistulous openings may remain indefinitely or until properly dealt with.

The prognosis in these cases of mastoid disease varies with the cause, extent, and severity of the affection and with the general health of the patient. Following an acute otitis media, promptly attended to, the prognosis is usually favorable, but in some such cases the advance may be so rapid as to baffle all efforts to check it. It is unfavorable in tuberculosis and in chronic purulent otitis with pent-up secretions, when the case has been neglected and has a history of intermittent febrile attacks and several previous attacks referable to the mastoid region which have disappeared spontaneously or under palliative measures. The prognosis is always serious whenever there are symptoms of extension of inflammation to the membranes of the brain. Attacks of partial or complete unconsciousness, restlessness, and feverishness are of extremely grave import when occurring in a person suffering from disease of the mastoid process.

In the treatment, if the case is seen early, an attempt should be made to abort the attack by antiphlogistic measures. If the membrana tympani appears greatly congested, swollen, and bulged outward, simultaneously with pain in the mastoid process, which is increased on pressure, a paracentesis of the membrana tympani should be made at once to permit the pus in the middle ear an opportunity of free exit; and in a spontaneous rupture, when not sufficiently large, it must be enlarged. After free drainage has been obtained, frequent antiseptic irrigations should be instituted and carried out faithfully. A brisk purge should be administered, followed by the application of cold to the mastoid by means of the ice bag, iced cloths, or, what is better, the Leiter coil. The ear may be syringed with the apparatus in place. It is better to keep the coil in position continuously for twenty-four hours, and under no condition should it be kept on longer than from forty to fifty hours. Painting with iodine, blood letting by means of leeches, and rest in bed are also to be employed. In influenza cases the Leiter coil does not appear very effectual in stopping the formation of abscesses. Cold is usually very soothing and is borne well. Often the pain will entirely disappear through these means while the patient is in bed and quiet, but on exertion in his duties the symptoms return. And hence it is said by some writers that if marked improvement has not occurred within forty-eight hours, operative treatment will be necessary subsequently, if not at once. If abortive measures have not been successful, then operative interference must be resorted to, and the following symptoms as laid down by Politzer and others are generally recognized as indicating the operation:

(1) Painful inflammatory infiltration of the covering of the mastoid process, especially if an accompanying narrowing of the meatus or obstruction of the tympanum by granulations renders it probable that a septic condition exists in the mastoid process. The operation becomes imperative when there are high fever and signs of meningeal irritation, and when the symptoms in the mastoid process have repeatedly occurred and resisted all antiphlogistic treatment.

(2) Spontaneous pain in the mastoid process, increased by pressure and accompanied by bulging of the posterior-superior wall of the meatus.

(3) Persistent or occasionally remittent pain in the mastoid process, with marked tenderness, even if there be no swelling of the external integument and no apparent obstruction to the escape of discharge from the tympanic cavity.

(4) When cholesteatoma existing in the tympanic cavity cannot be removed, or after its extraction with the malleus and incus the condition is not improved by careful irrigation.

(5) Fistulæ in the mastoid region and gravitation abscesses below them.

(6) Extensive caries and necrosis of the posterior osseous wall of the meatus.

(7) In all cases of middle-ear suppuration, during which symptoms of meningeal irritation or of incipient sinus phlebitis make their appearance.

(8) Continued septic suppuration in the attic, the symptoms remaining unchanged after removal of the malleus and incus and several months' energetic treatment, even if there are no general symptoms excepting an offensive otorrhœa.

(9) Pain in the mastoid process, developing, in certain rare cases of connective-tissue hypertrophy, in osteo-sclerosis, and in osseous scars after the healing of a mastoid operation.

The Operation.—A few hours before the operation the patient should be given a thorough bath, the parts within a radius of three or four inches of the ear should be carefully shaved, and, if the patient is a man, the beard should be removed; then the whole side of the head and neck must be energetically washed with soap and water, rinsed with sterilized water, and rubbed with ether to remove all oily substances. The ear is syringed with a solution of bichloride of mercury (1 to 1,000), and a wet dressing of the same is

applied over the entire field of operation until the patient is anæsthetized.

The antiseptic dressing is now removed, and the parts are again cleansed with bichloride and the ear is tamponed. All instruments are sterilized by boiling, and the hands and dress of the operator and assistants should receive the same careful attention as is demanded in all surgical operations. To some all these precautions may seem unnecessary, but when he begins a mastoid operation the surgeon never knows what he may be compelled to do, as through anomalous positions of the parts, or owing to extensive necrosis, the cranial cavity may be entered, either accidentally or as he may find it necessary to extend the operation to these parts.

The incision through the soft parts should be made from the tip of the mastoid and carried upward in a curved line, one-fourth inch posterior to the insertion of the auricle and to its upper attachment. It is better to make the cut, if possible, with one sweep of the knife. This is practically what is known as Wilde's incision, and its value has been greatly overestimated, as it is admissible in children only when the cortex is very thin and may be opened by firm pressure of the knife or a sharp curette; or the pus may itself find an outlet. In the adult, however, experience has taught all operators that it is not advisable to stop here, as the cortex is too dense and non-permeable. It certainly is not wise to do this and delay to ascertain what further may develop, and subject the patient to a second anæsthetization and operation when the whole work should have been completed at first. Dench states that the division of the soft parts within the meatus over the mastoid practically meets all the indications of external incision. Next elevate the periosteum, pushing the entire anterior flap forward. The bleeding vessels should be taken up with artery forceps or ligated. The parts are held back with retractors so that the posterior and superior margins of the bony canal are distinctly seen, and the whole field of operation is laid bare. The bone should be carefully examined for fistulæ or carious spots, which if found will serve as a guide for entrance into the bone. If none is found we proceed to open into the antrum, which is just behind the posterior margin of the meatus and just below its superior margin. Until entrance has been gained to the antrum the opening through the cortex should never extend above the superior wall of the meatus, and the operator should keep close to the posterior wall, thus avoiding the middle cranial fossa and a possible wounding of the lateral sinus, which may be misplaced. The cortex is best removed with a broad chisel and mallet, the chisel held parallel to the surface of the skull, and the bone cut away in thin, broad chips, the opening extending inward and forward and gradually lessening in size until the antrum is reached. This never lies less than one-half inch below the surface, although large pneumatic spaces may be found near the surface, which may lead us astray unless we are cautious. To prove it, bend a probe at the tip and pass it downward, forward, and inward for a distance of three-fourths of an inch or more, at which depth it should pass into the tympanic cavity; thus we know that the antrum has been reached and passed through.

A free entrance to the antrum having been gained, any particles of bone or cholesteatomatous masses of granulations must be removed, and the opening to the middle ear freely curetted and enlarged to give sufficient drainage. We occasionally read of cases in which, after penetration to the extreme line of safety (about five-eighths of an inch), no antrum is reached and the operation is abandoned. This need never happen. If we cut to the usual depth without finding the cavity, we should direct our canal more forward, so as to bring its apex over the meatus, when we can easily chisel into the attic. The membranous meatus may be dislodged from the posterior wall and pushed forward, or the entire cartilaginous meatus turned out, thereby making entrance to the attic quite easy. The latter method will apply to a sclerotic process. If, after the antrum is entered, no pus is found, the large cell at the apex of the mastoid must be particularly investigated, all carious and necrotic bone removed from the mastoid, and its tip excised if carious.

The operation should be continued until sound bone is encountered in every direction. If the inner plate is diseased it may be removed with almost perfect safety, as an exposure of the dura is not a grave matter under proper precaution, whereas to leave carious bone at this point is very dangerous. Exposure or even a wound of the lateral sinus, either accidentally or intentionally, is not so serious a matter as has heretofore been considered. It can be recognized by its bluish-gray color. If the vessel is opened sharp hemorrhage ensues, which if easy of access may be readily controlled by a firm compress of iodoform gauze held by an assistant, when the operation is proceeded with as if this had not happened.

The good effects of opening the mastoid antrum and cleansing the middle ear are often manifested within a few hours after the operation. The pain and temperature are both diminished, alarming symptoms subside, while the state of the middle ear rapidly improves. Subsequent to the operation, when the septic suppuration continues after weeks or months of careful treatment there probably exists a carious affection of the tympanic cavity or of the ossicula. If lumps of epidermis repeatedly appear in the irrigating fluid, it is certain that there is a cholesteatoma in the attic, which indicates an operation on the tympanic cavity; this will be described later.

The operation being completed, dressing the wound is in order. I insert into the antrum a drainage tube and pack loosely around it dry iodoform gauze, but not the external wound, merely keeping the edges separated by a strip of gauze. A tampon is placed in the meatus and the whole well covered with sterilized gauze and cotton. With a favorable course of healing it is sufficient to change the bandage every five or six days. If the temperature does not exceed 101° F. at any time during the first five or six days, or if elevated and not persistent, there will be no necessity of changing the dressing. When it is changed for the first time, the wound and canal should be irrigated with a sublimate solution (1 to 8,000 or 10,000), and the wound cavity examined carefully for remaining granulations and roughness, which if found must be scraped away.

If there are a return of pain after the operation, increased temperature, and much septic discharge, which would be indicated by a rapid soaking of the bandages and a fetid odor, a daily change of dressing is indicated. So long as the secretion is ill-smelling I use sublimate solution in the strength indicated above. After the bad smell disappears I use a one-per-cent. boric-acid solution. This must be continued until suppuration ceases. The supposition of Küster and Bergmann, that syringing out the operation cavity should be avoided, has not been sustained by the profession. So long as there is suppuration in the tympanic cavity the communication between it and the wound must be kept open for free drainage, and only when there is a certainty that suppuration has ceased may the wound be allowed to heal. Occasionally there remains, after the most careful treatment, a sinus in the mastoid process connected with an abscess cavity which requires a second operation. The duration of after-treatment varies from three or four weeks to one or two years

before suppuration ceases, and sometimes cannot be controlled no matter what is done.

It is wonderful what beneficial effect the operation often has upon the general system, which may be readily understood when we realize that the blood is kept constantly in a more or less septic condition.

Since 1891 the mastoid operation described above has been the typical one, but the collective experience in aural surgery for the last few years has shown that it proves insufficient in many cases, and so search for a more effectual process has developed several methods. In 1891 Stacke, of Erfurt, Germany, made known a new operation in chronic cases, based upon the surgical principles involved in the treatment of suppurations within rigid-walled cavities; namely, upon the complete and free laying open of the cavity, so that it can be curetted, tamponed, and treated surgically, and the operator not be compelled to satisfy himself with a more or less imperfect irrigation. The method of Stacke is practically as follows: The cutaneous incision is made a little differently than has been described, the upper part being kept closer to the auricle and carried well around to the front. The lower end must also curve more forward and extend to the tip of the process, the cut, as it were, circumscribing the auricle. The bone being bared, the membranous meatus is separated from the posterior and superior walls, and, its attachment internally being cut, is in its entirety shelled out of the osseous canal. With a small gouge or Dench's cutting forceps the most medial portion of the superior wall of the osseous meatus (lower lateral wall of the attic) is cut away, and, if present, the malleus and incus are removed. The superior wall is to be chiselled away near the drum insertion till a bent sound touching the tegmen tympani meets with no resistance on being drawn outward. The probe, as a guide, is then turned toward the antrum, and the posterior wall of the meatus chiselled away till that cavity is freely opened up. In this way Stacke converts attic, tympanum, antrum, and meatus into one large cavity. After being cleansed, the auricle is replaced and sutured; the lining membrane of the osseous canal is split and pressed as far back into the enlarged cavity as possible by the iodoform gauze. All subsequent treatment is done through the meatus.

This operation proving extremely difficult and unsatisfactory, other methods were suggested, and now what may be known as the Schwartze-Bergmann-Stacke operation has been quite generally adopted. My experience has taught me that it is the ideal one in all chronic conditions which have resisted cure after the ossicula have been removed. I now rarely perform any other, and am exceedingly happy with the results obtained. It is much quicker, easier, and safer than the Stacke operation, and is done as follows: The incision over the mastoid and the entrance to the antrum is made as in the original mastoid operation. The membranous meatus is dislodged as in the Stacke, and held well forward by a retractor. The operative field now shows the posterior-superior osseous canal, the antrum, and a bridge of bone separating them. This bridge is now removed by rongeur forceps and chisel, the section being triangular in shape, the apex at the neck of the antrum. Thus the antrum, tympanum, and meatus will be converted into one large cavity. Care must be taken at this point not to wound the facial and semicircular canals which lie directly across from this point. As a protection, if a sound is passed through the antrum into the middle ear, or, if not possible in that direction, from the middle ear as far as possible into the attic, and we confine our operating to that, we shall be within safe limits. A wound in the external semicircular canal is more unlikely to occur than one of the facial nerve.

As much of the bone should be removed as is compatible with safety, so as to make the antrum and attic as accessible as possible from the external canal. There must, however, be a ridge remaining between the meatus and antrum. In this operation I find the dental engine a most useful adjunct. The posterior membranous canal is now split outwardly to the concha as in the Stacke, and pressed back as far as possible into the enlarged cavity and held in place by tamponing.

According to Stacke, the tamponing of the membranous meatus into the artificial opening has a double advantage: (1) it secures the formation of a persistent skin-covered communication between the antrum and meatus; (2) it is a skin transplantation, from which the formation of epidermis over the entire cavity can take place. The better way, I believe, is to suture the wound over the mastoid and get primary union if possible, and do the entire treating through the meatus. If all goes well the dressings are to remain five or six days, after which daily tamponing must be most carefully followed out.

The granulations must be kept down and the cavity kept as freely accessible and of the same size as just after the operation. Even when the utmost care is taken, minute necrotic pieces of bone become surrounded by granulations, and small fistulous canals are formed leading to these dead pieces, around which the suppuration continues even after it has entirely ceased elsewhere.

The duration of the after-treatment varies in these cases also, but is, on an average, as experience has shown, several months shorter than by the old method, and the cure is much more permanent. The indications for this operation are about the same as for the ordinary mastoid.

TRAUMATIC PARALYSIS OF THE UPPER EXTREMITIES.[1]

BY JOHN E. LEHMANN, M.D.

Considered from a medico-legal standpoint, these lesions are of sufficient importance to entitle them to more elaborate consideration than can be found in the text-books of the present day. The literature is sparse, possibly on account of these conditions having arisen less frequently before the modern operating-tables came into vogue, as a large number of the traumatic paralyses classed as postoperative or anæsthetic paralyses are due to the arms of the patients being allowed to fall on the sharp or narrow edge of these tables, and as a result pressure takes place and paralysis of certain muscles or groups of muscles follows.

In a recent article entitled "Anæsthesia Paralysis,"[2] Dr. H. J. Garrigues presents histories of fourteen cases, of which five occurred in his own practice. He also quotes Kron as stating that elevation of the arm backward and outward causes the median nerve to be stretched over the head of the humerus, and, as this is a position of the arms favored by some anæsthetists, it can readily be seen to form one of the causes of these conditions.

Büdinger, also quoted in the same article, states that a frequent cause of these paralyses is pressure, occurring between the clavicle and the anterior surface of the first rib, on the brachial plexus as it emerges between the scaleni in the neck. It would appear to the author that frequently in these anæsthetic cases,

[1] Read by title before the New York State Medical Association, October 13, 1897.

[2] Journal of the American Medical Association, January, 1897.

apart from the position of the arms and forearms, trouble is caused by the anæsthetizer in one or more of the following ways: In attempting to prevent the dropping of the inferior maxilla the fingers, well abducted, are very often, particularly in beginners, placed very firmly along the neck, so as to give a strong brace for the index in supporting the angle of the jaw; by this means one or more of the fingers press upon the fifth, sixth, and seventh cervical nerves (these being the most frequently involved), near the exit between the scaleni, and, as frequently is the case, the head is rotated to one side and the nerve or nerves are compressed between the fingers and the vertebræ. Again, as has often been observed by the writer, the anæsthetist will be found leaning or bearing his weight upon the patient's arm or forearm, especially so when the patient's arms are drawn above the head, thus causing pressure of the nerves to take place between the humerus of the patient and the anæsthetist's arm or between the humerus and the operating-table. Again, some of the assistants, in their overassiduous endeavors to hold a patient down during the stage of excitement, produce the trauma either by firmly encircling the arm with the hand and thus compressing the nerves, or by holding the arm down against the sharp or narrow edges of the table. The author has on several occasions seen one of these assistants throw his entire weight upon the upper extremity and chest, using the trunk of his body to hold down one arm, and by reaching across the patient's chest hold down the arm of the opposite side with his hands.

Recently a case of this class, *i.e.*, of postoperative paralysis, was referred to me with the following history:

Case I.—Male, aged about thirty-six, bartender by occupation, had his forearm cut by the explosion of a siphon of seltzer on June 10, 1897. The injury was at the junction of the lower and middle thirds of his forearm, and cut the flexors of his little, ring, and middle fingers, possibly also that of the flexor carpi ulnaris. No attempt was made to unite the severed tendons, and the injury was healed in three weeks. The only impairment of function was in the fingers mentioned. The thumb and index finger were uninjured, as the patient stated that he used them constantly.

On July 19th he was operated upon with a view to uniting the severed tendons. An incision eight inches in length was made on the ulnar border of the forearm, and as far as can be judged at the present time with perfect success as far as union of the divided tendon is concerned.

September 5th, he was referred to me, and examination revealed a complete paralysis of all the muscles of the forearm. The only motion of the forearm retained was feeble supination, and that was demonstrated as being due to the action of the biceps.

The operator in the case was an able and careful surgeon, and the incision certainly could not have implicated any but the ulnar nerve. That this lesion could not have been an ascending neuritis entirely, is evident from the fact that the function of the thumb and index and of all extensors was perfect previous to the operation; and that these functions were abolished shortly after the operation points to a pressure trauma of operative origin, possibly to the use of an Esmarch bandage for a bloodless operation, in addition to the table pressure by reason of the extension of the forearm and arm.

In addition to the postoperative or so-called anæsthetic paralyses, it happens frequently enough that the surgeon sees cases of paralysis following dislocations of the shoulder, especially when not reduced for some time; cases of fracture of the humerus, in which the musculo-spiral is involved in the callus or in fibrous tissue, or by stretching of the nerve over an angular deformity; contusions of the shoulder followed by deltoid paralysis due to the involvement of the circumflex, etc.; paralyses due to pressure in the axilla caused by the use of crutches or by tumors, etc.; paralysis caused by sleeping with the head resting upon the arm or forearm; and, as in one case recently seen by the author, implication of the ulnar nerve in a marksman who used his elbow as a rest while shooting in the prone position at the Creedmoor rifle range.

Case II.—Complete paralysis of the upper extremity following unreduced dislocated shoulder of three weeks' standing. D. S——, about twenty-two years of age, sustained an injury to his left shoulder while bicycling at Liberty, N. Y. A diagnosis of dislocation of the shoulder was made and the ordinary treatment applied. Twenty-one days after the injury he was referred to me, and upon examination a subcoracoid displacement was found to exist, which apparently was rather firmly retained by adhesions. He complained of inability to use the arm, considerable pain in his elbow, and tingling with numbness of the fingers, particularly those supplied by the ulnar nerve. A complicating pressure neuritis was diagnosticated, and the possibilities of paralysis were told the patient. As will be seen, this was a wise precaution.

After the patient was anæsthetized in my office, the shoulder was reduced with some difficulty. Within ten days after the reduction there was a total paralysis of the entire arm and forearm, with rapid atrophy particularly marked in the muscles of the hand. Electrical reaction was retained both to the faradic and galvanic currents, but was finally lost. The return of reaction to the galvanic current was manifested about twenty-one days after its loss and within six weeks the return of contraction with the faradic was observed. The patient left my care about eight months after the injury was received, with an arm and forearm considerably smaller than those of the opposite side, but with restored function in all of the muscles.

Case III.—Complete upper-arm paralysis from contusion. Mr. R——, track inspector, was struck by the Empire Express and was thrown about twenty feet. He was referred to me two days later by Drs. Piatti and Thompson, of Greenwich, Conn. Upon examination he was found to have sustained a compound fracture of each of the bones of the right forearm near the wrist, and a simple one of the ulna at its middle. Drs. Piatti and Thompson had made an excellent skiagraph, which showed the latter fracture very distinctly. In addition, the entire right shoulder and right half of his thorax were ecchymosed. The fractures were treated as usual in these cases, and complete repair was observed in the sixth week. It was noted at this time that the deltoid, which formerly was exceptionally well developed, had atrophied to a very small and useless mass of tissue, allowing the shoulder to drop so that it was mistaken for a dislocation. He was again referred to me, and in addition to the deltoid atrophy we found a complete paresis of the entire upper arm. A cure was obtained in about six months in this case.

Case IV.—Musculo-spiral paralysis following a fracture of the humerus. W. K——, aged thirty-nine, driver, while attempting to check a runaway on September 2, 1896, was knocked down and sustained a fracture of his left humerus about the junction of the lower and middle thirds. He came under my care on November 23d, with a history of paralysis of his lower-arm muscles, etc.

Upon examination it was found that the fragments had united without the formation of any excess callus, but with a slight angular deformity, the lower fragment being forward. In examining the functions of the wrist and fingers it was noted that extension was abol-

ished, with the exception of extension of the distal and mid phalanges of the index, middle, ring, and little fingers. This naturally was ascribed to the action of the lumbricales and interossei. Supination was lost, except to a slight degree obtained by the action of the biceps. He complained of tingling in the region of the radial-nerve supply, numbness of the fingers, and some pain in the course of the nerve.

Operation was advised to release the musculo-spiral, and accepted. November 24th, with the patient under ether, the musculo-spiral was cut down upon, and instead of being found in a bed of callus it was found to be compressed by a dense band of fibrous tissue binding it over the angle formed by the vicious union. The angle of vicious union being so slight, refracture was deemed inadvisable, and chiselling away the point of bony pressure was resorted to. This patient was discharged with good function in the previously paralyzed muscles about six weeks after the operation.

Diagnosis, as a rule, is an easy matter. The history of an injury with a following loss of power and atrophy in one or more muscles or a part of the extremity, with tingling, numbness, shooting pains, sometimes loss of sensation in certain areas, and frequently œdema or swelling of the extremity or fingers —all point to traumatic paralysis.

Prognosis usually is good, but it may require eight or twelve months for a return of proper functions, while the return of power as it existed before injury may take from one to two years. If the patient is placed at work as soon as voluntary muscle contractions return it will assist very materially in bringing about a rapid recovery. The mere fact of loss of reaction to galvanism after loss to faradism need not provoke an unfavorable prognosis, as this condition usually abates within a few weeks.

Treatment resolves itself into the use of strychnine and potassium iodide internally; massage from one séance weekly to a séance daily; the use of the faradic and galvanic currents, as indicated by the return of reaction of degeneration; and a support to the extremity, particularly to overcome the possibility of stretching that will take place in one set of muscles (the paralyzed ones) at the expense of the other, as by the use of a palmar splint to prevent wristdrop, etc. The use of a splint will also be found to aid materially in the return of power in the paralyzed muscles. The use of artificial muscles cannot be too strongly commended; in two of the reported cases the writer had ordinary dress hooks sewed upon a leather glove of the Dent or Fowne variety, a hook sewed upon each of the fingers of the glove corresponding to the paralyzed fingers, and a set of hooks above the wrist in direct line of traction of the tendons; then ordinary elastic bands were hooked on, until a slight degree of overtension was obtained. This glove was worn in the daytime, and at night the splint was applied.

149 West Forty-Fourth Street.

Gastro-Intestinal and Hepatic Relations of Gout. —1. Gout is a definite disease to which certain individuals are predisposed, but which depends for its development upon causes largely unknown. 2. Laziness and full nitrogenous diet and the use of fermented liquors predispose to the disease. 3. So-called lithæmia, as the term is popularly applied, is not gout, but is an auto-intoxication depending upon gastro-intestinal and hepatic derangements. 4. The diet in gout should be largely free from nitrogenous substances. 5. The diet in lithæmia must be ascertained by a careful study of the primary digestion, the urine, and the general health of the patient, but a nitrogenous diet is often the most satisfactory one.—Charles G. Stockton.

ALCOHOLISM IN WOMEN — ITS CAUSE, CONSEQUENCE, AND CURE.[1]

By AGNES SPARKS, M.D.,
Brooklyn, N. Y.

Alcoholism in women has heredity as a genetic factor to a lesser degree than in men. Departures from ancestral health find their entailment in the gentler sex more often along the line of other and less complex neuroses.

Alcoholism in women presents somatic factors in causation in larger measures than in men. The mistaken ethics of a social code that impels to accept, all too often, the proffered poison, and so tend steadily down to a disturbed physique that involves structural impairment and a badly crippled *morale*, does not obtain so largely among them.

Apart from the frequency with which alcohol is used to spur flagging energy, to obtund distressful feeling, or bring oblivion from cark and care, probably the genetic condition most often met with is one involving painful performance of her special function. The average woman finds this a time of discomfort more or less pronounced, to relieve which rum in some form is used—a heritage of tradition both in precept and practice unsafe—with a result, just as in the pernicious plan of giving opiates at these periods, of inducing a recurring condition of rise and fall as regards well being until the interim is fully bridged, and a state of more or less steady inebriety ensues.

The most potent cause is twofold. First in frequency is a neurasthenic condition due to lack of nutrition and the wear and worry of domestic life and social demands—an exhaustion for which relief is mistakenly sought in the transient aid of alcohol, all unaware or unmindful of the vital fact that its taking involves large risk of creating a morbid condition that often finds expression in inebriety.

The other factor is the pain and unrest incident to disorders of their sex, for which solace is found in the anæsthetic and paralyzing effects of alcohol—an effect that with startling and sorrowful frequency ends in this toxic disease.

Inebriety from a fondness for alcohol *per se*—vicious indulgence—obtains less often in women. Why this is so goes without saying, and so this neurosis in them presents the strongest possible proof that its origin lies in perturbed physical conditions; in fine, that it is a disease: no mere moral obliquity, as many—well meaning, but mistaken—would have us believe.

The consequence of alcoholism in women is less promptly patent than in men. Albeit none the less sure, it obtains more slowly. This from varied causes that act over larger area and with greater energy in men. In the earlier stages of inebriety in those cases in which volition is not entirely ended, a peculiar shrinking from publicity protects some women against the objective symptoms noted among men at a like period of their disease; but with increase of toxic power due to constant or recurrent taking this protective shield gives way, and a well-marked consensus of symptoms, psychical and somatic, lays bare the varied ravages of the disease. Among them the latter lead, and early and often those along gastric lines. To detail is not needed; but—so well masked may be the true status —in every case of marked disorder in this regard, if not yielding to the usual remedies, the doctor should make bold to question the patient, direct, as to rum being a factor for ill.

With progress of the toxic force widespread disturbance of functions presents—scarcely any escape—and as the disorder deepens into structural change the

[1] Read before the New York Medico-Legal Society, October 20, 1897.

signs of health infraction become more pronounced and prolonged.

On ovulation the alcoholic impress is one of deranged rather than, as in opium inebriety, suspended action, and so it comes to pass unfortunately that the average female alcoholist is not sterile. Just the reverse obtains with the woman morphinist, and it is one of the mysteries of a divine economy that this beneficent law does not extend the same wholesome result in her alcoholic sister, and so shut off in large measure a diseased, depraved progeny that tends to curse every community with a physical and moral blight, the extent of which is beyond compute, and with which no other agent for ill can compare.

Sequelling visceral disturbance comes psychical derangement, ranging from slightly erratic outbreaks to furious maniacal outbursts, or a more or less steadily stupid condition. The latter is less frequent than in men, the inebriety of women more often being periodic. While the signs of psychical ill-health may be less gross than in men, they just as surely show the fell power of this poison to distort and destroy along higher lines of life, and transform many a winsome woman into one far removed from her gentle self and deserving the largest measure of sympathy and relief.

The prognosis of alcoholism in women eligible for treatment is better than in men. Barring advanced cases, the outlook for recovery is hopeful to an extent that warrants placing every patient under proper care. The betterment gained by well-directed treatment in some cases is surprising, and were this fact well known, would, it is safe to say, lead to a larger optimism among medical men as to cure. Risk that the disease will recur is large. This, however, by persistent treatment, favoring environment, and watchful care, may be brought largely to a minimum, and many a life seemingly given over to a rum bondage till death can be reclaimed.

The treatment of alcoholism in women, to be most effective, must be twofold—curative and preventive. Touching the former, modern medicine has made such advance as places present treatment much in the van of everything that has been. As a valued psychical adjunct, the doctor must be firmly impressed with a belief in his power to help, and the impress of this opinion must be made on the patient to the full if the maximum of good would be gained. A supreme confidence along this line is an immense factor in reaching the goal desired, and so far as concerns non-coercive care is almost a *sine qua non*.

The remedial agents of greatest worth in warring on this disease are strychnine, arsenic, electricity, and hypnotism. But before any of them can be made of most service certain untoward conditions claim attention. The gastro-alvine status must be righted, and nothing will better do this than a mild nightly mercurial and a morning aperient water. Uterine luxations should be reduced, ovarian discomfort must be ended, and, unless removal be called for, galvanism holds out the largest promise for good.

The question of abrupt or gradual rum quitting will present. Case conditions must decide. If possible, the former should obtain. As a rule, fear of ill result is unfounded, and the effect on the patient's *morale* will be good. If sudden stopping be deemed unwise, let the usual stimulant be discarded, and alcohol in like amount be given with milk, to be ended as soon as possible; or, better still, the compound tincture of cinchona combined with nux vomica and tincture of gentian, or the mineral acids.

The way for the main treatment having been paved, strychnine leads the list. There have been such a consensus of opinion and such a volume of fact to this effect as cannot be gainsaid or set aside. It is best given subcutaneously, in the form of nitrate, one-thirtieth to one-twentieth of a grain thrice daily. As a rule, it will be best not to exceed the latter dose, and if strychninism presents a decrease is in order. The average alcoholic is very tolerant of this drug; this fact should not be forgotten. These full doses may be given a month, if well borne; after that, one-sixtieth to one-fortieth of a grain will suffice, and with or without arsenic should be given for months.

Arsenic in inebriety is not given the credit it deserves. It is a *multum-in-parvo* remedy—a general tonic, a non-neuralgic, an antimalarial, a nutrition promoter; in fine, an all-round roborant, admirably adapted to the cure of this disease. Fowler's solution is best—four to eight drops after each meal. It may sequel the strychnine giving, and not be pushed beyond slight face puffing. It should be long continued—in this is its chief value—four to twelve months.

Electricity is another remedy, the worth of which in the treatment of inebriety is much more than the average doctor will admit. Ignorance of its value comes from inexperience. Study and practice of this valued aid must be had if one would be well equipped. There are few facts in medicine better fixed than the power of galvanism to raise the lowered nerve tone and relieve the varied neuralgias so common to this disease. Constant-current séances, ten to twenty minutes each, may be given daily for weeks, and a specially opportune time, when sleep is impaired, is at night. When used for neuralgia, each of the attacks, be they frequent or few, must be met promptly. The faradic current, while less widely useful than the constant, may be given daily, twenty-minute séances, general faradization, as a tonic and to remove the peculiar unrest—"fidgets"—noted in some cases.

Hypnotism acts best in periodic cases. Séances should be had between drinking-bouts. No case should be deemed unyielding till several attempts have proved futile. It is very effective in some temperaments. The condition of each case must govern as to time and extent of séances. To a minor degree most women can be brought under hypnotic influence if, as we have urged, the physician be largely optimistic as to treatment and will stamp the impress of that optimism on the patient. In every case effort to this end should be made. Despite adverse opinion, hypnotism is sometimes an immense power for good.

We have noted the biggest guns in the battle with this disease. Minor ones are of value. Full feeding ranks first; generous diet, with cod-liver oil and malt if need be, must be given. If patients be pallid or heart action weak, steel and strophanthus should be used. The Turkish bath fills an important rôle as sedative, eliminant, and soporific. A morning cold shower is a capital tonic. If a hypnotic be needed, trional outranks all others; dose, fifteen to thirty grains, dry on the tongue, at 7 P.M., or in hot milk or bouillon at bedtime.

The pain peculiar to chronic alcoholism can often be eased by cannabis and quinine. If not, coal-tar products may succeed. All failing, an opiate can be given, but it must not be morphine; that is unsafe; it is snareful, chronic alcoholics take to it too kindly. Codeine may be given. This drug—for the greatly increased use of which in America during the last six years the profession is mainly indebted to Dr. J. B. Mattison—one-half to two grains of the phosphate or sulphate by skin or mouth, is an efficient anodyne, and the risk of tolerance is vastly less than with morphine.

One remedy, radical and a *dernier ressort*, remains to be noted. Granting the woman has been given treatment, proper, persistent, and prolonged, without avail, she should be asexualized. This, whether maid or matron—for many a former would not have the courage of conviction equal to that of a young woman brought to my notice, who refused an alluring

offer of marriage solely because she was a periodic alcoholic. It might be curative, it surely would be preventive; and better by far unsex the woman than have her beget a brood tainted with this curse of the world.

Special stress must be laid on the need for treatment long continued. Lack of this is the largest factor in failure. It is absurd to suppose that a system, bruised and battered by alcoholic excess for years, can be brought back to health in a few weeks or months. The good work must go on, if need be, for years. True, much may be done in some cases by less-protracted care, but as a rule the risk of recurrence makes the longer treatment of greatest worth. The skilful doctor repairs or retards the ravages of renal or cardiac disease by care years continued, and the same wise effort along alcoholic lines must obtain if the largest measure of good would be gained. There is great incentive to such effort. Even now, from thirty to fifty per cent. of alcoholic inebriates properly treated recover, and, with a clearer insight of causative conditions and a more extended remedial *régime*, there is full warrant to think this good result will be greater.

No case should be deemed beyond hope till every aid that scientific treatment can now surely extend, under either willing or coercive care, and continued if need be for years, shall prove of no avail.

So much as a present spur. When we face the future, and realize the fact that in the new century, so near, the question of the effects of alcoholism on the physical weal of humankind will be the question outranking all others, phthisis not excepted, to engage attention of scientist and sanitarian; when we give due thought to the fact that alcoholism is not only a curable but a preventable disease—we must be profoundly impressed by the immensity of its importance; and let our every effort array against it, for it compasses not only the welfare of a present host, but that of millions yet to be.

140 South Portland Avenue.

Clinical Department.

HEMORRHAGE INTO THE PERICARDIUM.

By U. S. BIRD, M.D.,
Tampa, Fla.

On July 20, 1897, during a cutting-affray, a healthy, middle-aged negro man received several wounds, which were properly treated. July 24th I was called to see him. The only serious wound was a stab in the left side, in the axillary line, at the level of the seventh and eighth ribs. This wound was horizontal, about one inch long, extending upward and inward for some two and one-half inches. From it, especially when he coughed, came a large quantity of bloody serum. There was some whistling through the lips of the wound during respiratory movements, but this ceased after a few days. His respiration was labored and rapid, preventing him from sleeping. Morphine partially relieved this symptom. As there appeared to be an accumulation of liquid in the chest, I used a large aspirating needle in the first interspace below the wound, but found nothing. By July 29th the discharge had lessened in quantity, but had become purulent. On August 2d I made an opening a little lower than the original wound, and packed lightly with gauze. By August 4th the discharge seemed enough only to dampen the gauze. On this day his condition was good. His breathing, which had been rapid and distressed, was 24 and easy. His pulse was 120, but improved. His appetite was good, and his bowels and bladder acted well. His feet became swollen a few days after I first saw him, and continued in that condition. Wednesday morning I saw him last. When I called August 5th, his nurse told me that he had coughed a little about daylight. After being raised to a sitting position he coughed up a little blood and immediately collapsed. She thought that by the time she laid him down he was dead.

About 2 P.M. I made an autopsy. When the sternum with the costal cartilages attached was removed, the pericardium was seen to be distended and of a bluish tint. This was opened and some ounces of black clot removed. The heart was compressed and empty. There were firm and extensive adhesions between its left surface and the pericardium, and between this part of the pericardium and the pleura. The heart was not wounded, but the pericardium had here sustained an extensive incised wound, similar to the external injury. There was a ragged wound in the lower edge of the left lung, which was also consolidated and adherent. There were no accumulation of liquid, and no apparent communication with the external wounds. His death was probably due to compression of the heart by the hemorrhage into the pericardium, which was probably due to the rupture of a weakened pulmonary vessel, caused by the exertion of coughing. In a sense, death was accidental. The loss of that quantity of blood was not likely to have caused death. A few days longer might have been sufficient for the formation of adhesions which would have made such a result improbable.

HYSTERICAL APHONIA.

By A. C. FOLLETT, M.D.,
Schenevus, N. Y.

In a recent issue of the Medical Record is an article by Dr. Sanger Brown, of Chicago, upon a cure of this affection by suggestion. I had my first and only case of this sort about two years ago, and I cured the patient (at least she recovered) in four days by means of suggestion. She had been aphonic for several months. I really brought her voice in one night. I told her to do this, that, and the other for three days—none of the things prescribed being more than a placebo. I gave minute directions to be accurately followed, and emphatically directed her to speak upon the fourth morning, which she did and not before. I previously had examined her vocal apparatus with the laryngoscope and had found nothing pathological.

A CASE OF PUERPERAL SEPTICÆMIA SUCCESSFULLY TREATED BY ANTISTREPTOCOCCUS SERUM.[1]

By H. SIFF, M.D.,
New York.

The object of this paper is not to try your patience with scientific speculations, numerous quotations, or new discoveries; I desire to report to you a case based on solid facts and supported by the opinion of some very eminent authorities, and if my views prove to be correct, and you, after weighing the cons and pros of the case should finally coincide with me, then the medical world may congratulate itself upon its success in dealing with and destroying the dreaded micro-organisms which are constantly at work undermining our vitality. The case I refer to is one of puerperal septicæmia successfully treated by antistreptococcus serum.

On the morning of March 19th I was invited to see Mrs. M——, on Grand Street. The nurse gave me the following brief history of the case: Mrs. M——, a primipara, after labor pains which lasted only about three hours, was delivered six days ago of a healthy little female child, weighing about nine pounds. The

[1] Read before the Eastern Medical Society, April 9, 1897.

midwife had no trouble with the placenta, and mother and child were in perfect health. This occurred on Friday evening, March 12th. During the following Sunday and Monday the parturient complained of headache, and Monday evening she had a prolonged chill.

On Tuesday a physician was called in. Cathartics and antipyretics were prescribed, but the patient grew worse. The temperature ranged between 105° and 106 F. During the following two days a similar line of treatment was followed, some intra-uterine antiseptic douches were given, and the physician in attendance wanted to curette, but the family objected. On Thursday vomiting set in, which resisted all treatment, and the temperature continued to range between 104.5° and 106° F.

On examination I found the uterus pretty firmly contracted and the os closed, although not completely, but sufficiently to exclude the probability of any retained secundines. There was no lochial discharge, no offensive odor, no excessive tenderness anywhere. Only a few small areas of slight tenderness over the fundus of the uterus could be mapped out. The temperature was 105.8° F.; the pulse thready and hardly perceptible; the heart's action feeble, accelerated, and beating 130 times per minute. The entire body was covered with a cold and clammy perspiration, a peculiar sweetish odor emanating from it. The face was flushed (showing several ecchymotic spots), the teeth and gums were covered with sordes, the tongue was brown, and the extremities were cold.

The mental condition of the patient was the one characteristic of septicæmia—slight delirium, general apathy, and indifference, always begging not to be disturbed, to be allowed to die, etc. The expression of the eyes was dull and lifeless. The two most distressing symptoms were persistent vomiting and insomnia, the patient not having slept for nearly seventy hours.

As the attending physician refused to treat the case for not being permitted to curette, I at his request took charge of it. I prescribed large doses of musk, nux vomica, strophanthus, and digitalis to prevent collapse, and ordered three ten-grain doses of sulphonal with some cocaine and sparteine to produce sleep and check the vomiting.

I pronounced the case septicæmia, but advised against curetting, as I was positive that there was nothing in the uterus to justify any such interference. Although I was confident of my diagnosis, I invited Dr. A. Jacobi in to the case. After a careful examination he expressed himself satisfied with the diagnosis of puerperal septicæmia, and advised intra-uterine injections of a solution of permanganate of potassium, 1 to 3,000.

On the next morning vomiting had ceased, the patient had slept a few hours, but the temperature was again 106° F., and the condition of the heart was so alarming that I had to give heroic doses of powerful stimulants, like musk, etc. I wanted to try some antitoxin, but I met with objection on the part of the family, as they had had some bad experience with diphtheria antitoxin. Dr. P. F. Mundé, who by invitation saw the case with me on that day, agreed with me on every point, and as there was nothing to lose, a fatal prognosis having been given, he also advised trying antitoxin. I procured antistreptococcus serum and injected into the hip ten cubic centimetres. This took place at 9 P.M., the patient's temperature then being 104.5° F. During the night the patient had diarrhœa in consequence of a powder of ten grains each of calomel and jalap, which I administered on the preceding evening. The diarrhœa was violent, about twelve or fifteen movements within eight hours; the patient became exhausted and seemed to be rapidly sinking. I hurriedly prescribed some opium, bismuth, and salol, and succeeded in checking the diarrhœa.

At 9 A.M., twelve hours after the injection of the serum, the rectal temperature for the first time since the onset of the disease was only 103° F., instead of the regular 106° of the preceding four days. The delirium had ceased and the patient was easier. I again injected ten cubic centimetres of the serum. This time the injection seemed to cause some pain, as the patient made quite an outcry, while during the first inoculation she seemed to be entirely indifferent to the pain of the needle.

Twelve hours later the thermometer registered 102.5° F. The appearance of the patient had changed. There was no longer that gaze of apathy and indifference, and the ecchymotic spots on the face had almost vanished. The tongue was no longer brown; it was still coated, but white, and the sordes on the gums and teeth were half gone. The senses of the patient, however, were at short intervals blunted, and she would, while speaking rationally, all of a sudden interpose an incoherent sentence. I examined the urine, and as the result was negative (thus satisfying me that the serum was assimilated, as otherwise the kidneys would have excreted some albumin) I again injected ten cubic centimetres of the antitoxin. This time I met with violent resistance on the part of the patient; she was sensitive to pain and was fully conscious of what was going on.

The next morning, thirty-six hours after the first injection, the temperature was 102° F. and the lochial discharge reappeared. At noon the thermometer registered 100.5° F., and in the evening 99.5° F. The temperature afterward never rose higher than 102° F. But then new trouble began—the heart's action became very irregular and alarmingly intermittent, especially so whenever the temperature was below 101° F.; it would then very frequently leave out two beats successively. After three days of stimulation by large doses of musk, cardiac action became normal and the patient completely recovered.

The question now arose in my mind: Was this recovery the work of the antitoxin, or was it merely a coincidence? Perhaps the septic poison was eliminated by the diarrhœa. Dr. Mundé, whose opinion should certainly command respect, ascribes this recovery to the antitoxin. Discussing this subject in a letter I received from him, he says: "I do not believe that the purgative did it. I am glad there seems to be at last an antidote for septic poison." I myself, conservative as I would like to appear, am convinced of the correctness of this opinion, not so much by the recovery itself as by the rapidity of its occurrence. To see a temperature of 106° F. fall to 99.5° F. in forty-eight hours is not usual with septicæmia of this type. I must admit that a rapid recovery may take place in some cases of puerperal septicæmia, but it should be borne in mind that only in such cases of septicæmia can this occur in which the cause is early discovered and promptly removed—as, for instance, in case of retained secundines.

As to the possibility of the septic poison having been eliminated by the diarrhœa, I do not think this can encroach upon the credit which I wish to claim for the antitoxin, for we all know that excretion is the rule in septicæmia; cold sweats and offensive diarrhœa are generally the agents which usher in the fatal issue, and cases of septicæmia which do terminate in recovery are mostly such as were not aggravated by diarrhœa.

Now some conservative minds may ask: Is septicæmia always fatal? To this I would reply that, while there may occasionally be recorded a case of recovery from puerperal septicæmia when the cause was not discovered and certainly not removed, I do not think

recovery probable in a case of such grave character accompanied by all of the distressing symptoms which I fully described above. Then, again, I would refer the sceptic to the rapidity of the recovery—forty-eight hours! That certainly is not usual.

While I am fully aware of the fact that it requires more than one test to convince a physician of the efficacy of a certain therapeutic agent or mode of treatment, I trust that the case described by me will give the obstetrician sufficient inducement to test this serum treatment. There is no reason why the streptococcus should enjoy more protection than the Klebs-Loeffler bacillus. There was a time not long ago when men high in the profession who are now ardent advocates of diphtheria antitoxin were relentlessly denouncing it as useless, dangerous, etc. They were quite sincere in that denunciation, which they claimed to base on the result of numerous statistics, until they finally were conquered by other numbers. Maybe we can now declare war on the streptococcus.

The fact that there are other pathogenic microorganisms present in the blood of a septicæmic patient should not deter us from attempting to destroy the one which is always present, even if this could result only in slightly lessening the virulence of the septic poison.

[illegible]

BILATERAL SUBLUXATION OF THE CRYSTALLINE LENSES WITH ECTOPIA OF THE PUPIL OF THE LEFT EYE.

By G. N. BRAZEAU, M.D.,

[illegible]

About two weeks ago a man came to consult me about his eyes, complaining of the great diminution in his acuteness of vision. The patient is thirty-four years old, healthy, and has a good family history. I found upon inspection a tremulous condition of both irides with ectopia of the pupil of the left eye. The pupil was at the sclero-corneal junction.

Ophthalmoscopic examination of the right eye, for it was impossible in the left, revealed a lateral subluxation of the lens toward the outside. The border of the lens was perceptible only on dilating the pupil. The margin of the lens appeared as a heavy dark curve, since the rays coming from the fundus of the eye to the margin of the lens were deflected from their course by virtue of the difference in the refractive media. There were a large staphyloma, however, not encroaching upon the region of the macula, and a small papilla, two conditions peculiar to myopic eyes. The patient was highly myopic, and despite the peculiar condition of the pupil in the left eye he could see with that eye sufficiently to find his way.

The tremulous condition of the irides suggested immediately to my mind the probability of an abnormal position of the lenses, which true enough was very manifest on ophthalmoscopic examination, and which I afterward verified by instilling atropine and securing that visual condition so peculiar to displacements of the lenses referred to above.

It was impossible to elicit from the patient or his friends positive information concerning the date of the origin of the tremulousness of the iris; however, the fact that he attended school until the age of eighteen, though myopic, and his chief complaint dated from September, 1869, lead me to believe in an acquired dislocation rather than congenital one.

On the other hand ectopia of the lens usually accompanies ectopia of the pupil, which is itself a congenital condition. From that fact together with the tremulousness of the iris, I believed in a displacement of the lens, although I was not able to see it as in the other eye. There exists with this ectopia of the lens either marked hypermetropia, myopia, or astigmatism; in this case it was myopia and astigmatism. The myopia in the right eye was partly overcome by the removal of the lens. The true anatomical cause for dislocation of the lenses lies in the alterations in the zonule of Zinn, which consist in either elongation, relaxation, or degeneration of its fibres. Both the lens and iris, being deprived of proper support, naturally must tremble. Any displacement of the lens gives rise to changes in the vision, particularly if it occupies a portion of the pupillary space. The part containing the lens becomes myopic on account of the extreme convexity of the lens permitted by the relaxed zonule, and the other hypermetropic from absence of the lens.

Astigmatism is also very marked, because the light is refracted unequally in the different meridians of the lens, a condition called regular astigmatism. Diplopia is also explained by the fact that the margin of the lens acts as a prism whose apex corresponds to the equator of the lens. Diplopia also results and neither of the two images is distinct, for one is seen by a hypermetropic eye and the other by a myopic one—the former corresponding to that part of the pupil deprived of the lens, and the latter to that containing the greatly convexed lens. In time nearly all subluxated lenses became luxated and opaque. Iridocyclitis is apt to result from the constant jerkings of the lens and iris in this latter condition.

The treatment consists in remedying by glasses properly fitted—a plus glass for the side deprived of a lens, or a minus for the side with it, besides proper correction of the astigmatism. Uveal complications require their special treatment.

A CASE OF STRANGULATED APPENDICAL HERNIA.

By F. D. VANDERHOOF, M.D.,

[illegible]

On August 5th, I was called to see Mrs. G——, aged fifty-seven years, whose general health was good, but who was inclined to be somewhat stout. She presented the general or usual symptoms of strangulated hernia, such as tumor in the groin, tenderness of the lower part of the abdomen, pain, nausea, etc. Gentle taxis was used with no success, and I then administered by hypodermic injection one-quarter grain of morphine sulphate into the tumor. After waiting an hour, I again tried taxis but with no better result, and, concluding an operation was necessary, called Prof. D. M. Totman, of Syracuse, in consultation. The patient was etherized and gentle taxis was again tried, but we could not reduce the mass. Dr. Totman cut down upon the tumor and readily found the sac, which contained about a half-ounce of fluid, but none of the usual contents of herniæ. Upon careful examination, to our great surprise, we discovered only the appendix forming the contents of the sac. The latter was firmly adherent to the femoral ring, and markedly injected but not otherwise diseased. The appendix was slightly congested and adherent to the sac at the ring; otherwise it was in normal condition. After we had broken up the adhesions and dilated the ring, it was decided to return the appendix to the abdominal cavity. The sac was then sutured to the ring and the wound was closed. The patient made a rapid and uneventful recovery, and now nearly two months after the operation is in the enjoyment of perfect health. It was questioned at the time what it was best to do with the appendix, amputate or return; in the light of subsequent events we are of the opinion that the wiser course was followed.

A PECULIAR CASE OF APPENDICITIS

By H. S. JEWETT, M.D.

H. Z——, German, aged thirty-seven, grocer, married, six feet in his stockings, weighing two hundred and thirty pounds, had till his final illness never lost a day's time from sickness since childhood. Having been slightly constipated for several days, he took a dose of castor oil on retiring, March 1, 1897. The oil procured for him four free (but not watery) stools between 8 A.M. and noon of March 2d. The 2d of March being his birthday, the evening was celebrated by a lunch, with beer, with his friends. To this lunch he ascribed all his sickness. After going to bed he was restless and could not sleep. He had slight pains, which started in the back, in the region of the kidneys, and passed downward to the scrotum, with desire to pass urine, and also to defecate. This feeling caused him to make frequent trips to the water-closet, though he had no stool, and passed but little urine each time.

On the morning of March 3d he took a large tablespoonful of castor oil, which had not acted on his bowels when I saw him at 4 P.M., March 3d.

At that time I obtained the above history. He was then restless, alternately lying down, getting up, and walking about the room. Temperature, 98.8° F.; pulse, 80, full and even; abdomen soft (absolutely no rigidity of either side; no tenderness on pressure (even when deeply made); no nausea. I prescribed five grains of salol every three hours, and ordered enemata of warm soapsuds to aid the oil already taken.

March 4th, 8 A.M., the patient had passed a bad night; he was very restless, with constant desire to urinate and defecate, though the bowels had not yet moved. Temperature, 99° F.; pulse, 84, full and regular. No nausea, no tympanites, no rigidity of abdomen, no tenderness on pressure, nothing abnormal to be felt per rectum. The tongue was dry and slightly coated with brown fur. There was continuous thirst and a constant desire to defecate and urinate. I ordered five grains of calomel, to be followed by Epsom salts in five hours (if the calomel had not acted by that time).

March 4th, 7 P.M., temperature, 99° F.; pulse, 84, regular and of good strength. The first dose of salts was vomited as soon as taken; a second dose (taken one hour later) was retained. The bowels had moved once, but the desire to go to stool was not relieved. The man was very restless, moving about the room and trying to defecate or pass urine every few minutes. I passed a catheter and drew off three ounces of urine of a dark amber color; specific gravity, 1.024; no albumin or sugar; indican above normal. I prescribed morphine, one eighth grain, every three hours.

March 5th, 8 A.M., Dr. J. C. Reeve, Sr., saw the patient in consultation. The patient had passed a very restless night—up every few minutes to pass urine or to try to have a stool. Temperature, 99° F.; pulse barely perceptible and very rapid. No pain, no tympanites, no tenderness over abdomen, no rigidity of abdominal walls. Nothing to complain of but moderate, constant tenesmus of bladder and rectum. He collapsed while on the night stool (trying to defecate) at half-past nine, and died at 11:45 A.M., March 5th.

Autopsy, 3 P.M., March 5th: The abdominal walls were very fat (two and one-half inches thick). The greater omentum descended to the pelvis, and was loaded with fat (being one and one-half inches thick). The usual incision through the linea alba was made, and pus oozed out of the lower angle of the wound as soon as the peritoneum was opened. With the exception of the presence of pus, everything was normal save in the region of the cæcum. Here the intestines were glued together by lymph, forming a pocket which contained about one-half pint of pus and the gangrenous appendix, which had sloughed entirely off at one-fourth inch from the cæcum. The appendix pointed upward and to the left, and was adherent to the mesentery of the ileum. The portion which had sloughed off was four inches long and five-eighths inch in diameter. It contained two fæcal concretions—one (at one and one-half inches from the cæcum) was three-fourths inch long and three-eighths inch in diameter; the other, of nearly the same size, projected for one-fourth its length through the sloughed-off tip of the appendix. The bladder and rectum were normal, and there were no inflammatory adhesions to either, and the question in my mind was: Whence the tenesmus of bladder and rectum?

A LARGE DOSE OF SODIUM SALICYLATE.

By H. S. JEWETT, M.D.,

H. D. C——, in his eighty-second year, had been taking ten-grain doses, t.i.d., of sodium salicylate for a slight rheumatic affection. He bought three hundred and twenty grains and dissolved it in four ounces of water. Of this solution he took one fluid drachm (containing ten grains) three times a day. One day, after preparing a fresh bottleful, he drank (in a fit of abstraction) the whole amount, three hundred and twenty grains, at one dose. The only unpleasant results were excessive roaring in the ears, very active catharsis, and weakness from fright, which confined him to his room for a few days, after which he felt better, stronger, and more active than he had for several years.

DEATH FROM A.C.E. MIXTURE.

By H. S. JEWETT, M.D.

R. H——, aged forty-four, single, laborer, was admitted to St. Elizabeth's Hospital, August 25, 1895, with compound fracture of the tibia and fibula. He had been a hard drinker for many years. A.C.E. mixture was administered and the fracture was adjusted and dressed. The fragments having become displaced, A.C.E. was again administered on August 27th, and the fracture was readjusted. On August 28th A.C.E. was again administered and the ends of the bones were wired together. Although he was a bad subject, these three administrations of the anæsthetic produced no unpleasant symptoms, excepting possibly slight prolongation of the struggling stage.

For the removal of a sequestrum at the site of the injury, A.C.E. was again administered on November 7, 1895. At this time physical examination showed no lesion of the heart, and the urine contained no casts, albumin, or sugar. After a few whiffs of the anæsthetic and before consciousness was entirely lost, the patient began to struggle violently, had a slight convulsion, and ceased breathing. His head was immediately lowered; artificial respiration (by Sylvester's method) was commenced and continued for forty minutes. While this was being carried out, rhythmic traction of the tongue was made and the electric battery was used. Whiskey, strychnine, and nitroglycerin were also injected hypodermatically. The pulse continued to beat for nearly a minute after respiration had ceased. No post-mortem examination was permitted.

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SHOULD MINISTERS PAY DOCTORS?

THAT medical men are suffering from a variety of grievances is too well known to need much recapitulation. There are so many ways of imposing on their good nature that it is difficult to particularize. Not only through the agency of dispensaries and hospitals are they mulcted of their just dues, but there are other and not less insinuating methods of abusing their benevolence. The statement has been made, and is probably near the mark, that fifty per cent. of the people will shirk paying their doctor and will lower themselves to almost any mean subterfuge in order to save a few dollars. The belief would appear to be widespread that physicians earn their fees easily, and they are in consequence looked upon as fair game by that class of the community which likes to get something for nothing. A custom prevails in this country that ministers should be considered as free from any pecuniary obligation to the doctor for services rendered. This custom has been in existence for so long a time that the fact seems to have been forgotten that this free service is only an act of courtesy on the part of the physician, and not, as the minister imagines, by any means binding. The explanation for this state of affairs is not easy to give. In bygone times there may have been fairly cogent reasons why the doctor should thus favor the clergyman. Then it might perhaps have been argued that in many instances the medical man received a *quid pro quo*—he was repaid to a certain extent by the introduction of patients. Times, however, have changed, and that argument now will hardly stand. Again, the relative financial positions of the two professions have greatly altered. At one time, before acute competition had reduced his earnings, the doctor was both able and willing to lend a helping hand to the poor minister. Nowadays it may be said with truth that their respective positions are reversed, and that the minister is as well able to pay for as the doctor is to give his services. The clergyman may not be much richer, but it is very certain that the doctor is a great deal poorer.

Still, when all has been said and done, it is not so much the custom itself as the abuse of it that hurts both the feelings and pocket of the doctor. For example, take a popular summer resort, to which people flock for a short time and where the resident practitioners hope to make their harvest, often indeed chiefly depending upon their earnings at this season to carry them through the remainder of the year. Numerous clergymen with their wives and families will visit the place, many of whom will require medical attendance. Surely in such cases it is hard on the unfortunate doctor that he should be expected to attend these absolute strangers as a matter of obligation. He will not greatly object to giving his services to the resident preachers, but that he should not feel sore at wasting his time on people he may never see again is rather too much to look for from poor human nature. A line should be drawn somewhere.

There is also said to be a lamentable lack of reciprocity about this custom; thus if a physician who has been attending a minister and any one of his family wishes to get married by him, he will in all likelihood be called upon for a fee. This is not exactly doing unto others as ye would they should do unto you.

In England the custom of free medical attendance exists, but to a much more limited extent than here. It is there regarded as a question of courtesy and not of obligation. Most of the consultants in the large towns do not take fees from clergymen, simply because they think the latter cannot afford to pay and not because they consider themselves in any way bound to give them free advice. In the country districts, however, of Great Britain, the clergyman pays the doctor just as he would his lawyer or his tradesman. This matter should be placed in its true light. It is not obligatory on the doctor to attend the minister without payment, nor is there any unwritten law to that effect. If he does so it is altogether from kindness, and it is galling to him to have the action regarded otherwise. Why should not ministers be classed in the same category as ordinary individuals? Those who cannot afford to pay should be attended free of charge, not as claiming such attendance as a right, but in the exercise of pure benevolence. On the other hand, there are no reasons why those who are able to pay should not do so. Perhaps the subject is misunderstood by them, and the true position of affairs is not thoroughly appreciated. They imagine that free attendance is their right. If their minds were disabused of this idea, and if they were convinced that by not paying they were in a manner accepting alms, with the consequent loss of self-respect, their views might undergo a considerable alteration.

THE NAVY MEDICAL SERVICE.

IT will surprise many of the friends of the naval medical service to learn that in spite of the many struggles heretofore made for naval staff rank the fight has been virtually given up and that the staff in question is apparently resigned to its fate. This is the more deplorable, inasmuch as the engineer corps, its recognized partner in the question, has gained its point, as is shown in the recent report of the committee of the line and staff appointed to consider the claim. It is useless to recapitulate what this means, either in the light of disparagement of equal relative rights or

of absolute justice to each. It may be well, however, in passing, to bear in mind the many indignities suffered by the medical service from officers of the line when questions of authoritative jurisdiction have been brought to the level of practical demonstration. It was not that the medical officer was greedy of power, but that he desired proper recognition in the enforcement of regulations affecting his own particular work with the men temporarily placed in his charge. This old-time grievance has become so much a matter of common knowledge with civil practitioners that the applications for entrance into the navy have fallen off to a degree that threatens the future efficiency of its medical service. As a fact in point there are sixteen vacancies which cannot be filled, although they have existed for a long time. Under existing circumstances it is not likely that the evil will be remedied, especially now that it is declared in a public and official manner that there is virtually no hope for the future applicant who as a professional gentleman wishes to command that respect for his position which its responsibility rightly demands.

The real trouble in obtaining men is the lack of proper rank and quarters for them on shipboard during the first two or three years. The assistant surgeons very naturally object to being messed with cadets and captains' clerks, as they are according to the present regulations, and believe they should be with ward-room officers. Until they are treated better, the navy will be short of surgeons, for few men who are capable of earning a living elsewhere will submit to such indignity.

THE ANTIFOOTBALL BILL.

The lamentable death of the Georgia student Gammon as the result of injuries received in a game of football has occasioned the passage of a bill by the house of representatives of Georgia, making it a misdemeanor to engage in the game when matches have been arranged or gate money has been demanded. The overwhelming majority vote of the lower house makes it quite probable that the senate will indorse the action and the bill will become a law. If this be the case, Georgia will set a laudable example for every commonwealth of the country. The time certainly has come when such a general movement is necessary. In view of the great number of serious accidents on the football field between college teams, it is impossible any longer to view the game in the light of innocent recreative amusement with harmless and healthful athletics as its object. Although so-called slugging has been ruled out in the new game, there is still left enough of brutal muscular force to make the alleged sport productive of the greatest variety of surgical injuries to every part of the body. In fact, there is hardly a game played in which some one of the contestants is not more or less seriously hurt. Only the severer injuries are noted, while the lesser ones serve as enlivening incidents to call forth the plaudits of an excited audience. Short of actual death on the field, not much account is taken of the hundreds of young men who are oftentimes injured for life as the result of the rough-and-tumble methods of the match. The trainers explain the number of injuries by the lack of requisite physical preparation for the contest, but in reality the more the footballers are trained the more dangerous becomes the game. It is certainly time we should look the matter fairly in the face. If we wish to develop pluck, courage, endurance, and strength, we can do so in more healthful and safer ways. It is time that the new game, with mere weight against weight, should be abolished.

THE ESTABLISHMENT OF MORE SMALL PARKS.

The advisory committee appointed by Mayor Strong to consider the practicability of creating small parks in different parts of this city as playgrounds for children, has reported favorably by recommending that a dozen or more squares be devoted to the purpose. This is an eminently wise recommendation, and its fulfilment will be of untold benefit to the thousands of children in the thickly settled districts. These breathing-spots will not only conduce to the sanitary welfare of the neighborhoods, but will doubtless have a social influence upon the parents and children that can hardly be estimated. In the latter connection the reports of the police captains are quite interesting in proving that the opening of the small parks has conduced markedly to the abolition of juvenile rowdyism, such as was formerly so intimately associated with the ordinary street education. It is also advised by the committee that playgrounds be connected with the public schools. This is a most excellent and most healthful measure in the right direction, and will tend to educate the rising generation in those elements of civilization which naturally evolve themselves in contented, healthful, and law-abiding citizenship.

ONE MORE KICK AT AN ABUSED PROFESSION.

The supreme court of Illinois has recently handed down a decision to the effect that any physician may be called from his practice at any time and forced to give expert testimony in court without compensation other than the regular witness fee. The decision was on the appeal of Dr. J. N. Dixon, of Springfield, who was fined for contempt of court because he refused to give expert testimony without adequate compensation. According to *The Journal* of Springfield, in May, 1895, Dr. Dixon was subpœnaed as an expert witness in the trial of a personal-injury suit brought against the city. The city desired to show by Dr. Dixon's testimony whether the injuries sustained would produce the result claimed by the plaintiff in the suit. Dr. Dixon refused to testify in the case unless he was paid a fee. The judge entered a ruling on the matter, deciding that the physician was not entitled to a special fee and that it was his duty to give the testimony. Dr. Dixon still refused to testify, and the court assessed a

fine of $25 against him for contempt of court. The case was appealed by Dr. Dixon to the appellate court, where the decision was sustained. The State Medical Society took the matter up, and by its direction Dr. Dixon carried the case to the supreme court. In giving his decision, Judge Creighton classed the giving of testimony with jury service and other public duties. He admitted that it is a hardship for physicians, whose time is valuable, to be compelled to attend upon trials for the usual witness fees, but he pointed out that other citizens are required to make similar sacrifices for the public good. He declared that it would be unjust discrimination to allow experts special fees, while other men were required to neglect their business and attend upon court for the fees fixed by the statute.

This same worthy judge would probably be very indignant if he were forced to sit on the bench and hand down absurd decisions for a couple of dollars a day. But lawyers are not doctors. They make no pretence of working for the love of God and the good of their fellow-men; they work to make a living and are not ashamed to say so.

INEXPERT TESTIMONY.

The editor of the *American Veterinary Review*, commenting upon some remarks in these columns anent the conflicting testimony of the alleged experts in the Luetgert trial, thinks that the trouble lay in the fact that the human anatomists were talking on a subject that they actually knew little or nothing about, namely, comparative or veterinary anatomy. The writer evidently believes that there are many veterinary anatomists in this country who could give the points of osseous differentiation between a woman and a hog offhand; indeed, he says so in nearly these words. It would perhaps be well if both sides called in veterinary instead of human anatomists at the next trial. It could then possibly be seen whether or not the hired witnesses in the first trial had testified on a subject of which they had no knowledge, when a man's life was dependent upon the nature of their testimony.

THE ADVERTISEMENTS THAT ARE UNFIT TO PRINT.

An esteemed correspondent has called our attention to a misdemeanor perpetrated by the publishers of the *New York Times*, a journal with ordinarily well-sustained pretensions to decency. The unlawful act was the publication, in the issue of October 31st, of the following advertisement:

"Professional title wanted. To purchase the name, and right to use the same, of a retired physician. Address, with full particulars, box 827, New York City."

According to the laws relating to the medical profession, which were enacted by the legislature of 1893 and which were amended by the legislature of 1895, entitled "chapter 661 of the laws of 1893, chapter 25 of the general laws," such an advertisement becomes not only a misdemeanor for the person who purchases, but for all those who aid or abet it. Thus, chapter 398 of the laws of 1895, which is an amendment to section 153, reads:

"Penalties and their collection. Any person who, not being then lawfully authorized to practise medicine within this State and so registered according to law, shall practise medicine within this State without lawful registration or in violation of any provision of this article; and any person who shall buy, sell, or fraudulently obtain any medical diploma, license, record, or registration, or who shall aid or abet such buying, selling, or fraudulently obtaining, or who shall practise medicine under cover of any medical diploma, license, record, or registration illegally obtained or signed or issued unlawfully or under fraudulent representations or mistake of fact in the material regard; . . . on conviction thereof shall be punished by a fine of not more than $250 or imprisonment for six months for the first offence; and on conviction of any subsequent offence, by a fine of not more than $500 or imprisonment for not less than one year, or by both fine and imprisonment."

Very probably the proprietors of the *New York Times* did not know of the unlawful nature of their action when they sold the space for this advertisement, but they knew they were aiding and abetting a meretricious quack and a dishonest rascal—one who, if he succeeded by their help in his unlawful quest, would be in a position to disobey the laws of the State and to jeopardize the lives of those who might be led to trust him. Certainly the publication of such an advertisement by a journal which claims to be reputable and even superior in virtue to its rivals is extraordinary. This paper purports to have "all the news that's fit to print," but its high morals are evidently not proof against the seductions of cash advertisements.

INHIBITION OF OSCULATORY REFLEXES.

A young physician, a member of the house staff in Bellevue Hospital, is in considerable trouble in consequence of a heinous charge of forcibly kissing one of the trained nurses in that institution. The authorities have promptly suspended him in order that the case may be properly investigated. So far as the facts go it would seem to prove that doctors, especially young ones, are intensely human, even if they are not strictly philosophical. There is perhaps less excuse for a professional man who may be in provoking contact with constant temptation to forget his dignity than for ordinary mortals. He is supposed to have a special training in inhibiting his emotional centres and in controlling his osculatory and other responsive reflexes. But, psychologically speaking, when toeing the dead line of professional propriety, there is often a propensity to step beyond in a dangerous area of culpable indiscretion. The only excuse may be that the unfortunate criminal is still young and has a great deal yet to learn. When the positive pole of temptation and the negative pole of opportunity are

in close proximity, there is always a means of preventing explosions by the interposition of a suitable non-conducting material of impervious unconcern. Consequently it was all wrong, and very wrong, for the young doctor to be off his professional guard. It is entirely inexcusable for him to plead the baby act by magnifying any possible provocation, great as that might have been. The gauze cap, the spotless apron, the graceful carriage, and the demure demeanor of the unsuspecting victim have nothing to do with the result. It is sad to think that the young man should commence a promising career with such a stain on his professional escutcheon. The constant menace of danger should have doubled his means of resistance to folly. Whatever may be the outcome of this deplorable case, the grand and fundamental principle of professional indifference to all amatory demonstrations should be rigidly maintained; otherwise all the desirable and well-trained nurses may desert our hospitals and leave our patients to the care of the shiftless, unclean, and irresponsible chore woman.

TUBERCULOSIS IN THE KANSAS STATE AGRICULTURAL COLLEGE HERD.

Our attention has been called to a report on tuberculosis in the Kansas State Agricultural College herd, which appeared in our issue of September 11th. This report is said to have been partly incorrect. A journal containing a correct account has been sent us from the college. We gather from this that although the whole herd of cattle is affected with tuberculosis and the condition of the hogs and sheep is suspected, no mention is made of any human being having become infected. On that point we must have been misinformed. We may add that a committee with unlimited authority has been appointed to investigate fully and thoroughly the affairs of the college.

News of the Week.

The Yellow Fever.—The weather in the South has until the last few days again been warm, but that seems to have had no unfavorable effect upon the progress of the yellow fever, which is evidently waning. The new cases are rapidly diminishing in number, although the mortality, as is usual toward the close of an epidemic, is increasing somewhat. It is believed that the fever will have disappeared entirely by the middle of this month, and the New Orleans board of health has announced that it is now perfectly safe for persons to enter the city. Among the most recent victims of the fever is Dr. I. M. Wright, of Biloxi, Miss., whose death was announced on November 8th. There have been heavy frosts at Memphis, and all quarantine restrictions have now been raised. Throughout the South also the shotgun quarantines are being abolished, passenger and freight trains are moving again, and business is being resumed generally. The millions of dollars that have been lost through this senseless fright are, however, lost for good and all.

Ambulance Surgeon Tracy, of the New York Hospital, in responding to a street accident "hurry call" one day this week, found in the injured man his long-lost brother. In a town of this size, where there are so many other men who it might have been, the incident is worthy of note.

Post-Graduate Medical School and Hospital.—The professorship of nervous and mental diseases in the New York Post-Graduate Medical School, made vacant last summer by the resignation of Dr. Charles L. Dana, has been filled by the election of Dr. Joseph Collins.

New York Foundling Hospital. — Dr. Henry C. Coe has been appointed consulting gynæcologist to the New York Foundling Hospital, to fill the vacancy occasioned by the death of Dr. Lusk.

New Army Surgeons.—Six men have passed the examination held recently in Washington for appointment as assistant surgeons, and will soon be commissioned by the President. Seven vacancies existed, and over forty candidates appeared for them. The young men who will be appointed are George Rauchfuss, of New York; Bernard S. Higley, of Ohio; Henry Page, of Maryland; Bailey K. Ashford, of Washington; Henry H. Weber, of Massachusetts; and Jere B. Clayton, of California. The new assistant surgeons will be required to take a course of instruction in the Army Medical School before being assigned to regiments. There is still one vacancy in the medical corps, and two more will occur this month by the retirement of Lieutenant-Colonel Walters and Major Corson.

The Plague in India is spreading rapidly, and now threatens all the northern and central part of the peninsula. Much apprehension has been caused by its appearance at Hurdwar on the Ganges, which is a centre for pilgrimages and is frequented by great crowds drawn from all parts of India.

Gymnastics in the College Curriculum.—The Yale faculty has instituted compulsory gymnasium work for the freshman class. Dr. Anderson will have charge of the course, which will consist of two hours a week, lasting through the first half of the second term. Men who are in regular training for the athletic teams and those who are physically disabled will be excused. The class work will consist partly of dumbbell or wand exercises, and later heavy gymnastics, to which especial attention will be paid.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending November 6, 1897. October 30th.—Passed Assistant Surgeon Adrian R. Alfred detached from waiting orders at his home, Jeddo, Mich., and ordered to marine recruiting rendezvous, San Francisco, Cal. November 2d.—Surgeon P. Fitzsimons ordered to duty as a member of the board of inspection and survey, Washington, D. C., November 8th; Assistant Surgeon G. D. Costigan detached from the *Lancaster* and ordered to the *Indiana*.

The Guild of St. Barnabas.—The annual meeting of this association of nurses was held a few days ago in Orange, N. J. The active membership of the guild, composed entirely of hospital nurses, now numbers thirteen hundred.

The Craig Colony for Epileptics at Sonyea, Livingston County, N. Y., closed its fourth fiscal year, September 30, 1897. There were at that time two hundred and fourteen patients in the colony, the majority of whom had been transferred from the various county houses throughout the State. New buildings are in course of construction, which when completed will enable the colony to accommodate one hundred and forty additional patients, making the total population about three hundred and fifty. It is estimated by State charity officials that this number represents about one-third of the total number of epileptics now on public charge throughout the State. A laboratory for the use of a pathologist and pathological chemist is being constructed. Dr. Christian A. Herter, of New York, has been appointed pathological chemist, and Dr. Ira Van Gieson, of New York, consulting pathologist to the colony. Dr. William P. Spratling continues as medical superintendent of the colony. Dr. Frederick Peterson, of New York, has been re-elected president of the board of managers.

The New York State Association of Railway Surgeons.—The seventh annual meeting of this society will be held in the building of the Academy of Medicine, in this city, on Tuesday, November 16, 1897. The special topic for discussion will be "Traumatic Neurasthenia," and several papers on other subjects are announced in the programme. The president of the association is Dr. J. Frank Valentine, of Brooklyn, and the secretary, Dr. C. B. Herrick, of Troy.

A New Swindle.—A young man in this city has recently adopted a new way of making a living, which has worked well in a few cases, but is not likely to survive publicity for a great length of time. He delivers a package to a man in his office, pretending that it contains medicine ordered by the victim's wife, and after collecting a moderate sum, varying in amount from fifty cents to two or three dollars, departs. The packet is inclosed in an American District Telegraph Company's envelope, and when opened by the mystified wife in the evening is found to contain a few grains of corn.

The Final Echo of the Medical College Consolidation Scheme.—On November 4th the regents of the university at Albany, in accordance with the request of the New York University and Bellevue Medical College, reconsidered the ordinance of April 8th, providing for the consolidation of the two medical schools, and the matter was laid on the table.

Medical Sufferers from Yellow Fever. — Several young practitioners have been stricken with the prevailing fever. Fortunately we have no fatality to record for October. Drs. J. Barnett, M. J. Magruder, H. Olliphant, Otto Lerch, E. P. Lowe, C. J. Miller, S. G. Kreeger are among those who have been attacked, but we are happy to state that they have all made good recoveries.—*New Orleans Medical and Surgical Journal.*

Surgeons for Inland and Coasting Steamers.—The Newport (R. I.) Medical Society has taken up the question of ship's surgeons, and urges upon Congress the passage of laws compelling passenger steamers in the inland and coastwise trade to carry surgeons. The committee states that some of the Sound steamers sometimes carry as many as a thousand passengers on the boat. Although the trip lasts, as a rule, only nine hours, still there are times when the boats are delayed for hours, and it would be in keeping with the humanity of the times to have a physician on the boat. All the steamboats on the Sound, on the Great Lakes, on the long rivers where passengers are often for days without medical aid, practise the same economy. Our seagoing steamers running South, as a rule, have no physician on board. Some employ the device of employing the purser as surgeon, and when he is pressed, owing to his numerous duties, appoint at times a man who is not any more qualified than the purser to act as surgeon's assistant. Such steamers as those running from Philadelphia to Portland carry often thirty or forty passengers and a crew of twenty or more, and, being often out three days, should have a physician on board. It is a very common practice with all the transportation companies to rely upon travelling physicians to care for sick seamen and passengers. They receive no compensation for their services and are not even returned their passage money. It is a question, however, whether in such a case the company could not be compelled to compensate the physician for services rendered at the request of the captain or other responsible employee.

Sir Alfred B. Garrod cannot be called a rolling stone. He recently celebrated the completion of his fiftieth year in medical practice, and it then was said that he had lived the half-century in the same house in Harley Street, never having experienced the delights of house moving.

Yellow-Fever "Experts."—Since the outbreak of yellow fever occurred in the South last August, legions of so-called "experts" have sprung into existence, and have foisted themselves upon press correspondents and a patient public to such an extent that there is really a possibility that there are now more experts than there are or have been yellow-fever patients. These gentlemen have been all so antagonistic in their diagnoses, and have so freely expressed themselves pro and con whenever a fresh outbreak of fever was reported, that the poor befuddled public hardly knew what to believe.—*Memphis Medical Monthly.*

The Difficulty of Enforcing Isolation in New Orleans.—Correspondents of the Italian papers from New Orleans say that one great cause of the spread of yellow fever in that city is the obstinacy with which the Italian residents resist the efforts of the health authorities to isolate the sick. In many cases it has been necessary for the health officers to go through the

Italian quarter under the protection of the police, so incensed are the ignorant inhabitants by the enforcement of the necessary precautions. In many cases they elude the vigilance of the inspectors and smuggle the sick from one house to another, spreading the disease in every direction.

Physicians to Spare.—A paragraph is going the rounds of the daily press, to the effect that Columbus, Ohio, with one hundred thousand inhabitants, has thirteen hundred physicians, or one to every seventy-seven persons.

In Favor of National Control of Epidemics.—The board of supervisors of Warren County, Miss., recently adopted unanimously resolutions declaring it "the deliberate opinion of this board that the entire subject of quarantine against yellow fever and other infectious diseases of foreign origin ought to be under the paramount control of the United States, the experience of the present system and spread of yellow fever this year furnishing conclusive evidence that the several independent boards of health of the States bordering on the Gulf of Mexico cannot be safely relied upon to prevent the introduction and spread of infectious and contagious diseases."

The American Electro-Therapeutic Association.—At the seventh annual meeting of this society, held at Harrisburg, Pa., the following officers were elected: *President*, Dr. Charles R. Dickson, 343 Sherbourne Street, Toronto, Ontario; *First Vice-President*, Dr. Frederic Schavoir, 8 Atlantic Street, Stamford, Conn.; *Second Vice-President*, Dr. Caleb Brown, Sac City, Iowa; *Treasurer*, Dr. Richard J. Nunn, 119½ York Street, Savannah, Ga.; *Secretary*, Dr. John Gerin, 68 North Street, Auburn, N. Y. The next meeting will be held in Buffalo, N. Y., on September 13, 14, and 15, 1898.

The Movement for the Repression of Tuberculosis.—On completing the twenty-fifth year of his reign, the King of Sweden has given 2,200,000 kroner to be applied toward the abatement of tuberculosis by the erection of sanatoria and other means.

Brooklyn Police Surgeons.—Brooklyn is to have four police surgeons at $3,000 a year each under the new charter. The civil-service commissioners have named November 19th as the date for the competitive examination for the places. If the same proportion prevails as at the recent examination to fill vacancies on the New York board of police surgeons, there will be one hundred and sixty-four competitors.

Contract Medical Practice Denounced.—The Somerset County District Medical Society, at the quarterly meeting held in Somerville, N. J., October 28, 1897, passed the following resolutions:

"*Whereas*, The members of this society are frequently importuned to make contracts to attend private families, the members of various societies, lodges, etc., at reduced rates; therefore be it

"*Resolved*, That it is the expressed sentiment of this society that it is derogatory to the dignity of the medical profession for any regular physician to subscribe to any such contract;

"*Resolved*, That any member of this district society who hereafter makes any contract or agreement to attend the members of any family, society, lodge, or other organization for a fixed sum shall be considered as violating the spirit of the code of ethics, and such violation shall be considered sufficient ground for action by this society in accordance with section 16 of the bylaws of said society;

"*Resolved*, That this society earnestly recommends the cancellation of any existing contracts which may be opposed to the spirit of these resolutions; and be it further

"*Resolved*, That nothing in these resolutions shall be construed as affecting any contract of a local surgeon for any railroad company or of any township or county physician, or any position under municipal, State, or national government."

An International Leprosy Society.—At the recent leprosy congress in Berlin, a commission was appointed to prepare plans for the formation of an International Leprosy Society. Professor Virchow is the president of the commission.

An Earthly Paradise is what *The Lancet* calls Montagu Square in London, the dwellers on which were empowered, by a private act passed in the reign of George III., to bring offenders before the magistrate for annoying people by selling newspapers "and noisily endeavoring to attract attention that they had newspapers for sale." Three boys were charged with this offence, and their respective mothers made to enter into their recognizances in £5 to bring them up for judgment if called upon. Would that New Yorkers had the privilege of the Montagu Squarers of damping the hideous tones of the loud-mouthed extra cries!

Subscriptions to Charity in England.—During the past year there have been public collections for charitable objects in England amounting to about $4,000,000. Of this amount $2,750,000 was for the Indian famine fund, about $1,000,000 for the various jubilee funds, and the balance for the Hospital Sunday fund and the Maidstone and the Montserrat relief funds.

The Gloucester Small-Pox Epidemic.—The report of the commission investigating the epidemic of small-pox, which served as England's celebration of the Jenner centenary, has been published, and affords little consolation to the antivaccinationists. According to the official figures, the unvaccinated persons attacked stood to the vaccinated attacked in the proportion of ninety-six to four, while among the entire non-adult population, those attacked and those not attacked, there were eighty-three unvaccinated ones to seventeen vaccinated.

Pay by the Patient and Not by the Visit.—In Austria, where physicians' fees are fixed by law and are therefore small, great complaint has been made because, if a physician happened to attend several members of one family at the same time, he could col-

lect only one fee. To obviate this custom, which has naturally caused physicians much loss, it has lately been decided that when there are two or more patients in a family, the doctor can charge a florin per patient instead of per visit.

The Dangers of Self-Treatment.—The postmaster of Denver died on November 1st from an overdose of morphine pills, which he had taken the evening before, supposing them to be cathartic pills.

The Cumberland County (N. J.) Medical Society.—The semi-annual meeting of this society was held at Bridgeton, N. J., October 12th, with the president, Dr. H. W. Elmer, in the chair. A paper on "Some Favorite Formulæ" was read by Dr. J. W. Wade, of Millville, N J. Dr. Edward Fogg, of Roadstown, and Dr. L. H. Hummel, of Greenwich, were elected to active membership. Dr. J. Chalmers Da Costa and Dr. David Riesman, of Philadelphia, were elected to associate membership.

New York Maternity Hospital.—Dr. Simon Marx has been appointed to the position of attending surgeon to the New York Maternity Hospital.

New York Obstetrical Society.—At the late meeting of the New York Obstetrical Society the following fellows were elected officers for the ensuing year: *President*, Dr. W. Gill Wylie; *First Vice-President*, Dr. J. C. Edgar; *Second Vice-President*, Dr. A. M. Jacobus; *Recording Secretary*, Dr. LeRoy Brown; *Assistant Recording Secretary*, Dr. George W. Jarman; *Corresponding Secretary*, Dr. E. B. Cragin; *Treasurer*, Dr. J. Lee Morrill; *Pathologist*, Dr. George C. Freeborn.

Philadelphia County Medical Society.—A stated meeting of the Philadelphia County Medical Society was held on October 27th, the president, Dr. James Tyson, in the chair. Dr. Herman B. Allyn read a paper entitled "Typhoid Fever Occurring in a Tuberculous Subject and Complicated with Nephritis." He reported the case of a man presenting symptoms of typhoid fever, together with a positive reaction to the Widal test, in whose sputum tubercle bacilli were repeatedly found. Recovery from the typhoid fever took place, but death resulted in consequence of the tuberculosis. Upon post-mortem examination pronounced tuberculous lesions were found in the lungs, but without any evidence immediate or remote of disease of the intestines. Especial interest attached to the possibility of concurrence of two distinct infections. Dr. J. W. Croskey reported a case in which a bit of wood almost one inch long and one-fourth of an inch thick was removed from the upper lid, in which it had been lodged under the retrotarsal fold for a period of eight months. The conjunctivitis which had been present disappeared soon after the removal of the foreign body.

Pathological Society of Philadelphia.—A stated meeting of the Pathological Society of Philadelphia was held on October 28th, the president, Dr. W. E. Hughes, in the chair. Dr. John B. Roberts exhibited a specimen of internal strangulation of the small bowel by a thread-like band arising from the lower portion of the ileum and attached to the anterior abdominal wall. Dr. J. M. Swan exhibited a specimen of tuberculosis of the kidney, tubercles being distributed in the course of the blood-vessels through medulla and cortex. The second kidney was in a state of chronic parenchymatous inflammation, but free from tubercle. Dr. Swan exhibited also a dissecting aneurism of the arch of the aorta. Dr. E. R. Schreiner exhibited a huge malignant new growth of the pyloric extremity of the stomach, with secondary deposits in the liver and also a small pedunculated papillomatous tumor of the stomach. Dr. Riesman exhibited a brain displaying an abnormally long basilar artery, with anomalous branches, and also a brain presenting a small translucent tumor behind the pituitary body. Dr. J. H. Musser exhibited a huge melanotic sarcoma of the liver, weighing seventeen pounds, from a case in which a similar neoplastic formation of the choroid had necessitated removal of the eyeball more than a year previously.

Miss Susan J. Brayton is one of the matriculants in the New York Veterinary College this year. She is the daughter of a stock farmer, and if she takes the full course will, it is said, be the first woman veterinary surgeon in America.

Philadelphia Polyclinic.—Dr. H. Augustus Wilson has resigned the chair of general and orthopædic surgery in the Philadelphia Polyclinic, and has been made emeritus professor. Dr. J. P. Crozer Griffith has resigned the chair of clinical medicine. Dr. Charles W. Burr has been elected professor of neuro-pathology; Dr. William G. Spiller, professor of diseases of the nervous system; and Dr. J. W. McConnell, associate in diseases of the nervous system.

An Apology.—Our esteemed contemporary, the *Medical Age*, chides us for commenting upon an article which appeared in its columns nearly a year ago. We did not know that the editor regarded the contents of his journal as of such ephemeral value, and we shall endeavor in future not to disturb the quiet of the buried past. We should not have offended in this instance had not the author kindly favored us with a reprint of his paper.

Honors for Colored Physicians.—Dr. W. B. Fayerman, of Atlantic City, has been elected a member of the Atlantic County Medical Society. He is the first colored physician ever accorded this honor. New Jersey has now three colored physicians members of county medical societies—Dr. Fayerman, of Atlantic County; Drs. Rholerfort and Wormley, of Essex.

College of Physicians of Philadelphia.—A stated meeting of the College of Physicians of Philadelphia was held on November 3d, the president, Dr. J. M. DaCosta, in the chair. Dr. John Ashhurst, Jr., read a memoir of the late Dr. Theodore G. Wormley, and Dr. Arthur Van Harlingen read a paper entitled "Folliculitis Nuchæ Sclerotisans (Acne Keloid)," also exhibiting a specimen of this variety of growth.

Bucks County (Pa.) Medical Society. — At the annual meeting of the Bucks County Medical Society, held at Doylestown, Pa., on November 3d, Dr. Frank B. Swartzlander, Jr., read a paper on "The Serum Diagnosis of Typhoid Fever;" and Dr. William R. Cooper, of Point Pleasant, Pa., and Dr. J. H. Fretz, of Stockton, N. J., made clinical reports. The following officers were chosen for the ensuing year: *President*, Dr. J. N. Richards, Fallsington; *Vice-President*, Dr. C. D. Fretz, Jr., Sellersville; *Secretary*, Dr. A. T. Myers, Blooming Glen; *Treasurer*, Dr. Frank Swartzlander, Doylestown; *Board of Censors*, Dr. A. M. Cooper, Point Pleasant; Dr. William Stavely, Lahaska; and Dr. George M. Grim, Ottsville.

Obituary Notes.—Dr. Joseph E. Culver died at his home in Jersey City on November 1st, of pneumonia, at the age of seventy-four years. He was a graduate of the College of Physicians and Surgeons in this city in 1849. He was one of the founders of the Hudson County Medical Society, and was a member of the Pathological Society and of the Neurological Society in New York. Four sons, two of whom are physicians, survive him.—Dr. James G. Sloan, a member of the Pennsylvania State legislature, died at Monongahela City, Pa., on November 2d, at the age of fifty-six years. He was graduated from Jefferson College in 1862, and a week later he enlisted in company G, Pennsylvania volunteers, serving until the close of the war. He then served for four years in the land office bureau of the interior department at Washington, D. C., and was graduated from Georgetown Medical College in 1869. He was elected a member of the Pennsylvania legislature in 1896.

A Mattei Cancer Hospital.—The late Count Mattei, who apparently really believed in his "electric" treatment of cancer, left directions in his will for the foundation of a hospital in which cancer sufferers may be treated according to his methods.

Medical Practice Regulations in Illinois.—The State board of health of Illinois has decided that after May 1, 1898, all non-graduate applicants for license to practise medicine and surgery, who are examined in accordance with the provisions of the medical practice act, in addition to the requirements already exacted, must present as evidence of a satisfactory preliminary education either (1) a diploma or certificate of graduation from a high school; (2) a certificate of having passed the matriculation examination to a recognized literary or scientific college; or (3) a certificate of successful examination by the faculty of any reputable university or college of arts or science (not members of a medical college faculty), by the State superintendent of public instruction of Illinois, or by the principal of a high school in Illinois, in the following branches: English grammar, arithmetic, elementary physics, United States history, geography, and Latin (equivalent to one year in a high school). Each candidate will also be required to present a certificate from a medical college in good standing with the board, attesting that the applicant has (1) pursued the study of practical anatomy in said college for at least one term and has made dissections of the entire cadaver; (2) taken at least one full course in operative surgery and practical obstetrics; and (3) personally attended six or more cases of labor. Bacteriology has been added to the subjects of the non-graduate examination.

The Chewing-Gum Habit, we learn from the *British Medical Journal*, has been taken up in England by many young women—students, actresses, and others—who have become inveterate chewers. A few days ago an inquest was held at Lincoln on a child, eight years of age, who died from the effects of eating a pellet of the substance. The symptoms preceding death were those of gastritis, and at the post-mortem examination it was found that the mucous membrane of the stomach was inflamed and that there was much local peritonitis. The coroner pointed out that the distribution of such dangerous stuff to young children was a very improper proceeding, and the jury, in indorsing his remarks, added that in its opinion the sale should be absolutely prohibited.

Tuberculosis in Cigars.—According to the newspapers, Dr. J. C. Spencer, bacteriologist of the board of health of San Francisco, reports that he has discovered the bacilli of tuberculosis in cigars.

Bequests to Hospitals.—Under the will of the late George M. Pullman, thirteen hospitals and charitable institutions of Chicago will receive $10,000 each.

Dr. Marion Hunter, niece of Sir William Hunter, has been appointed the female member of the British medical corps sent out to combat the plague in India. She was until recently the only woman physician holding the Cambridge diploma of public health.

The Southern Surgical and Gynæcological Asssociation held its tenth annual meeting at St. Louis, Mo., on November 9, 10, and 11, 1897.

Typhoid Fever in a London Hospital.—Eighteen or twenty of the nurses and ward helpers at University College Hospital, London, have recently suffered from typhoid fever. The outbreak was due to a singular piece of stupidity on the part of the authorities. All those attacked took their meals in a temporary dining-room, which had been provided for them because certain houses in which they had been previously accommodated were pulled down on account of the rebuilding of the hospital. The water which had been used in this room for drinking, instead of being taken from the main, as is usual throughout the hospital, was drawn from a cistern which became contaminated

Yersin's Antiplague Serum.—It is reported from Bombay that Yersin has had much success with his antiplague serum, the only cases not amenable to treatment being those which were seen too late, the disease having already become firmly established and the patient being practically moribund.

Many Want, Few Get.—A civil-service examination for appointment on the staff of police surgeons was held last week at police headquarters in this city. There were two vacancies, and the competitors numbered eighty-two.

Society Reports.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Abstract of Proceedings of the Twenty-Fifth Annual Meeting, Held in Philadelphia, October 26, 27, 28, and 29, 1897.

First Day—Morning Session.

The association met at Hotel Walton, and was called to order by the president, Dr. Henry B. Horlbeck, of Charleston, S. C.

After the transaction of some routine business, the reading of reports and papers was begun.

Report of Committee on Steamship and Steamboat Sanitation.—This was read by Dr. Frederick Montizambert, general superintendent of quarantine of the Dominion of Canada, in which he directed attention to the bedding of passengers—those portions of it which are not regularly laundried, blankets, mattresses, and pillows, saying they should be freely exposed to the air, and, if possible, to the sunshine after each trip. The somewhat common usage on inland steamboats of having the dining-room on a deck below the water line was not to be commended. Such a position rendered proper cleanliness and ventilation more difficult and tended to unwholesomeness. Reference was made to the all-important matter of the exposure of the travelling public on steamboats, as elsewhere, to the danger of contracting disease from fellow-travellers suffering with consumption, who in their expectorations scattered infectious material broadcast. Objectionable and indefensible as it was at all times, with steamboat saloons closed and artificially heated, the expectorator's filthy habit became especially dangerous to other passengers. The sputa drying on the decks rose as dust to be inhaled, and to add to the great list of the victims of this fell destroyer of mankind. All spittoons should contain water or a disinfectant, which should be frequently changed. With the advancing education of the general public in the knowledge and belief in the contagiousness of consumption, and the methods to be employed to limit and prevent its spread, an ever-increasing degree of success might be confidently hoped for.

A Study of Yellow Fever from a Medico-Geographical Point of View.—Dr. Eduardo Licéaga, president of the supreme board of health of Mexico, contributed this paper, which was read by Dr. Gihon in the absence of the author. The writer said in part that in the port of Vera Cruz, which, as had already been shown, could be considered one of the sources in which the yellow-fever germ obtained a spontaneous growth, only three cases of the disease had appeared during a period under study, and these three cases occurred within the month of June. With respect to other points on the Gulf coast, and especially the ports, it could safely be asserted that during the period covered by this report not a single case of yellow fever had presented itself. Passing to the Pacific coast, and bearing in mind the terrible epidemic that in the year 1884 desolated the coast, the supreme board of health of Mexico had taken especial care to prevent the disease from being imported from the Central American countries, where unfortunately it now prevailed in an epidemic form. Difficulties were still encountered in making an exact diagnosis between yellow fever and certain forms of paludic infection that in hot countries assume a very similar aspect and the serious character that is generally borne by that disease, so much so that even persons who were accustomed to observe the two affections were often uncertain as to the diagnosis. These doubts, the speaker hoped, would be dissipated in the future by reason of the discovery of the yellow-fever microbe by Sanarelli. A knowledge of the cause of the disease would not only allow us to make an exact diagnosis, but would doubtless facilitate the means for attacking it in an effective manner.

D. Samuel H. Durgin, of Boston, spoke of the importance of closer and more careful bacteriological work in the study of yellow fever.

The Drainage, Plumbing, and Ventilation of Public and Private Buildings.—A paper on this subject was read by Mr. J. W. Hughes, of Montreal. The author confined himself to the ventilation of the plumbing-system of a building, or more correctly, that part of a plumbing-system which served for the conveyance of the house wastes known as sewage, and that were to be finally disposed of, as far as any particular building was concerned, when they reached the public sewer. It was no more possible to lay down rules covering every contingency arising in scientific plumbing and ventilating than it was to apply fixed rules to the practice of medicine. The principles of scientific medicine and plumbing were fixed, but the application of these principles called for the intelligence acquired by education and developed by practice. Much injury had been done by attempting to frame plumbing-laws which would apply to every case. If the association would make a study of the general principles covering this question and embody them in a code having its indorsement, leaving the practical application of those principles to those whose special duty it was to apply them, much good would result.

First Day—Afternoon Session.

Dr. John L. Leal, health officer of Paterson, N. J., followed with a paper on the same subject, in which he emphasized three points bearing upon the question of ventilation: 1st. That every building intended for occupancy should have some special means of ventilation. 2d. That these means should be commensurate with the requirements of any particular building. 3d. That the more simple and uncomplicated the means used, the more successful was likely to be their operation. The objects of plumbing were: 1st, the immediate withdrawal from a building of certain waste products of life, the presence of which would prove detrimental to health; and, 2d, to prevent harm to the inmates of the said building arising from these products after removal, through the means of their removal. Not only were we threatened by the presence of these substances, but we were also threatened by certain dangers inherent in the best system at our disposal for ridding ourselves of them.

Report of the Committee on Car Sanitation.—This report, by Prof. S. H. Woodbridge, of the Institute of Technology, Boston, was read by Dr. Durgin in the absence of the author. The author stated that something like interstate agitation and regulation were requisite to any legislative advancement in this field of hygienic improvement. For this reason it seemed the better way that the movement should originate within or be fostered by some strong railroad corporation which would set the pace for other railroads eventually to put themselves in step with. The writer described a new type of improved parlor and sleeping car which had been devised.

First Day—Evening Session.

To this session the public was invited. Prayer was offered by Rev. William N. McVickar, D.D., of Philadelphia.

Dr. Benjamin Lee, in the absence of Governor Hastings, welcomed the members and visitors on the

part of the Commonwealth, and Mayor Warwick extended to them the hospitality of the city. The mayor referred feelingly to the life work of the late Dr. William H. Ford in the cause of municipal sanitation, after which the address of President Horlbeck was delivered.

Speaking of the progress made in the study of disease, President Horlbeck said that the theory based upon the humors of the blood had given place to a knowledge of the denizens of the blood, which were being recognized as surely as the flora and fauna of our fields. The microscope gave us the keynotes of our temporal welfare. He then gave a history of the association from its organization in 1872, which he said had grown until there were now one thousand eight hundred and forty-four names enrolled in its membership. During its existence some of the most important discoveries in the domain of medicine and surgery had been made, and the science of bacteriology had had its birth and development. Since the last annual meeting in Buffalo the method of diagnosticating typhoid fever, as discovered and described by Widal, of Paris, had been elucidated by Wyatt Johnston, of Montreal. During the twenty-five years of the life of the association the processes of taking care of contagious diseases had entirely changed. It was now an essential feature of practice in all communities to confine all such cases to the individaul affected. He next dwelt upon the necessity for a pure water supply, and then passed on to the consideration of quarantine methods. He recommended a government commission on yellow fever. It was estimated that over ninety-five per cent. of all the yellow fever cases that had reached our shores had come from Havana. A committee of the association had been appointed to bring the vital question before the governments of this country and to urge the governments of the countries interested to prompt action in this matter. This would seem to be the occasion when not only the recommendations of the committee on yellow fever should be carried out, but also the association should make a demand on our general government to the effect that a commission of expert bacteriologists be sent to Havana and Rio and be kept there until the materies morbi had been discovered, until the secrets of this dread disease had been unfolded. The examples of other countries in the solution of the problems involved in cholera, tuberculosis, bubonic plague, and leprosy were noted, and the question was asked, why should we not solve the problems of yellow fever? He recommended that a committee from the association be appointed to wait upon the President of the United States with a view to carrying out this idea. Finally, reference was made to the experiments carried on by the State board of health of Massachusetts at Lawrence, on the utility of filtration of water supply with reference to the removal of typhoid germs, the average result being the removal of ninety-eight and a half per cent. of the germs. A diminution of sixty per cent. in typhoid cases at Lawrence had been the result of sand filtration.

Second Day—Morning Session.

Report of the Committee on Pollution of Water Supplies.—Dr. Charles Smart, of Washington, D. C., read the report, which stated that the committee had been chiefly engaged in perfecting the standard methods of bacteriological research. The committee felt that it should be discharged from its duties, and that a new one should be appointed, which should consist of a couple of men who were practically acquainted with municipal water supplies, a couple more who knew effectively the chemical aspects of the subject, and, finally, a like number who knew, as it should be known, the bacteriology of the subject. The committee had, however, announced the bacteriological formulæ for use in laboratories. In accordance with the suggestion the committee was discharged.

Disinfectants.—Prof. Franklin C. Robinson, of Maine, spoke on the subject of disinfectants. He said he could not help noting how rapidly the knowledge and use of formaldehyde had spread. Only one year ago it was practically unknown in the United States. There was no apparatus for generating it in quantity except the one that was exhibited then. Now probably most, if not all, of the members had used it. He ventured to predict that we were far from knowing all about it, and that a year from now greater progress would be seen than during the past year.

Dr. E. A. de Schweinitz, of Washington, D. C., followed with a paper on the determination of the amount of formaldehyde yielded by the formaldehyde lamp; and Prof. S. Burrage, of Lafayette, Ind., made some remarks on fumigation experiments with formaldehyde.

Diagnosis of Small-Pox.—Dr. Frank W. Wright, of New Haven, read this paper. He said that an early diagnosis of small-pox was of great importance. Next to vaccination this was the most essential factor in preventing the disease from spreading. If all cases of small-pox were typical it would not be difficult to make a correct diagnosis; but in these days of general vaccination typical small-pox was seldom seen, the great majority of the attacks being modified by former vaccinia and commonly spoken of as varioloid; but we might call them modified small-pox. If by chance a health officer should fail to recognize a case of small-pox and the disease should spread, he would be subjected to very severe criticism and would probably be removed from his position in disgrace. On the other hand, if he should declare some disease that resembled modified small-pox as that disease and future events proved that a mistake had been made, he would be just as severely criticised, and would probably have to defend himself in a suit for damages.

Second Day—Afternoon Session.

The Barber Shop as a Menace to the Public Health.—Dr. A. Walter Suiter, of Herkimer, N. Y., read a paper with this title. It seemed that the time had arrived when the attention of public health authorities should be called to that part of hygiene which applied to the barber shop. The first attempt of modern times to regulate sanitarily the operations of the barber shop was recently made in the city of Paris. As a public regulation and by direction of the sanitary authorities, an order had been promulgated requiring that for the protection of the public specific rules of asepsis and disinfection shall be observed in all shops. One evening, several years ago, a sheepish-looking individual shuffled his way into the author's waiting-room and requested a prescription. He was observed to be suffering from disease and presented a most unattractive appearance; his face was literally covered with eruptions and his mouth and lips were ulcerous in high degree with mucous patches. The man's case was disposed of and he was gladly dismissed. Having to take an early train, Dr. Suiter shortly afterward proceeded to the barber shop to prepare for his toilet. His barber's chair was occupied and he sat down to await his call. As the occupant was about to arise he was startled to observe the very patient for whom he had prescribed an hour before. It is needless to say that he took his departure. Then and there he resolved that his face should never again be shaved by a barber.

Meat Inspection.—Prof. Leonard Pearson, of Philadelphia, discussed the subject of meat inspec-

tion. Reference was first made to the amount of meat consumed by the various peoples of the world and to the methods of inspection followed in Europe and in America. Since the bacterial origin of many diseases had been demonstrated, and the close relationship of many of the diseases of man and animals had been established, the importance of rational meat inspection had been greatly emphasized.

Dr. Edward Jackson, of Philadelpnia, spoke of eye strain from poor window glass, and said the bad influence of defective window glass was intensified by the eye having to look through different parts, causing different kinds of strain, with the result that the eye could not adjust itself so as to work to the best advantage. Even if the defects in the glass were comparatively slight, at a certain distance they would cause serious strain similar to that of astigmatism.

Dr. E. P. Lachapelle, of Montreal, followed with the report of the committee on transportation of diseased tissue by mail, in which he said that the postal authorities of Canada had lately given their consent to the use of the mails for this purpose, this result being largely due to the valuable help received from the newly appointed deputy postmaster-general, who, being a physician, was quite *au fait* as to the importance of the demand. As regarded the United States it might be said that, since the use of the mails had been granted, the State board of health of New Jersey, at least, which had fully availed itself of the privilege, had not detected any case of infection traced to the circulation through the mails.

Third Day—Morning Session.

Health Legislation.—The report of the committee on health legislation contained a proposed bill to establish a department of public health, the latter to be under the control and management of a commissioner of public health, who should be a regularly educated physician, appointed by the President of the United States, and whose term of office should be six years.

Surgeon-General George M. Sternberg, of Washington, spoke in regard to the bacillus of yellow fever, with which, in common with Sanarelli, his name is so prominently identified.

Dr. J. E. Monjáras, of San Luis Potosi, Mexico, spoke of the necessity for adopting an international classification of the professions.

Dr. Peter Bryce, of Toronto, read a paper in which he emphasized the view that in dealing with tuberculosis it was the duty of the State to do whatever could be done by the individual.

Consumption as an Indoor Disease.—Dr. Samuel W. Abbott, of Wakefield, Mass., followed with a paper on this subject, saying that no form of infection had been studied with greater interest during the past quarter of a century than that of tuberculosis. As proofs that consumption was an indoor disease, he first called attention to the evidence shown by occupations, and secondly, to evidence presented by the conditions of age and sex.

At the close of the morning session the members visited the Medico-Chirurgical College and Hospital of Philadelphia, where they were entertained at a luncheon, and were afforded an opportunity of inspecting the splendid new amphitheatre and the various appointments of the institution.

Third Day—Afternoon Session.

Urgent Need of Sanatoria for the Consumptive Poor of Large Cities.—Dr. S. A. Knopf, of New York, opened this session with the reading of this paper. The question what to do with the thousands of tuberculous patients who inhabited the tenement districts of our large cities, unconsciously disseminating the germs of their diseases among their own kin, friends, and neighbors, or who crowded the wards of our general hospital to the detriment and danger of the patients suffering from acute diseases, had become for the sanitarian one of the vital issues of the day. A number of well-known sanitarians were quoted as expressing the belief that the only solution of the question was the erection of special sanatoriums under municipal control. Two other papers were read on the subject of consumption. One dealt with bovine tuberculosis in its relation to the public health, and the other with tuberculosis and milk supply.

Dr. Lawrence L. Flick, of Philadelphia, in discussing the papers, said that no hope of accomplishing great results could be looked for until the public was educated on the subject of the infectiousness of the disease. This education was going on, and in Philadelphia in the last ten years there had been a reduction of the disease by one-third.

Dr. Lydia Rabinowitsch, of Philadelphia, told of the experiments which she had made in the past two years with butter and milk. In milk she had found from twenty to thirty per cent. of tubercle bacilli. In eighteen samples of butter from different stores she had not found the bacillus of tuberculosis, but had found a micro-organism which very much resembled it.

Dr. E. F. Stewart, of East Orange, N. J., presented a paper entitled "A Plan for Purifying Water."

Investigations of Water Supply by the United States Geological Survey.—Mr. F. H. Newell, of Washington, D. C., followed with a paper in which he said it had been demonstrated again and again that purification of sewage by filtration or by irrigation was practicable and could be conducted at reasonable expenditure, and it was to be hoped that the time was rapidly approaching when public sentiment would be aroused to the degree of compelling such filtration whenever public health or comfort was imperilled.

A Brief Review of the Work of Sand Filters at Lawrence, Mass.—This was read by H. W. Clark, chemist in charge of the Lawrence Experiment Station. In 1887 the deaths from typhoid fever at Lawrence were 12 per 10,000; in 1889, 18.75; in 1890, 13.33; in 1891, 12.20, and in 1892, 11.11. During 1893 the filter was built, and hence during a portion of the year filtered water was being used. In 1894 filtered water was in use during the entire year, and the death rate from typhoid fever was 5 per 10,000; during 1895 it was 3.07; during 1869, 1.86; and the rate for the present year promised to be exactly the same as for 1896.

Fourth Day—Morning Session.

The report of the committee on disposal of garbage and refuse was read by Mr. Rudolph Hering, C.E., of New York. The report stated that it was inexpedient to make original researches, and the work of the committee had been confined to the collection of statistics and the inspection of plants.

Then followed a report of the committee on the transportation and disposal of the dead, which was read by Dr. Charles O. Probst, of Ohio. Among other things this report favored the preparation of bodies for shipment by licensed embalmers.

Dr. Henry Mitchell, of Asbury Park, objected to this on the ground that it sought to create a special class of workers, to whom all the business would be restricted.

Several other papers were read and discussed.

The following officers were elected for the ensuing year: *President*, Dr. Charles A. Lindsley, of New Haven, Conn; *First Vice-President*, Dr. Benjamin Lee, of Philadelphia; *Second Vice-President*, Dr. John

C. Schrader, of Iowa City, Ia.; *Secretary*, Dr. Charles O. Probst, of Columbus, Ohio; *Treasurer*, Dr. Henry D. Holton, of Brattleboro, Vt.

The association will hold its next meeting in Ottawa, Canada, 1898.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, October 13, 1897.

T. Mitchell Prudden, M.D., in the Chair.

Large Aneurism of the Middle Cerebral Artery.—Dr. George P. Biggs presented an aneurism of the middle cerebral artery, of unusual size. It had been taken from a male, sixty-five years of age, a watchman by occupation. He was found sitting in a chair, leaning far over to the left side, the left arm hanging helpless. He talked with great difficulty, and stated that the attack had begun with a very marked vertigo. He had succeeded in reaching a chair before falling. Soon after he was discovered he became speechless. The breathing was very slow and irregular, and the face was flushed. Both pupils were contracted, the right one slightly more than the left. The pulse was 64 and regular. The radial arteries were hardened. The urine had a specific gravity of 1.013, and contained a trace of albumin but no casts. The paralysis of the left side gradually increased and extended to the left leg. He became comatose, and died on the second day after his admission to the Hudson Street Hospital. The clinical diagnosis was cerebral hemorrhage.

On autopsy, aside from the lesions inside of the cranium, there were marked congestion and œdema of the lungs, and quite advanced chronic diffuse nephritis. The skull being opened, the dura was found to be extremely tense. There was a thin subdural clot over the base and over the lower part of the outer surface of the right hemisphere of the cerebrum—in other words, a moderate amount of subdural hemorrhage. There was a marked prominence of the middle portion of the right hemisphere. Beneath the pia over the right side, especially over the region of the right Sylvian fissure and over the base of the brain and the temporo-sphenoidal lobe, there was a very extensive hemorrhage. The ventricles were empty. The right hemisphere being cut into, a very large hemorrhage was found just outside of the lateral ventricle. It measured about 7 cm. antero-posteriorly, 5 cm. vertically, and 5 cm. transversely. At first this appeared to be an ordinary cerebral hemorrhage, which had apparently broken externally, the hemorrhage having taken place first in large amount beneath the pia, and then broken out, producing the subdural clot. There was, however, a very decided hardness of the middle cerebral artery in this fissure. This was taken out, the clot carefully removed, and the aneurismal sac dissected out. This aneurism measured 1 cm. in length and 0.75 cm. in diameter, and was ovoid in shape. There was a large ragged tear on the superior surface, through which the hemorrhage had occurred. The aneurism was located in the middle cerebral, about 1.5 cm. from the origin of the vessels.

The points of interest in the case were the unusual size of the aneurism—larger than any that the speaker had previously seen upon a cerebral vessel—and the fact that on first examination it had so closely resembled an ordinary cerebral hemorrhage.

Tubercle Bacilli Found in the Fæces.—Dr. George Biggs also presented microscopical specimens from a case of ordinary pulmonary tuberculosis of several months' standing, in which the attending physician had found tubercle bacilli some time before. In the past month the patient had developed a diarrhœa, which had been clinically diagnosticated as due to tuberculous involvement of the intestine. The patient being very anxious about it, it was suggested that an examination of the stools should be made for tubercle bacilli. The examination showed the presence of a distinct mass of purulent matter, and its nature had been verified under the microscope. When it was stained, several tubercle bacilli were revealed. The idea of making such an examination had at first seemed to him ridiculous, but it was interesting to note that the search had been successful. It might be assumed by some that the mass was really a mass of sputum that had been swallowed.

Malarial Parasite of the Quartan Type.—Dr. Henry Heiman exhibited under the microscope the quartan parasite, obtained from a patient in Little Rock at his request. He had been very anxious to find the quartan parasite, but had never been able to do so in specimens secured in New York City. The specimen presented exhibited a parasite such as he had never seen before, and the clinical history indicated the quartan type of malaria. The patient was a boy of eleven years, who had suffered from malaria for a year or two. At first the malaria had assumed the quartan type, but later on the boy had had chills every second day or even every day. This might be accounted for by supposing that he had had several infections of the quartan parasite. In this parasite the red cell was not swollen. The pigment was located more in the periphery of the organism, but the organism itself appeared smaller. As it was believed that the spores were the most characteristic and distinguishing feature, it was unfortunate that they were not found in this specimen. In the tertian, seventeen to twenty spores were supposed to be in one parasite; and in the quartan, from six to seven of these spores. He had been unable to confirm the statement that the pigment was coarser in the quartan.

Adeno-Myomata of the Uterus.—Dr. T. Mitchell Prudden presented microscope slides. He said that a considerable number of cases had been reported in late years of uterine myomata, or fibro-myomata, in which glands of the uterine type were present, sometimes with cysts. These myomata might be either subserous, intraparietal, or submucous. They were sometimes directly connected with, and the gland structures were evidently derived from, the uterine mucous membrane. But they were often so distant and so entirely separated from the mucous membrane as to justify the conjecture that they were derived from some embryonal abnormality associated with the development of the Wolffian body. These tumors had formed the subject of a monograph by Recklinghausen, and had been discussed, with a description of new cases, by Cullen, in volume vi. of the Johns Hopkins Hospital Reports.

Dr. Prudden brought for demonstration slides from two hitherto undescribed cases. In neither of these cases was there anything especially noteworthy in the clinical history. One was from a private patient, thirty-four years of age, whose uterus had been removed on account of a tumor, about 3 by 2 cm. in diameter, in the posterior wall of the cervix uteri. The other tumor was a polypoid growth, about the size of a hen's egg, attached to the posterior wall of the uterus, discovered at the autopsy on a woman of seventy-five, who had died without definite clinical diagnosis, and who was found to have had chronic diffuse nephritis, chronic interstitial hepatitis, and carcinoma of the left ovary. In both cases a series of sections had been made, with a view of discovering some connection between the glandular elements of the myomata and the uterine mucous membrane, but without success. It would be seen that the bulk of the tumors consisted

largely of fibrous and smooth muscle tissue, the former preponderating. This mass was moderately dense and moderately vascular. Scattered irregularly and on the whole sparsely through this fibrous and muscle mass were small collections of gland-like structures resembling islets of uterine mucous membrane. The glands were follicular in type, were lined with cuboidal and low cylindrical epithelium, and resembled those of the mucous membrane of the body of the uterus. Some of the gland lumina were distended with granular material to form minute cysts lined with flattened epithelium. Between and surrounding these glands there was a very cellular stroma, resembling that of the mucosa of the uterine body, and merging gradually into the surrounding fibrous tissue.

These specimens were presented, Dr. Prudden said, not because these tumors were very uncommon, but because they were not usually recognized, and as a contribution to the statistical data of this interesting growth.

The society then adjourned.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, November 4, 1897.

EDWARD G. JANEWAY, M.D., PRESIDENT.

THE meeting was in charge of the section on genito-urinary surgery.

Sterilization of Urethral Instruments.—DR. EDWARD MARTIN, of Philadelphia, read a paper with this title. It was limited to a consideration of the method by which catheters could be rendered surgically clean, as metal instruments were easily sterilized by flaming and boiling. Sterilization immediately before use, the author said, was often impracticable, and when the catheter was required the conditions were usually peculiarly favorable to infection. The ideal conditions for catheterization would be a clean, supple, well-lubricated instrument of appropriate calibre, passed by sterile hands through a sterile urethra into a normal bladder. In the first place, the instrument should be so constructed as to be free from blind pockets for the collection of filth. The most dangerous part of the ordinary catheter was the blind space beyond the eye; hence only catheters provided with a solid head should be used. The internal surface of the catheter was rarely even approximately smooth, and for this reason the difficulty of sterilizing the interior was enormously increased. It was worthy of note that the soft-rubber catheters were the smoothest. The mechanical cleansing of a catheter was best accomplished by warm soapsuds injected into the catheter immediately after use. After soaking, the instrument should be washed in freshly boiled water; the water within the instrument was then "swung" out, and the catheter placed in an oven for a few minutes to dry. All soft instruments stood well this process of mechanical cleansing. Sterilization might be accomplished with heat or with germicidal drugs. Dry heat had been tried by him, but it had hopelessly ruined the catheters, and the same was true of steam. Boiling, however, acted more satisfactorily, and if not continued for more than five minutes the better-grade catheters were not injured and were rendered sterile. The cheaper catheters were damaged by such boiling, but the rubber instruments seemed rather to be improved by it. This process of sterilization was adapted to the needs of the layman, and the catheter could be stored in a sterile cloth. Alcohol and carbolic acid quickly destroyed the finish of a catheter. Any gum catheter would lose its lustre, even if soaked in alcohol for only one minute. Antiseptic soaps had seemed to open up a very promising field, but his experiments had shown them to be entirely useless. Another easy method of sterilization was that by the vapor of mercury. The washed catheters were placed in a closed compartment containing metallic mercury, either exposed in a shallow tray or in a finely divided state in a flannel. An exposure in this way for fourteen hours, it was claimed, would completely sterilize the catheters. However, his experiments and those of others had shown that reliable sterilization could not be obtained unless the exposure was about five times as long. A convenient and efficient method of sterilization was by the use of a tight box with shelves for the catheters and a compartment containing paraform powder. Culture experiments had proved the method to be exceedingly satisfactory, but an exposure of eighteen hours was insufficient, and in the case of instruments of fine calibre the results were unsatisfactory even after twenty-four hours. Even unwashed catheters of moderate calibre were rendered absolutely sterile by an exposure of forty-eight hours in the paraform box. The method was simple and reliable, and provided for the aseptic storage of the instruments. The vapor was found to be slightly irritating to the mucous membrane of the urethra when the instruments were used. The formaldehyde process had been found completely satisfactory for the sterilization of the instruments of fine calibre, such as ureteral catheters. The vapor should be passed directly through the catheters. The formaldehyde was conveniently kept in a tube under pressure, and by unscrewing a cap the vapor could be injected in a concentrated form into the catheter. A few seconds had been found amply sufficient to sterilize the interior of even the fine catheters. It should not be forgotten that the lubrication and the introduction of a catheter were often the means of causing infection. It was a good plan for the operator to wear sterile cotton gloves, changing them for each case. The penis having been passed through a hole in a sterile towel, the meatus should be syringed out with salt solution.

The Best Lubricant.—The lubricant was best kept in a narrow jar deep enough to allow of the introduction of the catheter to a depth of eight inches—for example, a specimen jar. Investigation had failed to discover a thoroughly satisfactory aseptic lubricant. The best were albolene and a twenty-three-per-cent. solution of boroglyceride. The former made it more difficult to clean the instrument; the latter was a mild antiseptic, decidedly inhibitory, and an excellent lubricant, although not so good as the albolene. Argonin, in the strength of 1 to 1,000, had been experimented with, and had been found to cause but slight irritation. By flushing out the urethra during catheterization, the danger of infecting the bladder could be greatly lessened, but there was a distinct danger incident to the use of all irritating disinfectants—*i.e.*, they were liable to set up a total urethritis which would strongly predispose to infection. The sterile catheter should be introduced while sterile salt solution was flowing through it. In cases of long-standing disease of the bladder, he adopted this method and entirely omitted the lubricant, thereby diminishing the risks of infection.

Self-Catheterism.—Patients who were compelled to practise self-catheterism should be furnished with soft-rubber catheters of a size and shape of tip which would permit the easiest and least painful entrance into the bladder. It would usually be found that the soft-rubber coudée catheters fulfilled these requirements. Even the most supple woven catheter would be found rigid for half an inch of its length, when compared with the soft-rubber instrument. The rubber coudée catheters had proved far more satisfactory than any others that he had used in practice. These

catheters were not only easy to pass, but were cheap and were readily made sterile. The patient should provide twice as many catheters as were needed for use in the twenty-four hours. After boiling the number required for one day, they should be wrapped up in a sterile fabric. He had had constructed a bamboo cane, in one end of which was a small cylindrical paraform box containing four catheters, and in the other end another case for the soiled catheters and for the lubricant.

Clinical Results More Reliable than Laboratory Reports. — Dr. Samuel Alexander said that he agreed substantially with all that had been stated in the paper; nevertheless as a clinician he felt that many of the ideas there presented must be characterized as Utopian. It was a very much simpler matter to carry on a system of thoroughly sterile catheterism in hospital than in private practice. In his service at Bellevue Hospital a large number of methods had been tried, and these had been simplified as much as possible. The best grade of catheters had been selected, but he was not yet prepared to give up the woven catheter, although admitting that it was most difficult to sterilize. For a time he had had the catheter washed in soapsuds, then injected with a five-percent. solution of nitrate of silver, followed by a solution of chloride of sodium, and afterward dried and put away. The method was exceedingly dirty and stained the hands very badly; moreover, the culture experiments had not been so satisfactory with this method as had been anticipated. In general, he would say that the clinical results had been very much better than one would have expected from the laboratory reports, and he would very much prefer to trust to his clinical observations than to the laboratory reports of what his results ought to be. Another method had been to throw the catheters into a basin of boiling water immediately after use. They were then collected and washed with soapsuds, and those that could be boiled were treated in that way. He had not found that boiling for five or ten minutes would fulfil the laboratory requirements. Last summer he had used a Janet sterilizer in his office, in connection with formaldehyde, but had found that a much longer time was required to effect sterilization than had been stated, if the catheters were old ones. Another objection was that a catheter must be washed before use, otherwise much stinging pain would be caused by the gas clinging to the outside of the catheter. If this was done with water that was not absolutely sterile, the whole process would be vitiated. Catheters that could not be boiled were immersed in very hot water, after being thoroughly cleansed with soap and water. He could in this way get as good results as by using the catheters sterilized by formaldehyde.

Just as Good Results without Irrigation.—At one time he had advocated and practised the plan of sterilizing the urethra, but he found now that he got just as good results when he did not wash out the urethra as when he washed it out before introducing instruments. For this reason he did not now wash out the urethra before the introduction of the catheter, unless a severe urethritis was present. A good deal depended upon cleansing the meatus, yet simply washing off the meatus was sufficient in an ordinarily clean person. He believed firmly that although one had absolutely sterilized the catheters, if one did not use the instruments with proper skill and dexterity, the amount of trauma so produced would be an active agent in carrying infection from the urethra into the bladder.

The Essentials for Aseptic Catheterism.—Three factors were essential for aseptic catheterism, viz.: (1) as clean a catheter as possible; (2) the gentle use of it; and (3) the catheter must be of the best grade—not only smooth, but sufficiently flexible. New catheters were likely to be too stiff for proper use; they should accordingly be frequently soaked in hot water at first, and drawn through the hands in order to render them sufficiently supple.

Catheter Life. — The method advocated by the reader of the paper for those prostatics who had to catheterize themselves was a good one, yet it was not probable that it could be carried out in very many instances. In the beginning of catheter life, when there was residual urine with obstruction and when the urine was clear, no pains should be spared by the surgeon to have the catheters absolutely sterile and to see that the catheterism was performed at absolutely regular intervals. A person with an enlarged prostate at the beginning of catheter life could be passed through what used to be the dangerous period of catheter fever without any noteworthy infection of the bladder. But the time would come when that patient did not require such careful watching, when the bladder was not congested, and had ceased to be a fertile field for the growth of micro-organisms. Then the absolute and rigid rules for catheter sterilization were not so important as at the beginning of catheter life.

Individual Vulnerability.—Dr. Willy Meyer said that many were inclined to wonder at the number of catheterizations daily performed without any serious reaction and without the precautions advocated being taken. There were certainly great individual differences, and bad results occasionally followed even when unusual care had been taken in the catheterism. It was evident that the virulence of the organisms and the condition of the patient's system at the time exercised a potent influence. It should be emphasized, for the benefit of the general practitioner, that metal and rubber instruments could be sterilized by washing and boiling in water for five minutes.

Prefers Chloride of Calcium and Formalin for Sterilization.—His own practice had led him to believe that the best method of sterilization for gum-elastic catheters was by the use of formalin. The instrument could be dried by the aid of chloride of calcium, and then could be placed in a suitable receptacle and exposed to the formalin. The use of the chloride of calcium he believed to be an important point. In spite of the greatest care in sterilizing the instruments and the urethra, urethral fever was bound to occur in a certain number of cases. It was probably due to infection with the colon bacilli in connection with traumatism. He had observed this occasionally in his first efforts at cystoscopy. Nitze had devised a special sterilizer for steaming the cystoscope, but in the speaker's hands its use had resulted in seriously damaging several cystoscopes. It had been found that formalin vapor did not attack the cystoscope; hence it was now possible safely and efficiently to sterilize such instruments. Since he had adopted the plan of flushing out the bladder repeatedly after the first passage of instruments in patients suffering from prostatic enlargement, he had not observed urethral fevers. As the ureteral catheters could now be properly sterilized, it was perfectly justifiable to use these instruments, but one should be satisfied at first with passing the instrument only a short distance into the ureters.

The Flora of the Urethra.—Dr. Robert W. Taylor said that he was afraid that the elaborate method advocated in the paper was not practicable in most instances; moreover, he was of the opinion that fully as good results could be obtained by the well-known clinical methods outlined by Dr. Alexander. It had been clearly shown that a very common inhabitant of the meatus and its vicinity was the colon bacillus. The first inch of the urethra contained more microbes than any other part, except the bulb. Several good observers insisted that the gonococcus was, under nor-

mal conditions, a harmless denizen of the urethra, and that the changes in the tissues incident to traumatism, as produced by sexual indulgence, the passage of instruments, and changes in the urethra from prostatic disease, rendered this micro-organism noxious. It was true that this was still a mooted point, but it was well worthy of thoughtful consideration. The speaker recalled one case of what the patient called "acute clap," which had originated from the overzealous use of the endoscope by a surgeon. Dr. Prudden had found in the cultures from this case the micrococcus ureæ—a micro-organism that had hitherto been considered harmless. He believed there were many saprophytes in the urethra which were usually innocuous, but which became hostile under altered conditions of the mucous membrane. Many a physician was accused of having infected a urethra with germs from without, when he had really done it by the use of too large instruments or by bungling manipulations. It should always be remembered that a man carried around within himself the agents of infection in the urethral canal and perhaps also in the bladder.

The Method Must be Simple. — Dr. L. Bolton Bangs said that in considering the relation of infection to an individual patient he had been led to observe that in order to have the physician's directions obeyed, particularly in the prostatic cases, these directions must be as simple as possible. There was no exception to this rule, not even when medical men were the patients. Most men were willing to wash their catheters with hot soap and water, and perhaps even to boil them, but he had not been satisfied with the results obtained in this way. He had been experimenting with simple methods of sterilizing catheters by the use of formaldehyde, but this investigation had not yet been completed. We should always bear in mind that there was a certain individual vulnerability to infection. He had known the most careless and dirty men to live to good old age without the urine having been rendered more than slightly turbid in spite of the long and constant use of the catheter.

The Metallic Catheter Responsible for Much Infection.—Dr. Alexander J. C. Skene said that, while he recognized the value of the sterilization of instruments, he was sure that too much stress had been laid upon it, and that quite a number of surgical sins were committed in the name of sterilization and aseptic surgery. He recalled the fact that cystitis had been very common in cases of catheterism before the advent of antiseptic surgery, and his disappointment on finding that the number of cases remained undiminished, even after antiseptic surgery had come in vogue, just so long as the old-fashioned metallic catheter was employed. These instruments had been largely responsible, whether they were clean or filthy, for these cases of infection, for as soon as they had been abandoned the cases of cystitis from catheter infection had been lessened fully fifty per cent. Of course, the surgeon should be exceedingly careful about having the hands and the instruments clean, and this was not difficult of accomplishment in practice. He had found that if a cystoscope or an endoscope were exposed in the operating-room to the formaldehyde vapor, it would be clean enough for use, and he had never seen any harm from the employment of these instruments when so treated. It was necessary only thoroughly to boil the Jacques soft-rubber catheter for fifteen or twenty minutes to secure thorough sterilization. After having been sterilized in this way the catheter should be put in a sterilized tube, and the ends closed hermetically or with rubber caps. When it was necessary to carry around such instruments, they should be washed out with ether vapor and then immersed in a twenty-per-cent. carbolic-acid solution just before use. He used the same method when the cystoscope or endoscope had been kept for a considerable time after having been sterilized in the manner already described, and he was perfectly confident from clinical observation that such treatment effectually put the noxious germs to sleep. The great difficulty he had found was in properly cleansing the urethra and also the mouths of the ureters.

The After-Cleansing of the Urethra. — It had always seemed to him somewhat pathetic to see a surgeon take infinite pains in sterilizing the catheter and then pass it in through a canal teeming with germs of all kinds. It was his practice to fill the urethra with some sterilizing solution, and allow it to remain there for some time before the passage of the instrument. In catheterizing the ureters he had always taken the pains to sponge off the mouths of the ureters after having flushed out the urethra and bladder. An additional precaution was to flush out these parts with some sterile solution after the necessary manipulations had been carried out. Such procedures, he was confident, would do more to prevent and control infection than the more elaborate methods directed entirely to the sterilization of the instruments. He knew of no germs, except possibly the tubercle bacilli and the gonococci, that would do any harm if they remained for a short time in a bladder that was entirely free from abrasion.

Dr. Frederic R. Sturgis said that the main point was cleanliness, and that was, after all, what was meant in practice by the term "sterilization." When the discharge was confined to the deeper portions of the canal, the first effort should be to determine its nature and that of the germs there present.

Urethral Irrigation Important.—Because we were not able absolutely to sterilize the urethra was no reason why we should not carry out irrigation of the urethra. One of the best means of accomplishing this was to have the patient urinate. Failing that, irrigation might be employed either by means of a double catheter or by filling the urethra with a weak solution of permanganate of zinc or of argonin, by means of a fountain syringe. In the majority of instances irrigation of the urethra, he believed, was unnecessary, and under all circumstances it was impossible thoroughly to sterilize the canal. As a lubricant he used borated solution of glycerin or a borated solution of oil. The oil was first sterilized by dry heat, and then as much boric acid was added as the oil would take up. Small portions of this lubricant were kept in a tube stoppered with cotton, and at the conclusion of the day's work the remaining portion was thrown away.

Traumatism Strongly Predisposes to Infection. —Dr. Eugene Fuller said that the sterilization of urethral instruments was still in its infancy. It was a matter of much importance, but in its consideration we should not overlook the large part played by traumatism in the production of infection. This had been well illustrated by one of the speakers, who had stated that the number of infections had been reduced fifty per cent. by abandoning the metal instrument, which was only another way of saying that traumatism had been responsible for much of the infection. It seemed to him that if the genital apparatus were perfectly healthy—if there were no seminal vesiculitis—it would be very rare for that tract to be infected by an instrument, unless the latter was very large or traumatism was produced. Traumatism of the deep urethra was a very common cause of infection. Every one was familiar with those occasional cases of epididymitis developing even after all the usual precautions had been taken to sterilize the parts. The secret was often to be found in the fact that the instrument had been forced through an obstructed deep urethra. Such an accident, from distention of the deep urethra, could be guarded against by previously ascertaining the condi-

tion of these parts by a digital examination through the rectum. There was comparatively little danger of infecting the prostate itself; the capsule was often tumefied and inflamed, but the focus of infection was primarily in the ejaculatory ducts. Tuberculosis was extremely likely to get a foothold at the prostatic sinus.

Gentle Manipulations and Urethral Irrigation Essential.—Dr. E. L. Keyes said that every one, from the practical side, paid less attention to the antisepsis of the instruments than to other factors, and this seemed to him just. We did not usually interfere by the introduction of instruments into the urethra until the pool had already been defiled. The avoidance of traumatism and the irrigation of the urethra after instrumentation were the two most important elements. He returned always with fondness and affection to hot water and ordinary cleanliness, but occasionally diverged to silver, bichloride, or salicylic acid. He should probably continue to depend upon these elements until he was "gathered in." His results had been sufficiently satisfactory to make him feel that it was not necessary to place too much reliance upon asepsis, although the work done in this field was a commendable one and would have a good effect upon the profession at large. It was his practice to irrigate with weak solutions of salicylic acid or 1 to 4,000 solution of nitrate of silver, particularly along the urethra and in the bladder, after instrumentation. This washing out the pool after it had been stirred up by the surgeon was a point in the technique which seemed to him more important even than the early cleanliness.

Dr. Ramon Guitéras spoke of the importance of using only catheters of the best grade. The best ones were covered with lacquer, both externally and internally; the second-grade were only covered externally; and the third or poorest were simply dipped into the lacquer, thus leaving numerous small crevices which made it almost impossible to sterilize the instrument. His own practice was to scrub and flush out the catheter immediately after use, then to boil it for five minutes, then to dry and store in closed glass tubes.

Dr. Ferdinand C. Valentine exhibited an apparatus for sterilizing the cystoscope, in which this instrument could be exposed to a temperature of 240° C. without injury. It was his rule to employ irrigations of the urethra and bladder after the slightest instrumentation; he could not see how irrigation before the introduction of the instrument would be of any service whatever. He asserted his belief that it was in consequence of this routine irrigation that he had not had a single case of catheter fever for the past three years.

A Deadly Heirloom.—Dr. Martin, in closing the discussion, said that his purpose in presenting the paper had been, not to complicate the method of sterilization, as the speakers seemed to think, but to simplify it. The danger of using the metallic catheter had been forcibly impressed upon him by an incident in his hospital service. A physician from the South who was suffering from retention of urine was violently opposed to having a metallic catheter passed upon him, and when he was finally convinced that this must be done he made his will and prepared for the worst. To his astonishment he survived the ordeal, and then explained that in his family there had been a "hereditary" silver catheter, that had descended from his grandfather, and that, according to the traditions of his family, every one upon whom that catheter had been passed had died within two months.

Typhoid.—I believe the Woodbridge treatment of typhoid fever as a specific is a delusion.—Hugh F. Lorimer.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE TYPHOID EPIDEMIC—HOSPITAL REFORM—OBSTETRICAL SOCIETY—COLLEGES OF PHYSICIANS AND SURGEONS—GUILD OF ST. LUKE—MEDICAL COUNCIL—PROFESSOR STOCKMAN—JUBILEE MEDALS—INEBRIETY—DEATHS OF SURGEON-GENERAL CORNISH AND MR. O'GRADY.

London, October 22, 1897.

The epidemic at Maidstone is still prevalent and causes great public anxiety. It is also the chief topic of conversation when doctors meet. It will perhaps prove the most disastrous epidemic we have seen. There was a fall in the number of fresh cases at the end of last week; on Monday last they declined to 4, on Tuesday to 6, but on Wednesday they rose again to 18. Yesterday there were 14, raising the total from the beginning to 1,715 with 106 deaths. The medical officer's report shows up to Wednesday a weekly average of 12.2 cases per diem as against 26.4, 69.4, and 74.4 for the three preceding weeks respectively. Many are encouraged to hope that this shows the danger is subsiding, but an examination of the daily figures gives rise to doubts. The number of young lives sacrificed is large, about half the deaths having been of patients between the age of five and sixteen. About one-third of the six thousand houses in the town are without proper water supply for the closets. This and other sanitary defects the corporation is determined to remedy as rapidly as possible.

The polluted water pipes were disinfected between Saturday and Monday under the direction of Dr. Sims Woodhead, several tons of chloride of lime being dissolved and the solution passed into the pipes. Why so simple a plan could not have been tried three weeks earlier is as great a mystery as why the water was not cut off at first. The only reason appears to be that the water company did not like the expense. The deaths of more than one hundred persons and the terrible sufferings of the others seem to have had no effect on the monopolists, except as producing a fear for their dividends. The public is indignant, but at present pity is the chief feeling. The judgment of the monopolists is yet to come. The local government board has consented to hold a public inquiry as soon as it will not interfere with the work of attending to the immediate needs of the sufferers.

The Hospital Reform Association held a conference yesterday at which they had secured the Earl of Stamford as president. His lordship quoted statistics showing the enormous increase of outpatients, and read a letter from a general practitioner lamenting the want of cohesion in the profession and holding that the position could be commanded by union, just as the workingmen have found that combination alone can make them masters of a situation. Other speakers animadverted strongly on the fact that a very large proportion of these outpatients were not proper objects of charitable relief.

Mr. Timothy Holmes, who has always taken an interest in this question, held that it is not so much a pecuniary as a medical one, the time of the consultant being too much taken up with chronic or trivial cases. But the general practitioner will reply to this only that the consultants could relieve themselves if they would, and in so doing would remedy the abuse.

Sir William Broadbent took a different position, remarking that to get rid of abuses medical men must have power behind them, and this power they had in the Sunday and other funds, but time would be required. This strikes me as very poor support to the cause, for

the Sunday fund has had a fairly long time but has never moved in this or any other way likely to benefit the general practitioner. The managers of the fund have one *bête noire*—the special hospitals: but if they could shut them all up they would gladly transfer all the patients to the overcrowded waiting-rooms of the general hospitals and contribute to enlarging these. How would this benefit the general practitioner or diminish the admitted abuse?

Sir H. Burdett recommended the association to wait until next year to see the result of a new plan of collection and distribution. Then he said many out patients were willing to subscribe and could do so by means of a projected stamp album. This is much like the invitation, "Open your mouth and shut your eyes and see what I will send you." The general practitioners are to wait with open mouths while their patients buy six-penny albums and say they are entitled to the hospital care for which they have paid!

A resolution to appoint a committee was carried, but most of those present refrained from voting—a sad indication on which the reformers may well ponder.

At the Obstetrical Society a paper by Mr. Doran on the management of true and false capsules in ovariotomy gave rise to an interesting discussion. Mr. Doran wrote an article last year on the anatomy of these capsules, in which he referred in reply to an inquiry as to the precise anatomical differences. When a capsule should be cut away, when it should be let fall into the pelvis, and when it should be stitched to the lower end of the wound and drained, were the main points considered. The first plan should be followed if possible when the capsule is healthy, the second when no pedicle can be formed and hemorrhage is under control. Fixation must be employed when there is advanced inflammatory change with suppuration of the tumor, or when hemorrhage is not quite controlled. The question of using iodoform-gauze stuffing evoked some different opinions. Dr. Herbert Spencer had used it with great satisfaction for the last four years, and considered it an excellent means of checking hemorrhage, averting sepsis, and blocking out intestines from torn capsules and infected areas. Dr. Cullingworth (president) said he had not had a large experience with gauze packing. Its removal was a formidable matter and produced so much distress, bodily and mental, that he used it only when compelled. Still he recognized its immense value in certain cases, *e.g.*, in hemorrhage from vessels to which it was impossible to apply a ligature on account of their lying so deep in the pelvis. The subject of iodoform poisoning was also mentioned by some of the speakers.

The Harveian oration was delivered at the College of Physicians on Monday, when a good audience assembled. The orator this year was Sir W. Roberts. At the close the Baly medal was presented to Professor Schäfer; the first Weber-Parker medal and prize were awarded to Dr. Arthur Ransome, and a second medal was given to Dr. Peter Paterson of Glasgow. The Moxon medal was awarded to Sir S. Wilks, the president.

At the meeting of the council of the College of Surgeons thanks were awarded to Mrs. Gowlland for the presentation she had made of the beautiful drawing of her late husband; and Dr. Woodhead reported the results of his recent visit to Germany to compare the methods of preparing diphtheria antitoxin.

The "Guild of St. Luke" should be satisfied with the success of its special service at St. Paul's Cathedral, which was held on Thursday evening, when the archbishop of York preached. In the course of his sermon he said to the assembled doctors: "The most ancient of the guilds were religious institutions, and the medical profession has never been lacking in contribution to religious literature. Yours is a religious calling, though not usually accounted as such."

The Guild of St. Luke is a society of medical men attached to the church—mostly the very "high" church and much given to ritualistic practices. Perhaps from its prepossessions in this direction arose its desire for a great ceremonial in the cathedral. A service was arranged for and graduates were asked to come in their academic robes. A large number did so, and gowns and hoods gave color and brilliancy to a scene such as is seldom met with in church, for the congregation was a large one even for the cathedral.

The majority of Prof. Victor Horsley over Sir W. Foster exceeded eight hundred. The official return of votes recorded is: Mr. Horsley, 6,946; Sir W. Foster, 6,112; Dr. Rigby, 197; Dr. Diver, 81.

The new calendar of the College of Surgeons gives the number of fellows as 1,191 against the members' masses of 17,332. The finances seem to be flourishing.

Dr. Stockman has had a very warm reception at Glasgow as the new professor of materia medica at the university. He delivered his introductory lecture on the 14th, when the principal introduced him, welcoming the bearer of so splendid a reputation, and Professor Gairdner referred to his great qualifications for the chair. The students gave him a good welcome too. In his address he paid a tribute to Professor Charteris, his lamented predecessor. Dr. Stockman's friends in Edinburgh invited him to a dinner before he left and were equally enthusiastic as to his merits.

Dr. Fred. St. George Mivart has been appointed a medical inspector to the local government board in consequence of the lamented decease of Dr. Barry, mentioned in my last. The new government inspector qualified in 1881, took the F.R.C.S. of Edinburgh in 1885, and M.D. at Louvain in 1889.

The jubilee medal has been conferred on Sir William H. Flower, K.C.B., F.R.S., president of the Zoölogical Society, and Dr. Hicks, F.R.S., president of the Geological Society.

Surgeon-Major Poole, M.D., read a paper last week before the society for the study of inebriety, in which much testimony was collected in confirmation of heredity as a chief cause. The president, Dr. Norman Kerr, and several other members repudiated the common remark that "doctor's orders" were mostly to blame. Dr. Kerr said he could trace such influence in not more than one-half of one per cent.

Surgeon-General Cornish, C.I.E., honorary physician to the Queen, died on the 19th inst., aged seventy years.

Mr. E. S. O'Grady died of pneumonia on the 18th. He was the gentleman who was determined to bring the conduct of the managers of the Mercer's Hospital before a court of law and who declined to allow them to confiscate his rights. His courage and uprightness were remarkable, and his skill as a surgeon was acknowledged by all. What will be the effect of his unexpected death on the Mercer's scandal it is too soon to conjecture.

THE TREATMENT OF PULMONARY TUBERCULOSIS.

To the Editor of the Medical Record.

SIR: As a country practitioner I would like to ask the editor or the readers of the MEDICAL RECORD for information regarding the treatment of consumption. Professor Koch discovered the bacillus and has ever since been trying to find something to kill it. Shirley, of Detroit, a few years ago, it will be remembered, tried the inhalation of gas for the same purpose. Not long ago an article appeared in the MEDICAL RECORD detailing a number of patients "cured" by intrabronchial irrigation. One of these patients has just gone

to California to see if there is any help for him in the bland climate of the Pacific slope. We country doctors must of necessity follow the leaders in the large cities. We cannot experiment, but must select the best fruits of investigators in the great medical centres. Now what I would like to know is: Are we working along sensible lines? Are we not pursuing a phantom when we expect to kill the bacillus or wash it away? These leaders tell us that we drink in and inhale bacilli; yet they spend their time "curing" cases by killing the bacilli. The next day perhaps their patient inhales or drinks in a few more; then of course they irrigate or inflate or in some other abstruse way cure the patient some more, and so on *ad infinitum*. Is this common sense? It is a pretty theory and attractive—particularly in these hard times; but is it professional, is it honest? I suppose of course that we all get these bacilli in one way or another into our systems; then why do we not all have tuberculosis? Isn't it reasonable to believe that the reason some of us do not have consumption is because they (the bacilli) do not find in us a suitable soil for their development? If this be true, is it not the most sensible plan to divert our attention from the poor worn-out bacillus to the man himself, and endeavor to place him on such a high plane of health and vigor that this miserable little microbe will fall in the "battle of the cells," and save us the trouble of trying to kill him by shooting at long range with tuberculin or an irrigation tube?

If we can ever succeed in killing the bacillus, will it "cure" the case? I would like to know.

E. W. Bogardus, M.D.

Port Jervis Ridge, N. Y., October 25, 1897.

ANÆSTHESIA AND ITS ADMINISTRATION IN GREAT BRITAIN AND IRELAND, WITH SPECIAL REFERENCE TO ITS BEING MADE A SPECIALTY.

To the Editor of the Medical Record.

Sir: Stimulated by your recent editorial on "Anæsthesia as a Specialty," in order to learn of the ways and means in Great Britain I addressed a series of questions to my esteemed friend, Prof. George Bell Todd, M.B., of Glasgow, and with his permission take the liberty of sending you his valuable communication, feeling certain that it will be of interest to many of your readers. A. Ernest Gallant, M.D.

"**General Remarks.**—Anæsthetists as specialists are not common in our islands; that is to say, specialists in the sense that they engage in that department alone. Still, there are one or two in London and other large English cities who live principally by this calling.

"I cannot give you details as to the exact number of men in Great Britain and Ireland who live by this specialty alone. I should be inclined to put their number at a dozen, at the outside.

"All our chief hospitals here keep an anæsthetist—that is to say, one or more members of the medical staff who by past experience, are regarded by them as capable of administering anæsthetics, and who receive, in alas! too many instances, an honorarium for their work equal to twenty guineas, which is considered by the hospital directors quite enough for such responsible work. In smaller hospitals it is common to give ten or fifteen guineas as a remuneration, and many special hospitals give no remuneration at all. There are two medical men in Glasgow who go in for anæsthesia as a specialty, but they engage in private practice as well. One is the anæsthetist at the Glasgow Royal Infirmary; the other is our new anæsthetist at the Samaritan Hospital. These gentlemen are frequently employed in dental operations at dentists' rooms and at the patients' own residences. In fact, I may mention that so strict are the authorities that no dentist will risk giving chloroform or ether in a big operation without calling in the patient's medical man to give the anæsthetic, or else bring in an anæsthetist. This is certainly the most fruitful source of income for the latter.

"Again, most surgeons in cities employ a young medical man of a few years' standing to give anæsthetics to their private patients. On inquiry one often finds that the young medical man is his chief's assistant in the hospital; not the house surgeon, but the deputy or assistant surgeon, appointed to the surgical wards—more often at the chief's request than at the option of the governors, at least as far as Edinburgh and Glasgow are concerned.

"Sometimes, but not very often, medical students in their fifth year may be taken out by their teachers to administer chloroform; but these men have completed at least two years' hospital training, and probably have given anæsthetics in the hospital under their teacher, his assistant, or the house surgeon.

"I may remark here that female medical practitioners in this country are peculiarly unfitted to give anæsthetics. That such is the case I know from experience, and it is well illustrated at the Woman's Hospital, Euston Road, London, which is remarkable for the failures in administering chloroform correctly.

"As to the ordinary house surgeon, he may be said to be an unknown quantity so far as the giving of an anæsthetic is concerned. Nothing worries a surgeon more than to experience the attempts of a new house surgeon administering an anæsthetic, and also the uncertainty of his success until he has gained the requisite knowledge, when too often the young man is transferred to the medical wards of the hospital, never again to enter the surgical wards unless he has the good fortune to be appointed assistant to his chief, which is about one chance in a hundred.

"A very good plan is that every anæsthetic administration in a hospital is noted in the ward journal, and by whom given, together with any physical signs, pulmonary or cardiac, that have been discovered before the administration took place.

"No student is allowed to administer chloroform in any case before his fourth year, and who has not had two years' hospital experience. He is usually picked out by his teacher from among the other men, owing to his aptness.

"It is often the case that unqualified assistants in private practice administer chloroform and ether very well, but these men have been taught by their employers and have an experience in some cases extending over many years. (They are chiefly 'chronics' and men who have to work in the struggle for existence to keep themselves at their classes; this is common with Scotch unqualified assistants, who are employed by English medical men chiefly in large colliery practices.) But this class is dying out, as the authorities insist on the giving of anæsthetics by qualified men alone, as often crops up at coroners' inquests.

"The newly fledged practitioner is remarkable for his inability to administer an anæsthetic correctly. This is a common complaint among country practitioners.

"So far as the medico-legal aspect of the case is concerned, the anæsthetist must be a qualified registered practitioner. If he is not qualified and registered, he cannot sue for fees in the courts of the land. Otherwise he is regarded in the eye of the law as a quack.

"In order to give you the exact details of the number of anæsthetists at all the hospitals in this country, and the bylaws in force at the various hospitals regulating the administration of anæsthetics, I should require the services of a special commission to visit each hospital and report.

"I have endeavored to give you, I believe, a correct and faithful statement of the case as pertaining to London, Dublin, and Scotch hospitals, and of that of general practitioners here, so that it cannot be said that every Tom, Dick, and Harry has the opportunity or even gets the chance of inflicting a nuisance in the way of giving anæsthetics inefficiently.

"I might close these general remarks by stating that the late Sir George H. B. McLeod was so particular in giving chloroform himself that he commenced the administration in every case, and handed the further work over to his assistant until he himself completed the operation. He had some seventeen thousand administrations with only three deaths, and these took place within the last three years of his life. I merely mention this, as he was my last surgical teacher.

"**I. As to Previous Training and Experience.**—The student gets special lectures from his hospital physicians and surgeons on N_2O, $CHCl_3$, and ether; and combinations, as what is called the A.C.E. mixture here = 1 vol. alcohol, 2 vols. $CHCl_3$, 3 vols. ether—so proportioned, I believe, that they evaporate equally and uniformly at the same temperature and barometric pressure. The student requires to know the use of N_2O and its mode of administration, but nothing can make up for lectures on these modes of anæsthesia except the practical information gained by administration.

"**II. Physical Diagnosis.**—The student is taught to make a searching physical examination of the heart, blood-vessels, lungs, and kidneys as to the presence of organic disease before the patient is proposed to be operated on. If the patient is under observation, it is always the rule to make such an examination a day or two before the proposed administration and not immediately before, as is sometimes done, as it often excites the patient and affects the breathing, etc. Just lately we had a case at the Samaritan Hospital in which pulsation in the suprasternal notch with some increase of dulness at the base of the heart revealed an aneurism of the aortic arch. This escaped the observation of the resident, a lady doctor, till it was pointed out to her.

"The pulse is most important to notice beforehand, as it becomes so altered under chloroform administration. The student is taught to know what a dicrotic pulse is like, so that he may be able to look ahead during the administration of chloroform.

"**III. Urinalysis.**—The presence or absence of albumin is carefully noted; also specific gravity, reaction, etc.

"The presence of sugar in the urine is an indication that if it is necessary to give chloroform the pulse and breathing require particular attention, as often in these cases fatal results follow. This point is strongly impressed on students and medical men also.

"**Inhalers.**—The practice generally followed here is to use an inhaler such as Clover's or Junker's. Quite a number of good inhalers are in the market, and a good anæsthetist will be able to substitute any of them he pleases, or even use the towel or the flannel, or linen-covered cage which acts as a respirator. Our method at the Samaritan Hospital is, say, for merely an examination under chloroform, to give it on a respirator; also for a minor operation; for a major or any operation taking some time, the patient is first put under N_2O, and then kept under ether or chloroform, as the anæsthetist may choose.

"The student is always shown the best apparatus to use; indeed, he must know them as well as any other surgical instruments he may be shown at his examinations.

"**Stimulants** in every case when necessary are given by the orders of the anæsthetist, another medical man administering brandy or whiskey by mouth, or brandy or ether hypodermically, as the case may be.

"Sometimes the patient may get, say, one-half ounce of brandy some little time before being anæsthetized. This is very seldom the case, but it is sometimes given when there is a weak pulse. The general rule is to discourage the use of stimulants unless absolutely necessary. Nitrite of amyl in a broken capsule is sometimes given in threatened collapse, to act as a stimulant to the heart, of course by inhalation.

"Stimulants are always at hand in the operating-room, so as to be ready for instant use if necessary.

"**Means of Resuscitation.**—The artificial methods of respiration are always used. Inversion of the body is strongly recommended before artificial respiration is commenced. Inversion alone has saved a good many patients. The sudden application of a large cloth dipped in boiling water to the cardiac region is useful; a hot towel removed from a steamer has been very useful with us at the Samaritan Hospital. These various acts are performed on instruction by the anæsthetist himself, and not by half a dozen men all shouting at the same time.

"**The Best Anæsthetic and who Decides.**—The anæsthetist states which he purposes to use, and the physician or surgeon usually concurs; at other times he may intend to use chloroform, and finding it unsuitable administer ether.

"**Responsibility.**—The surgeon is not responsible; the anæsthetist is responsible for the patient as long as he is under the anæsthetic. It is agreed that it rests entirely with the anæsthetist.

"**Fees** in private practice are usually handed over to the anæsthetist when the surgeon or physician gets his, unless there is any arrangement for being paid before leaving the patient's house, as sometimes patients prefer to pay the anæsthetist at once.

"**Substitutes.**—With us, usually myself or another member of our staff takes the place of the anæsthetist if he be called away.

"The anæsthetist is required to attend the hospital at the usual hospital hour on all operating-days (with us, 9 A.M., Wednesdays and Saturdays), whether he is needed or not, and at any other time his services are necessary. Of course he knows exactly when to come, as he is on the telephone.

"The anæsthetist rarely asks the interne to do his work; in fact, internes here do not care much about that kind of work.

"The professional standing is good. An anæsthetist usually takes up a specialty like the throat, eye, or gynæcology, or the ear, as he has no time for general practice."

ECONOMY IN HYPODERMIC NEEDLES.

[illegible] M[illegible] R[illegible]

SIR: Thousands of hypodermic-syringe needles are thrown away each year as useless by members of the profession, which could with a slight amount of trouble be restored to their original state. The channel of the needle becomes occluded, owing to the deposition of material derived from the injection fluid. This precipitate is readily dissolved and removed by boiling the needles for a period of ten minutes in a solution of sodium carbonate, which not only cleanses the needle internally, but restores the brightness of the external surface as well.

ADOLPH G. BROWN, M.D.

Key East, N. J.

PUERPERAL SEPTICÆMIA.

SIR: On reading the discussion held by the New York Academy of Medicine, one can but note the difference of opinion entertained by the various members in regard to puerperal septicæmia, its source, and its treatment. Although mine has been somewhat limited, yet I feel that I have had ample experience to justify the following conclusions: that the source of infection is undoubtedly through the uterus, not the vagina; that in a large majority if not in all cases the cause is principally the retention of offending matter *in utero*.

The absorptive power of the vaginal mucous membrane is not great under ordinary conditions. Now, then, this offending matter is one of two things—either secundine or the necessary discharge. This product is by retention so exposed to the abraded portion of the intra-uterine surface that absorption takes place.

All the cases of puerperal septicæmia I have witnessed bear me out in this conclusion, and I think if a proper search is made one will rarely fail to find the cause; and yet the apparent cause is so slight, so inferior to that found in other cases that present no grave symptoms, that we are inclined to infer that systemic conditions have much to do with and are much at fault for this trouble. I have not found septicæmia more prevalent in badly lacerated cases; in fact, my experience has shown quite to the contrary, and convinces my mind that we must look elsewhere than to lacerations of either the uterus or the vagina for a solution of this subject. Just how much is to be attributed to general systemic conditions is a question that to my mind demands a yet closer investigation, and until further evidence has been brought to light on this part of the subject I shall continue to be of the same mind I now am. I have watched these cases closely and earnestly for the past twenty-five years, and I feel that so far we are largely in the dark as to the nature and cause of this dread disease. That thorough cleanliness is a step in the right direction is indisputable. That therapeutical remedies fail in each and every case is also a sad reality. That curettage to a degree that would in the least irritate the endometrium is next to criminal, and anything further than the removal of retained morbid matter from the uterus and its thorough cleansing by the gentlest means is meddlesome and to be condemned. I do not believe ergot has any influence in preventing septic conditions. I rarely give a dose nowadays, and have less trouble than formerly when I believed I had not done my duty until I had given at least one drachm of fluid extract of ergot. I believe that, if we eliminate this "general systemic idea," in thorough cleanliness of the uterus we may safely trust for our success. Proper food, with favorable hygienic surroundings, is next in importance. I am convinced that with a clean uterus we may rest content that nature will do the rest. To obtain this it is not essential that every emptied uterus should be irrigated with any and all kinds of so-called antiseptics. Not at all. In fact, very few need anything of the sort. I rarely irrigate a uterus after delivery at full term; I am more chary regarding one that has attempted to expel its contents prematurely, and on the first unfavorable symptom presenting I rarely fail to wash that organ. One thorough washing is most often sufficient, and I would caution against frequent repetition. Do not repeat your irrigation except as indicated by results obtained, and if this course is followed prudently yet thoroughly by the physician himself you may "to the dogs with your physic."

WILLIAM A. DAVISON, M.D.

[illegible], Mass.

A NATIONAL QUARANTINE SYSTEM.

[illegible], Miss., [illegible]

SIR: Any observant traveller through the South just at this time, when yellow fever is so much in evidence, cannot but become forcibly impressed with the necessity for a quarantine system that is broad and comprehensive in its scope and that can be made to extend beyond the range of small towns, counties, or municipalities. Petty jealousies between rural localities, quarantine regulations widely at variance, and a lack of harmony in the construction and enforcement of quarantine methods have done as much, during the present yellow-fever epidemic in the South, to bring hardship and disaster, as the disease itself.

A recent tour through the South convinces me that this statement is perfectly true. The lack of confidence in local regulations, the harshness with which they conflict with the regulations of adjoining localities, the laxity of methods pursued, are all apparent to the crudest observer. I was informed by many railway officials in the South and by quarantine officers themselves that the attempt, as it is made by the different localities, to prevent the spread of the disease is really doing greater harm than the disease.

All epidemics that assume the scope and magnitude that yellow fever has now assumed in the South are interstate matters always, and matters of vital importance not only in so far as lives are endangered, but in jeopardizing and destroying commerce. The national government has jurisdiction over interstate commerce. Why can it not regulate and preserve the health and comfort of the people, when they stand endangered by so universal and deadly a scourge as yellow fever, and when local measures to restrict its spread are tentative and inefficiently administered?

A national quarantine system or an interstate quarantine system administered by the national government, if done conservatively and efficiently, would give confidence, destroy conflicting regulations between minor communities, and do much to relieve epidemics of the present kind of much of their real harm. Let us have a national quarantine system, and let it exist in fact as well as in name.

WILLIAM P. SPRAGUING, M.D.

[illegible], N. Y., [illegible]

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 6, 1897:

	Cases.	Deaths.
Tuberculosis	200	111
Typhoid fever	28	9
Scarlet fever	121	7
Cerebro-spinal meningitis	0	3
Measles	189	13
Diphtheria	143	24
Laryngeal diphtheria (croup)	1	3
Chicken-pox	10	0

Eye Complications of Typhoid include, according to C. Stedman Bull, catarrhal conjunctivitis, phlyctenular conjunctivitis and keratitis, loss of accommodation for dilatation by paralysis of the iris sphincter, retinal hemorrhages, paralysis of the external muscles, neuro-retinitis or retrobulbar neuritis, amblyopia, hemianopia, inflammation of the uveal tract, iritis, cyclitis, choroiditis.—*La Méd. Mod.*

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Original Articles.

WHAT MUST WE DO TO BE SAVED? BEING AN INQUIRY INTO AND A BRIEF SUMMARY OF THE CAUSES LEADING TO THE HOSPITAL AND DISPENSARY ABUSE OF MEDICAL CHARITY.[1]

BY THOMAS J. HILLIS, M.D.,

NEW YORK.

THERE is really after all nothing very startling in the title of this paper; it simply means that the profession of which we are a part is threatened on all sides and beset by many dangers.

It will be my object to-day to point out some of these dangers, and leave the task of applying a remedy for another time, since the few minutes allotted me here admit only a cursory glance at this wide field.

The medical press throughout the country teems with articles on hospital and dispensary abuse, and a wail of distress is heard from one end of the land to the other from the rank and file of our profession. They say that among the causes for this distress and discontent the abuse of charity in hospital and dispensary stands single and alone, conspicuous in its isolation; that these institutions have broken faith with the profession which created them and made their existence possible; that if these abuses are allowed to continue, in a short time a practitioner of medicine will be a rare curiosity outside of a hospital or dispensary; that a profession more ancient than the Golden Fleece or Roman Eagle, and endowed with attributes of mercy and honor, will perish from the earth, and there will remain only the hothouse plants, the clinic and maternity home, founded, fostered, and nourished by a millionaire whose memory is not savory, through the dollars wrung from honest toil and the millions made through syndicates by the maladministration of a government supposed to act for the interests and welfare of the people—a supposition, however; an illusion and a snare.

Before proceeding any farther, it might be well to inquire into the truth or falsity of these charges, so boldly advanced by the profession, against hospital and dispensary.

These concerns are dealing only with conditions that present themselves continually. These conditions are effects, not causes. These effects will be traced to their sources. It will be the purpose of this paper to point out these sources and fasten the responsibility where it belongs. Then there are causes for this hospital and dispensary abuse, and for all the abuses pointed out by the physician in his calendar of persecution and oppression. These causes will be considered, and in the classification of causation the physician himself will have the honor or dishonor of holding high place or being first cause.

This paper will trace an ambitious, unscrupulous young physician, from the moment he leaves the classroom to hang out his sign, proclaiming to the world his calling and inviting that world's approbation and patronage, through years of toil and intrigue, through the ups and downs of a busy, ceaseless activity. It will watch him in his dealings with others, particularly his brother practitioners. It will see if he observes the golden rule, "Do unto others as you would like to be done by," and if the word brother has any meaning, as applied by physicians to each other, and whether it is not hollow and delusive.

By following this physician through the mazes and perplexities, the labyrinths and subterranean channels in which a professional life will run for the first fifteen years of its career, we shall not have much trouble in discovering the principal source from which the river of hospital and dispensary abuse has sprung—namely, the physician himself. Though ages have rolled away since the inspired words were uttered, they still ring through the universe, at once a command, a warning, and a benediction—"Physician, heal thyself."

His Journey in Pursuit of Success.—The young physician, after receiving his diploma, and with the benediction of his alma mater ringing in his ears, starts out into the active practice of his profession. He will not tarry in Jericho until his beard is grown, or immure himself in his cloister until the ink is dry on his diploma. He is charged with medical energy, as a balloon is with vapor or a battery with electric force, and as the exponent of the gospel of healing he sallies forth, a veritable Don Quixote, to heal the sick and bind up the wounds of the injured, though the practical knowledge properly to apply his methods is as crude and visionary and as barren of results as was that of the redoubtable knight to regenerate and reorganize society. He refused to listen to an old physician, as full of knowledge as he was ripe in years, waving him off with a grandiloquent motion of his hand when he offered to point him the way on that memorable morning he started out on his professional career. This stripling out of school, now turning himself loose on society, refused to hear the advice of a sage.

Lord of Himself, a Heritage of Woe.—After some effort he finds a desirable neighborhood in which to locate, and after further effort he secures an appointment on the staff of a free dispensary. He joins a medical society, and the church in the neighborhood; he is now honored as a resident.

The dispensary, while giving him experience which he sadly needs, occasionally supplies a patient whom he can corral to his office by a little deception, quiet entreaty, and tact. In the church he can get at close range to the pastor, and to know the pastor well has a special significance for him, to which assertion many successful physicians can attest. The medical society aids too, by imparting dignity and stability, and, further, it lifts him high above the quack and other vendors of medical wares. Having now secured these three objects so dear to his heart, he has a further ambition; he wishes to become a lecturer, with the ultimate object of blossoming out into a professor. So he hires the lyceum attached to the Sunday school, for a course of lectures on longevity and hygiene, under the auspices of the pastor and board of trustees of the church. To be honest in the matter, he cares not a

[1] Read at the fourteenth annual meeting of the New York State Medical Association, October 12, 1897.

rap about the longevity or hygiene of this particular neighborhood; it would be to his interest were the sanitary conditions to remain bad, and disease, endemic and epidemic, to spread its wings over the people. Unfortunately, he wishes only to exploit himself, and under cover of a lecture, the subject of which he knows little or nothing about, to advertise himself among what may now be called his new constituency. His lecture is commonplace and abounds in catchwords and well-worn phrases, but, as the admission is free, it is heard by the people, who are attracted more by curiosity than by a thirst for knowledge.

In that town where Dr. Youngblood located there were four other physicians; but it will be observed that he did not visit any of them for counsel or advice on such a momentous undertaking as locating and making a start in the practice of his profession. He did, however, visit a livery-stable keeper, and a druggist, and the superintendent of a patent-medicine plant. The liveryman thought there was an opening for a bright young man, especially if he could afford to drive; it would impress his personality the more. The druggist was sure there was an opening, as none of the other four doctors in the town was very well liked; but he asked the physician as a special favor to keep that to himself, as he would not for the world have his name mentioned or in any way mixed up in the matter, since he was only helping a clever young man to make his way in the world. The superintendent of the patent-medicine plant was certain there was room for another physician, and success was already assured if he would only push certain new remedies that his firm was now placing on the market. His signature and photograph would be of great value to them; besides, it would advertise him, it would be a ready avenue to the public ear, and perhaps to the people's heart.

While he was talking to the superintendent, a gentleman stood by, who later said: "The doctors are sleepy in this village; we want a live man, who could easily make a fortune in a very few years." He did not, however, say that he himself was a bankrupt, who defaulted on his obligations, and who was now a fugitive from the vengeance of his creditors.

While talking to the postmaster, Dr. Youngblood fell in with a new acquaintance, who welcomed him to town, spoke highly of his lecture at the lyceum, which he declared he heard with great pleasure; in fact, his wife and oldest daughter were delighted with it, and wished particularly to know when he would deliver his next lecture. In their opinion the last was a masterpiece—plain, forceful, and convincing. He also made mention of the several patients he had sent to him for treatment, as the diagnoses of their cases by the other physicians in the town were doubtful, and the treatment was very unsatisfactory. He added: "We are sadly in need of young blood in this town of ours—and, doctor, what a singular coincidence, your name is Youngblood too. Indeed, how peculiar! A dead streak of luck for you, I assure you."

Dr. Youngblood knew later, but was not now aware, that he was talking to a dead beat, who fleeced the other four physicians in the town for professional services rendered, and who found this gentlemanly means of paying them for the same.

Now Dr. Youngblood felt naturally proud for this mark of respect from his new townsman, also for the kindness he showed him in recommending his friends to his professional care, and invited him to call at his office to see him socially, and, if ever the occasion arose requiring his professional attention, it would be rendered gladly and with good will. This young disciple of Æsculapius, now on the high road to success, did not send any of his professional brothers an invitation to his lectures at the lyceum, but it was observed that one or two bald-headed gentlemen sat in an inconspicuous corner of the lecture hall, and a young lady nudged her escort, exclaiming: "Why, I declare, there are Dr. White, and our old physician, Dr. Black, taking notes of the lecture." Sure enough, the gentlemen were there, to hear what new facts this new physician could impart regarding longevity and hygiene. As before related, they were not invited or consulted in any manner in relation to the lecture or its management; in fact, so far the young lecturer has not seen fit even to ascertain the names of his brother practitioners in the town; he has, however, a well-defined and definite knowledge that they exist. He heard certain names echoing through some sick-rooms where he was called professionally, but these names burned deep into his heart, as they were mentioned with affection and respect, and he made a mental resolution that he would never rest or be satisfied until he downed these patriarchs, whom he regarded as old fogies and only a stumbling-block in the road of progress—indeed, a direct hindrance to the new medical dispensation.

Now Dr. Youngblood cares not a mill for the etiquette of his profession; it has no concern for him. At present he is interested only in himself, and must and will build up his practice, even though the heavens fall and the earth trembles under his feet. Now to accomplish his purpose he will break down all the barriers that have hedged in the traditions of an ancient and honorable calling. He flings etiquette out of the window; later on, after he acquires success, he may amuse himself by observing this etiquette, and perhaps, if pressed hard, accept the presidency of a medical society; at present, however, he is too busy to bother himself with such toys.

In the evening the young physician is consulted by a lady who has contracted a severe cold, which she cannot shake off. She has a cough mixture prescribed by Dr. Goodman six months previous; it helped her then—it has failed now. She did intend to see Dr. Goodman again. He has been the physician of her family for twenty years, has led a blameless life, and is respected by all; but a gentleman of her acquaintance persuaded her to consult Dr. Youngblood, who spoke about a serum in his lecture at the lyceum on Monday night, and said that if this serum was injected under the skin it would quickly destroy the bacilli which were playing tag and having a jollification in the blood current.

"You said at the lyceum lecture that you saw, through your powerful microscope, these little bacilli playing croquet in the lung tissue and having a lawn party on the apex of the right lung of one affected with tuberculosis. These were dreadful things to see, doctor, and if this was told by any other physician in the town we should say he was afflicted with nightmare; but you, coming fresh from a great college, carry the latest, the very latest information, and tell it with an eloquent simplicity that cannot fail to gain for you respect and popularity."

Dr. Youngblood, charmed by the candor and goodwill of this lady, explains that after these pestiferous creatures have been driven out the lung will resume its normal function and the cough cease at once. He makes an artful but superficial examination, and discovers the bacilli lurking within, though he does not communicate this fact to the young lady in words; but his look is fraught with direful forebodings, which he tries to hide by that professional smile, that may mean much or nothing, and is so well known to us all. He gives an injection of his tuberculin; he says another and still another may be necessary, and occasionally the little pests are so well fortified within the house of clay that they cannot be dislodged. However, he is sure that such will not apply to her case, as she has

taken it in time; but as a matter of routine and precaution he gives her a sedative, and enjoins that she shall take a cathartic pill every night and avoid draughts, and dismisses her, after requesting her presence again in two days for further consultation and instruction. At the appointed time she returns with her mother, who thanks the young physician for his successful treatment of her daughter's case. The cough is much less frequent and by no means so hard as it was. "Dr. Youngblood," says the patient, "I believe your serum has accomplished its purpose, and brought death to the miscreants that were gnawing at my vitals; I am happy now, and feel a load off my heart, and regard you as my benefactor."

"Doctor," says the young lady's mother, as she is about to retire with her daughter, "my son was at the Liberal Club on Saturday night, while you gave an exhibition of those wonderful and mysterious *x*-rays, and told so graphically, so lucidly, how you located the bullet in a veteran's heart, which he received while protecting his country's honor and subduing strikers and riot. As it happened, doctor, he was a colonel in the national guard of my own native State, Pennsylvania. As you so graphically and pathetically described, he carried his wound for twenty long years—how he suffered, and what great skill and surgical tact you displayed in locating and removing the cause of his trouble! My son further told how you said you removed a dreadful cancer, by a method new and peculiarly your own, from the walls of the stomach of a lady from India, who came the long journey to have the benefit of the best talent, as the physicians of the Orient had regarded her case as altogether a hopeless one."

Says the lady with emphasis mingled with pride: "My son is an observing young man; he related this story at the whist party we had at our house last night. His father is thinking seriously of making him a physician, and said you would be an excellent preceptor. Before I go, Dr. Youngblood, let me assure you of my good will, and you can count in future on the patronage of my family and of every friend of mine I am able to influence. To be sure, Dr. Goodman has been our medical adviser for twenty or more years. We have esteemed him highly; his successes are entwined in the memory of our house, and his failures we have regarded as the visitations of Heaven; but I declare, doctor, you have captured us completely. My daughter here is in ecstasies over your treatment of her own case."

The young physician's vanity is tickled, and he is justly proud of his success. He tries to hide this pride from Dr. Black, who has not had the pleasure of his acquaintance, as he has not been out much, because of repeated attacks from his old enemy, the gout; but he has heard remarks dropped here and there about the lyceum lecturer and the social confabs at the Liberal Club; but, as might be expected from his age and experience, refrained from criticising the young physician, whose success under legitimate conditions he would be inclined to consider with a kindly feeling, though it leaked out that he did not have a very exalted opinion of the subject matter of the lyceum lectures, or, for that matter, of the lecturer himself.

A Consultation between Physicians.—Now it happens in this wise. Dr. Black is in attendance on a child, sick with a dangerous disease; the case presents grave features. Dr. Black, while retaining the confidence of the family, requests a consultation, and modestly leaves it to themselves to choose who the consultant should be.

On entering the sick-room at ten o'clock next morning, though the hour for consultation was set for 10:15, he is surprised to have the pleasure of meeting Dr. Youngblood, who at the last moment has been summoned over the head of old Dr. White, whom Dr. Black was so sure of meeting in the house of Mrs. Goodyear. After exchanging greetings, Dr. Youngblood says: "Pardon me, Dr. Black, I came a few minutes before the appointed time, thinking you might be here a little earlier yourself. As I am an exceedingly busy man, I must utilize every spare moment of my time." His real reason, however, for coming early is to make an examination on his own account, unhampered by the eye of Dr. Black, and to give and receive some suggestions from the family, in order more thoroughly to familiarize himself with the case, and, if possible, surprise and nonplus Dr. Black at his skill and aptness in diagnosis.

After surveying the room with a pompous air, he asks to see the observation chart, and directs his attention to the nurse rather than to the physician; but as a matter of fact he has already seen this chart on the sly, when he sent the nurse, as a pretext, to communicate some fact to the family in an inner room. He wants to know all about the temperature curve and the pulse wave, now affecting an air of superiority and measuring the sick-room with an insolent stride.

Dr. Black, while a careful observer, does not lay quite so much stress on the variations of these waves and curves. He, however, recognizes that the pulse is rapid and the temperature high; but as the alimentary tract is clear from obstruction and the head comparatively cool, he prefers to direct his attention to the heart and stomach rather than to the temperature. He tells Dr. Youngblood that temperature in a child has not such serious import as in those of more mature years; that to strengthen the heart beat and to have the stomach tolerant of food have always been his first and most important duty. "My professor at college, in whom I have the most implicit confidence," says Dr. Youngblood, "laid great stress on temperature in a child. He declared it acted first on the nerve centres; secondly on the reflexes, which he said were very impressionable and sensitive at this early period of life; and was apt to develop spasm, which so contracted the respiratory group of muscles that it interfered with the return circulation, and was sure to produce cerebral congestion—a grave complication in one suffering from any form of disease."

The gentlemen are agreed on the nature of the disease, but in prognosis and treatment stand wide apart. Dr. Black, while recognizing the gravity of the case, is not absolutely hopeless of the final result; however, since Dr. Youngblood is certain of a favorable termination if his line of treatment is adopted, there is no other course open to Dr. Black but to retire from the case, which he does. This resolution is made by Dr. Black while adjusting his overshoes in an anteroom, after hearing Dr. Youngblood, again on the sly—though spoken in a low whisper—express a desire to be alone in the case to the father of the child, as he was waiting anxiously at the door of the consultation room to hear if the physicians had any good news to convey concerning the outcome of the disease with which his child is now afflicted.

It will be granted Dr. Black's ears are not slow to hear, even if his joints are stiff and he carries a weight of seventy years on his shoulders.

The two physicians part with a cool, self-contained, and quiet reserve, but they do not part as friends—a thing not observed by members of the family, who are worried and buried in grief, and who would be almost inconsolable were it not for the rays of hope kindled in their hearts and the bright light reflected on their path by the favorable prognosis and kind words of Dr. Youngblood.

Dr. Youngblood, now alone in the case, is heroic in his treatment. He blisters, purges, applies the cold pack and ice-bags to the head; he examines the coal

tar series and gives full doses of the very latest antipyretic, also an analgesic and a cerebral sedative, for he has a fear of the reflexes. He, however, succeeds only in robbing the child of the little strength it possessed under Dr. Black's fostering care, for he hourly grows weaker. Next day Dr. Youngblood looks wise and serious; he does not wish the family to understand that he is criticising the methods of Dr. Black, who so recently had charge of the case and in whom they were wont to place such confidence; no, nothing of the kind—oh! no, indeed; but he is extremely sorry he did not have an opportunity to see the child one day earlier, just one day earlier. At present the system is wasted and exhausted, and cannot respond to his new and powerful remedies; even electricity, strychnine, or nitroglycerin is useless now. However, he will try oxygen; it will relieve the paroxysms and make his last hours tranquil and composed.

Next day all is still—only the lamentations of a distressed and sorrowing mother, who between her sobs tells a lady acquaintance who comes to offer her such consolation as is in her power: "Just think, Mrs. Green, my darling could have been saved if we had called Dr. Youngblood earlier—just one day earlier!" Earlier! just one day earlier! was wafted out upon the darkness, and the refrain was taken up by the hills and echoed through the vale—"Earlier! just one day earlier!"—on that memorable summer night when Mrs. Goodyear fell fainting into the arms of her sympathetic friend, Mrs. Green.

While the family is making preparations for the funeral, Dr. Youngblood and Dr. Black meet again. It is only a coincidence, and not expected by either gentleman. The object of each in his visit is different, as were their prognosis and treatment of the now dead child. Dr. Youngblood comes for the purpose of being seen and to advertise himself again. This occasion presents an excellent opportunity, and he is not the man to let an opportunity slip. The fact that he has been acquainted with this family only three days counts for nothing with him. He is sure of a warm reception; they will be grateful for the gallant fight and final effort he has made to save their loved one. Dr. Black comes in obedience to the human impulses that find a home in his breast and a ready outlet in his kindly nature, to offer his sympathies to the family he has known so well for twenty-five years, in this hour of their tribulation. Dr. Black withdraws, but Dr. Youngblood, who is now a conspicuous figure in the house of mourning, remains and chats with the pastor, who himself was a physician, but abandoned that profession for a holier if not a less laborious calling. A theological student is also present, who, feeling himself too much of a sinner to enter holy orders, asks advice of Dr. Youngblood and permission to be accounted as his student, and solicits the honor of calling him preceptor. The divinity student is fearful that there may not be room for another physician in the already crowded ranks of the profession, but Dr. Youngblood allays his apprehensions by assuring him that there is plenty of room at the top for the higher order of talent—a quality he is sure he possesses—and hopes it will not be long after his graduation when he may perhaps climb to the high altitude he himself occupies in his profession and in the public eye. Dr. Youngblood talks on various topics, when finally the conversation turns on the practice of medicine, and the pastor and physician engage in an animated if not learned debate about disease germs in general and micro-organisms in particular—their habits, their haunts, and their influence on the animal economy. Dr. Youngblood declares that all diseases spring from the same source or cause, namely, derangement of adjustment and co-ordination in the vital mechanism. Dr. Youngblood gives it as his opinion that at some time in the future, a period he thinks not remote, the etiology of disease will be thoroughly mastered, and the catalogue of causation from measles to cerebro-spinal meningitis be an open book; a clear bright light will then illuminate the whole domain of medicine; and he hails with acclamation the opening of this new day. The problem of the future, he says, will be, not to cure, but to prevent disease, when the old adage will have a definite if not a new meaning, that "an ounce of prevention is worth a pound of cure." He continues: "The discoveries lately made and the new remedies introduced are passing through a trying ordeal, as have all discoveries and inventions that have gone before—they are receiving, as it were, their baptism of fire; but he has no doubt they will emerge in triumph from the ordeal of flame." The microscope, the chemical equation, and the *x*-rays are leading the vanguard in this era of wonders, and pointing the way to boundless possibilities in the realm of human thought and achievements.

"Dr. Youngblood," says the clergyman, "you astonish me by your familiarity with scientific subjects. I can only say that I am overcome with the magnitude of the situation, and recognize that we are living in a grand and progressive age." After taking a full breath, the clergyman continues: "Dr. Youngblood, if I understand this new gospel, which you have with so much eloquence propounded, the various diseases are but the preponderance of one colony of parasites over another; the leucocytes, always present in the blood, must be ever on the vigil and always prepared to give battle, in order to save the body intact from the ravages of these all-devouring hordes. The leucocytes, then, are at once the scavengers and the guardians of the public health. The blood is the battlefield, and life or death the resultant of these contending forces. Did not the Holy Scripture point out and demonstrate this fact long ago, when it declared, 'The blood is the life'?"

This discourse is heard by many mourners who have come from distant parts to pay their respects to the living and to honor the dead. The pastor will be known for his learning as well as his piety, and Dr. Youngblood's fame for scholarship as well as his rare skill in his profession will be spread far and wide.

Dr. Black, who retired to an adjacent room only to console the bereaved parents, is an unwilling auditor of this ill-timed discussion. Later, on the porch, on his way home, he is approached by the divinity student, who asks the doctor for his opinion as to the relative merits of the discussion between his pastor, Rev. Mr. Mayflower, and Dr. Youngblood, his new preceptor. The old physician draws himself up to his full height and says: "Sir, this occasion is too sad and the time inopportune to answer questions that do not immediately concern the welfare of this afflicted family. I refrain, sir, from commenting on the egotism and bad taste of the gentleman who opened the discussion, or on the gentleman who closed it, for his lack of moral perception and thoughtlessness in desecrating the attributes of his sacred calling."

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Three men are conspicuous figures in a large room, where the town squire holds court, one cold winter's morning in December. There are some whisperings going around in regard to a young woman and an antemortem statement. However, the facts are not clear, and, according to some young lady friends of Dr. Youngblood, it is an outrage to associate his name in any manner with the case. These three men are Dr. Youngblood; his student, Mr. Hopewell, now Dr. Hopewell; and a young man, an accessory to the act, now the central figure in what is very likely to end in a tragedy. This young man takes stealthy but furtive

glances at the ancient squire, while his restless little eyes roam around the courtroom, always to fall when they light on a little old woman in black in a remote corner of the room. She is the mother of the dying girl. There is Dr. Mayflower, reinforced by two deacons and a trustee, a contractor—all have come to attest to Dr. Youngblood's piety and personal worth, and the utter impossibility of either this devout Christian or his talented student, Dr. Hopewell, being guilty of a crime. They have come, if necessary, to give bail in any amount to save these gentlemen the ignominy of entering a cell or spending a night in the lockup.

Dr. Youngblood in Jail. — Dr. Youngblood, in jail, is not wanting in sympathy from without. The sewing-girls from the attics leave their offerings of golden rod and wild daisies at the jailor's lodge, and the more affluent ladies of his now numerous acquaintance bring pressure in the shape of a dollar on the jailor's palm, and are thus able to present Dr. Youngblood personally with an offering of American Beauty roses; and some of his more enthusiastic lady admirers insist on pinning a chrysanthemum on his bosom; some others entwine delicate leaves of smilax in his buttonhole.

A lawyer from Philadelphia, Mr. Sharp, laughs heartily in his office while reading, when he declares the indictment is full of legal blowholes—that it is woven so clumsily and its texture is so loose that a flock of wild turkeys could fly through the apertures or interstices it presents.

It appears it occurred in this way. The district attorney's assistant, who was a physician before he read law and entered the service of the State, was not skilled in drawing up indictments for the criminal calendar. Dr. Youngblood escaped through a technicality. He pleaded, "Not guilty;" but a flaw in the indictment was the thunderbolt, and Mr. Sharp the Ajax who hurled it at the prosecution, though Deacon Primrose, when shaking Dr. Youngblood by the hand, exclaimed, "It was through interposition of Heaven!"

The Founding of a New Dispensary to Commemorate Dr. Youngblood's Escape from Jail.—Now it was said with one voice by the good people of Dr. Youngblood's acquaintance and Rev. Mr. Mayflower's congregation that Dr. Youngblood must have a justification. So they set about at once raising a fund to found another dispensary. A well-to-do old lady, an ex-president of the society of King's Daughters, said she would donate sufficient to build an amphitheatre; that it should be known as the Youngblood Operating-Room of the Free-to-All Dispensary.

Dr. Youngblood, smarting under the disgrace of his late sojourn in jail, almost refused to be comforted, and was quick to discern who were instrumental in this effort to cover him with disgrace. His heart yearned for revenge as the names of Drs. Goodman, White, and Black flitted through his brain. He would accept the honor of being surgeon-in-chief to this new charity only conditionally, and that condition was that the dispensary should be free to all, as its name implied. "Yes," he exclaimed, "as free as salvation or the air we breathe!" He said he was aware that some physicians in the town would prefer that a discrimination should be made, and those able to pay for treatment turned from the door; but such physicians only wanted to draw water to their own mills, and their designs should be frustrated by making the dispensary a "Free-to-All." As this was a free country, the dispensary should be free in fact as well as in name.

Dr. Youngblood was so determined in this resolution that he aroused some opposition among his friends, but it died away after he quoted the lines from a well-known author:

> "Come one, come all! this rock shall fly
> From its firm base as soon as I."

It was a matter of only minor importance to Dr. Youngblood when the Free-to-All Dispensary was sued for malpractice, but the suits were dismissed by Judge Youngman on the ground that the dispensary was a charitable institution and not responsible for the bungling of its surgeons.

The lawyer for the plaintiff, now a helpless cripple because Dr. Youngblood and his assistant, Dr. Hopewell, mistook a fracture at the hip-joint for rheumatism, could not agree with the learned judge: he thought every tub should sit on its own bottom, and that the dispensary should not hide its surgeons under the petticoats of charity, in order to escape an obligation and a responsibility from which a private physician would have to defend himself before a jury of his peers.

It appears that the old gentleman, now a cripple, was on a free excursion—though it was said he had money in the bank—and while promenading the deck of the excursion steamer slipped on an orange peel, and suddenly sat on his right hip. Next day, at the Free-to-All Dispensary where he was carried, Dr. Hopewell said it was a sprain; and as the old man was suffering from rheumatics, Dr. Youngblood paid no attention when the patient said he could not raise his right leg and that he had a severe pain in the region of his groin.

The physicians' incomes were gradually shrinking, as the town was constantly growing poorer and the people were flocking to the Free-to-All Memorial Dispensary. Dr. Youngblood did not mind this, for he had received a windfall from the old lady who founded the Youngblood Operating-Room, now just deceased, for his skill in treatment and fidelity in watching over her during the last hours of a well-spent life.

It may be noted the town grew so poor that another workhouse had to be built and a wing added to the jail, and the county again saddled with a load of debt, as people were hungry and homeless, sullen, and in a fighting mood. Now the privation and distress were not brought about through pestilence or famine, or any cataclysm or vicissitude of fate or fortune. They were the direct result and logical sequence of the teachings of three men in the village. These men were Rev. Jonathan Mayflower; an editor with a past named Broadcast, who led a roving life until he settled in the village and embraced religion at a street gathering of the Salvation Army; and Mr. Redflame, an anarchist, who was converted at a prayer-meeting in Dr. Mayflower's church, and who since his conversion preferred to be known as a socialist. These three men, with the able assistance of Dr. Youngblood and his Free-to-All Dispensary, were responsible for the wretchedness and squalor now prevailing and rampant in the town, by teaching false doctrines and sowing the seeds of dissension and discontent.

Mr. Redflame, though ostensibly a socialist, had a *penchant* for lurid and turgescent oratory that worked the people up to a high pitch of excitement. His last effort in the now historic lyceum was noted for its very extravagant language. He belched out defiance and hate as the crater of Vesuvius pours forth its sea of flame. He so fired the hearts of his five hundred stalwart hearers that they shouted with one voice for free rent, free clothing, and free beer. This was considered a modest request by Mr. Redflame, and was not, after all, demanding too much, since they had already free coal and free bread through the kindness and industry of Mr. Mayflower, who buttonholed and personally canvassed every member of his church for a donation for the good work. Editor Broadcast had to do with the ice and milk funds, for which he advertised liberally in his paper, artfully slipping in advertisements as editorial matter and imposing on his readers, who believed that Mr. Broadcast was as

honest as he claimed to be, and that he had given up his bad practices since his conversion at the street meeting of the army.

Dr. Youngblood took care of the dispensary, and organized free excursions; also a gymnasium with a free-soup kitchen. Mr. Redflame declared, in one of his passionate appeals to the people, who were now too lazy to work, that wealth was a curse to the country; that rich men should be hanged, their property confiscated, and the proceeds divided among the poor. The earth, he said, belonged to all, and the fulness thereof; that as the earth was our common mother, it was our common heritage too. "Earth to earth, and dust to dust," was the behest and mandate of Heaven; that all were born free and equal, was the dictum and pride of this country of his adoption. In conclusion, he said, with forceful if not accurate diction: "The constitution further declares, 'Ours shall be a government of the people, by the people, and for the people.'"

The pastor, who was presiding officer at this meeting—Mr. Broadcast and Dr. Youngblood being vice-presidents—thought Mr. Redflame a little too radical in his views, and that he went out of the way to abuse the few rich men in his church. He told Mr. Redflame that if this extravagant language was repeated it would be instrumental in driving him from his parish and from a people whom he loved. He said the few wealthy men would go where there was more safety for their person and property; besides, that he had no ambition to be the pastor of a constituency of paupers in his declining years; furthermore, he had a family to support, and their welfare was a matter of much concern to him. So he cautioned the anarchist to be more careful in his future harangues at the lyceum.

The Pastor Suffers a Reduction of Salary.—Rev. Mr. Mayflower is much troubled; he paces the floor of his study with uncertain step. He has but just returned from his vacation trip to his annual haunts, the Berkshire Hills, when a committee of the trustees of his church knock at his study door. They have departed; the salary of the beloved pastor is reduced one-half. Another and more inflammatory speech had been delivered at the lyceum by Mr. Redflame, a week before the pastor's return. It was published in the *Wide-Awake Journal*, Mr. Broadcast's paper, which the sexton, Mr. Crowsfoot, saved for the pastor's perusal. The pastor, overcome with the fatigue of his journey and the excitement of meeting the trustees, is too greatly exhausted, and requests Mr. Crowsfoot to read the speech of Mr. Redflame to him. The sexton begins: "'Let the torch be lighted, lay waste their lands——'" "Stop! stop! enough!" cries the pastor. The sexton, who is absorbed in his subject and quite deaf, does not notice Mr. Mayflower, and continues to read: "'Let loose the dogs of war! let destruction and ruin, tornado and cyclone, wipe them from the face of the earth——'" "Stop! I say, stop!" cries Rev. Mr. Mayflower, with gesture as well as voice, and in anger; "Mr. Redflame has ruined my church, bankrupted myself, and leaves my little family almost homeless. I repeat, I want no more of him—I am through with him now."

Rev. Mr. Mayflower now Conscious that Some Atonement Should be Made for his Errors.—Rev. Mr. Mayflower was full of reminiscences, recollections that wrung his heart. He now recognized his mistake, and saw with open eyes the misery it had brought on others. Around him on every side was disaster, largely the work of his own hands. "As ye sow, so shall ye reap"—and had he not, with the help of Mr. Redflame and Mr. Broadcast, with the aid and counsel of Dr. Youngblood, sowed the wind of false doctrines of social economics among his flock, and was he not now reaping the whirlwind?

The pastor made some effort to reconcile his conscience to the altered situation, and in some measure justify himself, in that it was the result of good intentions; but he felt that was only an excuse—indeed, a subterfuge—since good intentions were branded in flame on lost souls. "The way of the transgressor is hard," and "The wages of sin is death," he saw emblazoned on the sky as he opened the window to get some air, for he was growing faint; but the sign in the heavens was the gleam from a burning church, and that church his own, and the letters painted there were only the reflex of a guilty conscience.

He then and there wished to imitate his prototype of the "Scarlet Letter"—the one eager to make atonement for a personal sin; the other for social heresies that, while not so intrinsically heinous, were deplorable, far-reaching, and disastrous in their results—by going to the lyceum, and under its shadow renouncing these social heresies and making recompense for his free-dispensary folly. But his moral courage failed; he could not summon a resolution strong enough to support his legs across the floor, much less undertake the more hazardous journey to the lyceum, where he had sat a listener to the fulminations of Mr. Redflame and indorsed them by his presence.

It was whispered by Dame Rumor that Mr. Redflame might know something about the burning of the church. This the pastor refused to believe, as he had given Mr. Redflame communion that day. He continued: "Mr. Redflame led our meeting only this evening, and made a touching prayer for the conversion of the heathen and a speedy gathering together of the nations in a brotherhood of love." The pastor resented the imputation on his parishioner, Mr. Redflame's, character. He said: "Human nature is not so base;" but the fire marshal and underwriters fastened the crime on Mr. Redflame, a jury convicted him, and the judge sentenced him to imprisonment for life.

It appeared at the trial that the motive which prompted Mr. Redflame to the crime was revenge directed against the pastor, as he was beginning to look coldly and frown on his lecture projects, and on the occasion of their last meeting the pastor had told him bluntly to leave off talking and go to work—that then, perhaps, others in the village would follow his example. To this Mr. Redflame made no answer, but the color came to his face and he bit his lips.

The Rev. Mr. Mayflower Angling for a New Charge.—Rev. Mr. Mayflower now rallied his shattered nerves, and made what reparation he could in helping to build up the community he was so instrumental in tearing down. He asked it as a special favor to him if Dr. Youngblood would be more careful and discriminating in the distribution of his charity, and cut off his free-soup kitchen attached to the lyceum, hoping by that means to send the able-bodied men loafing there to do an honest day's work. He also counselled him to hold out the olive branch to the other physicians in the town, as by this means he might be able to secure their co-operation and support in bringing about the prosperity which was now so much needed. At this moment the sexton, Mr. Crowsfoot, handed the pastor a letter. It contained a request from a deacon in a distant parish that he kindly occupy the pulpit in his church the following Sabbath, as the loved pastor ministering there had been called to his higher reward. Rev. Mr. Mayflower, on the following Sunday, preached from the pulpit left vacant by the sainted Dr. Stargaze. The Sunday-school superintendent, in describing the occasion to Dr. Hopewell, Dr. Youngblood's assistant, who had severed his connection with the Free-to-All Dispensary, and had started a private hospital on his own account in the town now the scene of his old pastor's new charge, said: "He took us by storm. His preaching had depth and solidity; its manner was

sharp, direct, incisive, with the thrill to electrify, the force to convince. The day he preached was a day of Pentecost indeed, and the people went on their way rejoicing." Let us add, the pastor rejoiced too, for he had a reasonable expectation of winning a rich congregation.

The Pastor's Farewell.—At home in his pulpit the following Sabbath the preacher is serious, solemn, and reminiscent. Grief is heavy at his heart and his eyes are suffused with tears, after the sermon—a model sermon, too—which was a review of his labors in the parish during a pastorate of ten years, a labor of love, but withal one of disaster to his hearers. Its humility and pathos made tears ramble down the wrinkled faces of the deacons, and brought sobs, subdued and plaintive, from the ladies of the congregation. He told eloquently how he wrestled in prayer, how the spirit of inspiration came upon him, how he was directed to accept the call from the distant parish. The people there were crying for spiritual food, and praying for a shepherd to lead them and keep them in the way; it was in obedience to a divine mandate and the will of the Master that he should labor in another field.

A solemn stillness fell on the people gathered there, buoyed up by the strong arm of Christian resignation and sustained by the faith that was in them; they were willing to let their pastor go. He departed, with the benediction of a congregation, which he had been so instrumental in bringing to famine and the poor-house, ringing in his ears, but whose members yet were kind, to fill the more lucrative pulpit in the distant parish.

Rev. Mr. Mayflower Not so Influential with Some of His Old Congregation.—Notwithstanding the injunction of the pastor, Dr. Black refused to have anything to do with Dr. Youngblood. He thought that to have any dealings with this man was like compounding a felony; indeed, it might be just as well to say it, he regarded him as a mountebank and charlatan, one by no means an ornament to his profession. Dr. Black's sterling worth commanded respect, and he now began to be influential in the reawakened community. He invited Dr. Goodman to deliver an address before the town council, and give his views as to the course to be pursued in order to bring back the prosperity that so long was a stranger to this now famished and desolate town.

Dr. Goodman's Address on Idleness and Industry.—"After watching the course of events for some time, and being a witness of so much want and sorrow in our community, I have been convinced of the fact that charity has its limit, and beyond that limit it loses its sweet savor and gives out a rank and unwholesome odor.

"When charity is dispensed at the expense of and to the detriment of others, it is an oppression working evil in two ways: the beneficiary of the charity will grow shiftless and lazy, while the donor will ultimately become dependent himself. His misapplied charity has poisoned the wellspring of society, torn that society in twain, sowed the seeds of privation, laziness, sedition, and crime. It has made fathers drunkards, homes cheerless, and mothers weep. It has, as you see by Dr. Youngblood's experiment, created an army of idlers that have voluntarily thrown down their labor to be partners in the era of good things promised by him and our late pastor, Rev. Mr. Mayflower. When people obtain the necessaries of life for the asking, what is the use or necessity for them to labor at all? Now our factories are closed, our fertile fields lie waste, our industries are paralyzed. The men to operate these varied industries are now in free-soup kitchens, on free excursions, or hanging around the corridors of free dispensaries waiting to be cured of imaginary ailments.

"Dr. Youngblood, Mr. Broadcast, Rev. Mr. Mayflower, and the notorious Redflame labored to inaugurate the workingman's millennium. Only one, however, of these men was sincere and honest in his purpose, and even he, when the storm broke and the bottom fell out of his project, like a rodent on a sinking ship, scented disaster and ran to cover by taking shelter in the pulpit of a prosperous parish. He had no scruples in leaving his old congregation in midocean with a stormy sea, to pilot their way unaided and alone to the spiritual shore. He left on the pretext that he was called through a dream—an inspiration—to take charge of a flock which was hungering for a spiritual love with which he was abundantly supplied and which he was able to distribute and bestow on all who applied at his open door.

"The stimulus to labor is, first, hunger; second, a desire for wealth. We cannot attain to the second except we appreciate and recognize the value of the first. This will explain why we have no millionaires at the equator, and so few in the tropics: there nature is kind and lavish to her children; there fruit supplies abound without cultivation; there the people have food without labor.

"This prodigality of nature takes away the stimulus to industry—namely, hunger; the incentive is not there. Nature here is the philanthropist; and has she not brought forth and reared her legions of degenerates? She left them without the stimuli to industry, but warmed their naked flanks in the rays of a torrid sun and lulled them to sleep in the shadow of eternal spring.

"The million that the philanthropist left last year to build a dispensary and found a home for destitute men, will prove a monument to his folly, a thing to mock his memory, a scourge to flog society. It will enlist an army of beggars, and, basking in the sunshine of this bequest and a beneficiary of it, will be found the anarchist with his torch, the socialist with his jargon, and the burly tramp with his bludgeon and his beer can. The philanthropist, while appeasing their hunger, takes away their stimuli to labor; for this they will repay society by goading it to anger and then stabbing it in the back. This will be their gratitude and the monument reared to the philanthropist's memory. As surely as the square of a straight line is equal to four times the square of its half, so surely will a charitable bequest be met by a multiple of poverty and a complement of crime.

"The abuse of charity has worked more mischief and brought more misery in its wake than have pestilence and famine. It has crowded our dispensaries to the doors, filled our poorhouses with wrecks of humanity, congested our prisons, and has always been a highway to revolution and the gibbet. Without that million the lazy man might work; with it, he will not, for while it lasts his incentive to labor will disappear. After he has drank his bowl of free soup and eaten the bread of idleness, he will talk of oppression, and whisper assassination to his fellow-mendicant, and smite the hand which fed him. That hand he declares has forged the chain and locked the shackles that made him a beggar, a bondman, and a slave.

"From time immemorial the problem has presented itself, how to help the poor, and what to do to relieve their needs and raise them to be self-supporting and units of value in the social fabric. With a blind and unreasoning zeal, Rev. Mr. Mayflower labored to solve this problem; but, as you all now see, his failure was as signal and complete as was that of others who went before him.

"As you have heard, the philanthropist left a million to found a dispensary and a home for destitute men. The climax of effort was reached when he rounded this so-called charity—really, however, only

a satire on charity—a dispensary, a home, and a free lunch for lazy men. He did not trouble himself to look below the surface or investigate as to what effect his charity would have on other enterprises and industries. His carelessness in this respect would lead one to the conclusion that there was a motive for his charity. Could it be possible that he, like Dr. Youngblood, wished only to advertise himself? If alive or if now dead, had he a morbid and mortuary ambition that his name should ring through the world, and redound to the interest of his estate and the glory and advancement of his heirs and legatees? The golden rule, 'To have a just regard for the rights of others,' he ignored, or if he considered it, brushed it aside with contempt, as did Dr. Youngblood the advice of the sage who pointed him the way to honorable success the morning he started on his eventful career. The observance of this rule is the guidepost to honorable and fair dealings among civilized communities. Why did the millionaire neglect to observe this rule? Let us in charity draw the veil over his motives, and say he was blind, morally blind, and that he felt he had discharged his obligation to society in founding the dispensary and home for destitute men; that he had rejoiced in the good he had accomplished and the monument he had raised to perpetuate his memory. But his work, as a matter of fact, has only begun; before him lie a wide field and boundless possibilities. He lost his opportunity by taking the advice of Rev. Mr. Mayflower and Dr. Youngblood. In this case it was the blind leading the blind, with the usual result—that both fell into the ditch. Now, what should this rich man have done with his wealth that he threw away in founding this dispensary and home, in order to confer a lasting benefit on his less fortunate fellow-beings? He should first have acquainted himself with the significance and import of the word charity—on which one word a volume could be written; second, he should have inquired into the cause of the poverty and distress that solicited his bequest, and, by removing the cause, wiped out the effect. Here is the rock on which his project foundered; he mistook the effect for the cause—the impact for the power behind—and was as successful in treatment as was the quack who told his patient he had dropsy, and set about blistering his swollen extremities in the hope of drawing off the fluid and mitigating his sufferings.

"The medical quack and the philanthropic quack stand on precisely the same level; both treated the effect for the cause. The quack added to the misery of his patient and hastened his death; the philanthropist's bequest was a stumbling-block in the path of progress, it robbed the people of the stimulus to labor, and was a direct hindrance to the advancement of the human race. It diffused laziness, dependence, and crime on every hand, as the sun diffuses light and heat.

"In the inauguration of this era of reform, what part has the rich man to play with his million? He must make an effort to develop the moral sense and awaken a pride for industrious activity in the recipient of his charity. If the man or the woman is lazy, the philanthropist must show him or her the necessity for energy and activity; if they are prodigal and improvident, he must impress them with the advantages to be derived from temperance and self-restraint; if they are illiterate and incompetent, he must teach them the meaning and usefulness of knowledge and the good that can be accomplished by being proficient in something in consonance with their intelligence, temperament, and environments—in short, he must instruct them in the value of self-reliance, dignity, and independence; that each individual should be self-sustaining; that intemperance and selfishness are barriers to progress, and not compatible with the higher development of our race. In proportion as this simple and easily digested philosophy is disseminated among the people, will poverty die out, and with it the poor-house, the jail, the free dispensary, and the five-cent lodging-house; for then the vexed social problem will have solved itself."

Dr. Youngblood, who was in the hall, left before the conclusion of Dr. Goodman's address. It was noticed that he was disgruntled and perturbed.

A Letter from the Pastor. — Dr. White, better known in church circles as Deacon White, read a letter from the old pastor, who still viewed his former congregation with a fatherly eye from afar.

"To my Old and Beloved Flock, with Greetings:

"Dear friends of the past, whose memory is entwined with sad recollections, our parting almost broke my heart; but, as it was my mission to go, I accepted the call with composure and resignation, believing as I do that it will not be long before the kind Providence that counts the hairs of our heads and keeps us in the hollow of His hand will fill the place so unworthily occupied by me with one who will carry on the work I left undone and bring back some who have wandered from the fold, to eat the husks and to drink the wine of a physical and temporary joy, that is shortlived and perishable. Keep firm in the faith, and hold fast to that which is good.

"Yours, in the hope and reward of a kindly life and a propitious future,

"Jonathan Mayflower."

The Deacon's Confession.—The letter from the old pastor fell like a bomb, charged with spiritual fire, on this little band of worshippers, now gathered in Dr. Youngblood's Memorial Operating-Room—though Dr. Youngblood was absent, having run away from the consequences of another shady transaction. They had worshipped here since the burning of the church by the anarchist Redflame.

Deacon Bloodgood, overcome by the whirlwind of joy that the reading of the pastor's letter called forth, being a good man, thought it no disgrace to make a few remarks about a thing that hung to his skirts and flapped its ugly wings, like a black cloud, over a conscience otherwise clear and a life without blame, and began:

"Fellow-Christians and loved ones, others before me have made confession to their shortcomings in this very operating-room, made memorable by the brilliant achievements of Dr. Youngblood's scalpel and the farewell address of Rev. Mr. Mayflower, and now hallowed by the pathetic epistle just read with so much eloquence by Brother White. An obligation was enjoined on all Christians when the word was spoken, 'Confess your sins one to another.' Now I must tell you with shame and humiliation the part I played in bringing about this reign of poverty and the general hard times that have pinched you so, robbing you of the pleasure of sending your annual donation this year to the board of foreign missions for the conversion of the heathen; that compelled you to cut down your beloved pastor's salary one-half; and that still compels you to worship in this Memorial Operating-Room. My resolution to make this confession became fixed when we had to build a new wing to the hospital of which your humble Christian brother is trustee; if possible, this resolution became more fixed after hearing the address of Dr. Goodman before the town council, of which I am also a member, and the report of the committee of that council that a new jail was necessary and imperative. It was conferring an honor on me, which I do not believe I deserved, when I was made president of the board of governors of the Free-to-All Memorial Dispensary, the walls of which shelter us now.

"As president of the board of governors of the Free-to-All, being a hardheaded business man before I became governor of our town hospital and president of the Memorial, I brought all the experience of forty years' close attention to business into my new offices. I saw around me an opportunity to build up the hospital and dispensary, and to accomplish this purpose utilized every force at my command. Good doctors were standing in line at the hospital gate, hat in hand, with credentials, waiting a nod or a beck from me, that would transform them into surgeons and visiting physicians at our hospital or dispensary. One of them told me that it was the American Derby of the profession, to secure one of these prizes I had at my ready disposal. He said that, having secured this prize, his futurity was already a reality; he would be talked about, called into consultation, and lifted above the heads of his brother practitioners, who after a little while—though jealous now—would learn to respect and esteem him themselves.

"My system of transacting business was so complete and perfect in detail, and the punishment for the infraction of a bylaw so condign and swift, that insubordination was rare and never formidable at our hospital or dispensary. Our effort to discriminate between the deserving and the impostor at our hospital gate was an imposition and a sham. While we pretended to treat only the deserving and needy at our hospital and dispensary, we waved to the crowds to come on. We wished to make a show; we had a mania for increasing the list of paupers and mendicants on our dispensary ledger, just as I had the burning ambition to outsell my neighbor in the leather business in the Swamp, years ago, before I retired to private life.

"Fellow-Christians, it has been said that the evil men do lives after them. The evil I have done lives now before my eyes; I can see it in your hollow cheeks and haggard faces, in your poorly furnished homes and naked children. The abuse of charity, as Dr. Goodman so well said, encourages men to idleness and paved the way to the poorhouse. I can see it all now. To increase my misery and fill the cup of my woe, I have still a sadder recollection to relate, and I relate it with fear and trembling, lest I should be struck dead by the righteous vengeance of Heaven for this traitorous, cowardly, and perfidious act of mine.

"In a moment of weakness, Satan whispered in my ear that the well-dressed and respectable element that crowded to my dispensary should have protection; that their interests, their honor, and their presence demanded some mark of recognition from the governors of the hospital and the Free-to-All Memorial Dispensary. They did not wish to be branded as paupers or considered as dependents; they were helping the institution by their names, and giving it tone by their presence; they were willing to pay a dollar a month to me, to take the sting out of charity and give them a true bill of lading for the full voyage and a cabin passage to health and activity, while the others, less fortunate, at our dispensary door, had to take refuge in the steerage. With shame and contrition, I here confess I acceded to this dishonorable, this outrageous demand, and gave these people—these paupers—rights and privileges properly belonging to the honest private patient who consults a physician at his office, and who was at one time—before the advent of my nefarious scheme and dollar-a-month abomination—willing and eager to pay for the same. This was the unkindest cut of all, a stab in the vitals, to the men who have made the practice of medicine honorable and have elevated its standard to a scientific calling. I closed the doors to a laudable ambition in these men, namely, to make a respectable livelihood and to be factors in the community for which they labored and amid which they cast their lot.

"Yes, fellow-Christians, these honorable and competent practitioners had to close their office doors because we inveigled and allured their patients to our dollar-a-month banquet; but our charity was a charnel-house, and our banquet the banquet of death to the community, and a spot that will not wash out on this conscience of mine. True, some governors of the hospital and dispensary opposed me in my action; but, as the contest was close, my vote was affirmative and decisive.

"The practitioner fought manfully for his rights at first, but it was the battle of the many with one; it was his little office against our organized opposition. He succumbed in the unequal struggle. It is written: 'The race is not given to the swift, nor the battle to the strong.' This is demonstrated by the poverty now prevailing, and further demonstrated by the sign in the heavens seen by our late pastor, Mr. Mayflower, in the reflection of his conscience and the burning of his church. I told my brother governors at our meeting yesterday that this abomination should cease—that charity was beautiful, but masquerading in her garb was a crime that would not go unpunished. I pointed out the deplorable condition of the industries, the army of idlers in the street, and the destitution we had brought home to the legitimate practice of medicine.

"These injustices were kindled into life by our abuse of sweet charity, and fanned into flame by the dollar-a-month monstrosity and abomination. This hybrid monster, with the face of charity but the body of a misshapen and hideous demon, is sapping the lifeblood out of the community to-day. It is a stench in the nostrils of honest manhood, and, I repeat, an abomination, a crime. True, it has put a few dollars in our coffers, but it is the price of our treason and the blood of an honorable and deserving profession.

"Brother governors, we tried to accomplish an impossible feat in our effort to unite charity with manly independence. They spurned each other. Charity is lowly and vaunteth not herself. She seeks poverty in the slums and byways, and teaches it the language of independence and the lesson of stalwart manhood.

> "'She takes the filth-stained ivy
> From pauper and from slave,
> To teach the languid wires
> The sounds that manhood gave.'

"She lifts it from its lowly habitation and starts it on its journey with the force and impetus that commend it to success."

The governor continued: "While charity may associate with poverty and squalor, they will not assimilate; they have nothing in common; their relative characters and features are as different as day is from night, light from darkness, beauty from a shapeless mass of ragged rocks.

"The complement of their social equation is the monster we have conjured into life—namely, the dollar-a-month dispensary fraud, that I feel, as you all can read, branded on my forehead now. By this fraud we have inoculated charity with a virus and defiled her by its touch—the beautiful goddess we have thrown into a sewer, to be transformed by the slush into a monument to our perfidity and treason. I repeat, fellow-Christians, I cannot justify myself before you or hide behind a legal opinion of Justice Youngman. I want to bear the full burden of my shame, and as such make some atonement for my crime."

The deacon, overcome by exhaustion from the expenditure of physical energy and mental excitement that his confession had occasioned him, for he was an old man, sank into his chair, crushed, defeated, and covered with humiliation.

A hungry physician, also a member of the little congregation, was an interested listener to the deacon's confession, and with more zeal than discretion, and without the consciousness of doing an injury or injustice to any one, recited the lines:

"The desolator desolate,
The victor overthrown,
The arbiter of others' fate
Now suppliant for his own."

The good deacon, with his face buried in his hands and happily unconscious of what was transpiring around him—his thoughts turned inward on themselves—was automatically chanting:

"Rock of ages, cleft for me,
Let me hide myself in Thee."

Dr. White's Temptation.—It can be seen that from the abuse of hospital charity, and the hard times and financial stress prevailing, the honest physician was a sufferer. One of these sufferers was Dr. White, who though old had yet some vigor in him, enough to resist temptation and fight the battle for the profession in which he took such pride and of which he was glad to be accounted a member. No patients were coming to Dr. White's office, and he had few outside calls. The popular tide was running high, and it set toward the Free-to-All Memorial Dispensary; it threatened to swamp and carry the old physician in its path.

One day, at the springtide of its flow, the old physician was jostled, elbowed, and trampled on in this mad rush of the human tide to the Free-to-All Memorial Dispensary and soup-kitchen annex. This old man's little store was fast disappearing, like snow under the rays of a hot sun. Starvation stared him in the face. Just like his old pastor, Rev. Mr. Mayflower, he cared not for himself; it was for his family—they were all to him.

At midnight Dr. White was aroused from a broken slumber by another physician, whom he was rather surprised to see and at such an unusual hour, for he had only the most casual acquaintance with him, and gave this acquaintanceship the most formal acknowledgment to the physician living so near his door. This visitor was a successful quack, whose heart was touched by the woes and poverty he saw reflected in Mrs. White's face as he passed her on the street the other day. He came at midnight, as if he hoped the darkness would hide and shelter him in the commission of a dishonorable act. He came to tempt Dr. White. Dr. Dash was affluent, and the partner in business or crime of Dr. Bounce, the hustler in their symptom-blank, flimflam, and tricky advertising schemes. He had houses and lands, blooded stock, and a magnificent town residence; his business offices on the thoroughfare—for privacy would be fatal to him—were fitted up in gorgeous style. He also had a pew, but not in Rev. Mr. Mayflower's old church. He gave liberally to foreign missions, paid tribute to the political bosses to nominate a political king to reign over him and protect his interests. He was the right-hand man of the pastor, and chairman of the board of trustees of his church.

He told Dr. White that he understood his poverty and the source from which it came, that he saw a way of deliverance for him, that he would lead him into that way, and once there he could take care of himself in the journey to prosperity.

Slipping into the doctor's hand a check for $50, he requested him to get out of bed, as he wished a further interview in the parlor.

"'Come into my parlor, said the spider to the fly.'"

Dr. White's eyes blinked and snapped when on the threshold of the door. It was from the flash of the diamond displayed in the immaculate bosom, and the electric apparatus attached to the kodak of Dr. Dash. With kodak ready, he said he wanted two pictures of Dr. White, one before and one after treatment. He wanted them for the *Wide-Awake Journal* next morning. He said it was a kind of reversal of custom, as in the first snap he wished him to look just as he was, woebegone and careworn. In the second shot he was to look pleasant, as if his sufferings were over and he saw new light.

Dr. White was about to expostulate, when shut off by his visitor: "Only your consent, Dr. White, merely your consent; I do the rest. It is to say over your own signature how you were cured of a long-standing deafness and a defective sight, after all other means failed to give relief; to tell of the days of agony and nights of misery you were compelled to endure, when noises, like the roaring of many waters and sounds like the belching of a locomotive, swept like a blast-furnace through your tortured brain. It is to tell how the celebrated Professor Long was puzzled, baffled, to understand the cause or apply a remedy to your disease; to say that the famous Professor Short was equally helpless; and how both failed to mitigate your tortures or give any relief; to tell in song and story how the combined talents of your great medical lights failed and paled, like the light of a tallow candle in the blaze of the midday sun, when pitted against the skill and inimitable art of the celebrated specialists, Drs. Dash and Bounce, with offices on the Boulevard. Doctor, do not hesitate or throw away a golden opportunity. I assure you, Dr. White, the practice of medicine is a business like any other, the object of which is to make money; if it fails in this respect, it fails altogether." He told the doctor that medical etiquette did not pay rent, and that hunger could not be appeased by membership in a medical society or even by being a fellow of an academy.

He continued: "Fine feathers make fine birds, but the most beautiful and graceful of these birds—namely, the peacock, which is also known as a proud bird; in fact, symbolical of pride and vanity—if shorn of his plumage and plucked of his feathers, would make a rather poor Thanksgiving dinner. The turkey is my symbol; you can have the peacock as yours. To be sure, the turkey is not handsome, but is withal heavy and substantial, and has a fragrant odor for a hungry palate."

Continuing, he declared: "The peacock is all show and no reality, the turkey is clumsy but juicy; the one appeals to the eye, the other to the stomach. I repeat, you keep your fine bird; I am satisfied with mine. Dr. White, let me tell you, all the medical etiquette in the universe is not so potent to drive a creditor from your door as a ten-dollar bill.

"The quacks are not skilled in the amenities and folklore of your nonsensical societies; your bylaws are feeble to punish the guilty, and helpless to protect the innocent. You are held together by a rope of sand, an illusion, an *ignis fatuus*. The philosophy of your boasted societies is largely metaphorical and founded on a misconception of human nature, which any of you thirty or more years in active practice have found out to your cost.

"This is why I left the fold and took to the road as a medical pirate and brigand, where your sympathies and all your energies should have been enlisted. You were only disinterested spectators, and left me to fight the battle alone, to be crushed and defeated, while my cause was a just and holy one. Like a high-spirited and honest woman driven to the street, I was driven from the fold. Your societies talk loudly and learnedly about the public health, and your efforts to advance and elevate the public morals. When it fails to protect those of its own household, how can it hope

to be successful in a wider field? This is why, dear doctor, you cannot impress your individuality on the public mind or manners, and why you are now and always will be, till the coming of the millennium, negative and feeble in affairs of finance and state. I have further discovered that the members of your societies are interested in their individual interests, rather than in the welfare of the societies as a whole. I repeat, Dr. White, any body of men calling themselves a society in the arts and trades, so regardless of the welfare and interests of its members, could not hold together half a year. But enough on what has no interest for me. What occupies my attention now, since I left your society, is making money and watching the district attorney, by being careful not to step over the danger line into the domain of criminality; however, it is only fair to say that that functionary has given me very little trouble. He acts with regard to me as if he were under some mesmeric spell or other occult influence, or a resident or guardian of the interests of some other planet than ours.

"The reason may be this: looked at in a commercial sense and latter-day light, mine is a legitimate business, just like the grocery, the drygoods, or the furniture trade. The grocer, the drygoods man, and the furniture man cry fraud on each other. The grocer says his brother in trade adulterates his food supplies, and that his brother is a fraud and a cheat; the same cry is raised by the drygoods man and the furniture man against each other—that he is procuring money under false pretences. They lie in advertising their wares; I lie in advertising mine. It used to be that all was fair in love and war, but now business has a place on this black list of social piracy that has thrust itself through the public conscience, and choked that conscience into silence with its glamour and its gallantry. The district attorney thinks so too, since he has not to my knowledge prosecuted any of these fraudulent concerns, though like myself they are breaking the law every day in dishonest practices. I have not even heard the voice of the press, the boasted guardian of the public weal and honor, though waiting to hear that voice long. I suppose it is stifled, hushed, drowned, by the flood of advertisements these fraudulent business concerns turn into the feed trough of that press. That is the reason it is mum about my own fraudulent advertisements on diseases I have not cured and about a public I have fooled. My advertising roll of bills has a sedative influence on its bellicose and caustic pens. The press does not care a rap for you, Dr. White, or your societies, since you send no advertising grist to their mills."

Dr. White, his face already pale, grew paler. He summoned the remnant of the little force that slumbered within him, and, rising from his chair, he began:

"Dr. Dash, if your visit to me to-night was one of a single purpose—that purpose to do good without hope of reward—my pride, my manhood would rebel and cry out against being the recipient of charity from any one, much less from you, sir, coming here for the purpose of advancing your own interests, masked by the plea of benefiting a fellow-man in distress. Your proposition I scorn; it is monstrous; it outrages every manly and honorable impulse that my nature is capable of conceiving. I refuse, sir, to accede to your request, and hand back what you considered would be the price of my shame. I have been honored in peace and in war. Here are the emblems of this appreciation and honor; here the medals and tokens I have loved so long and well, which you see adorn this threadbare coat of mine, and which will go down to the grave unsullied and untarnished by any barter for lucre. They stand for worth and sturdy manhood, for an honest cause and a noble profession. Go, Dr. Dash; I refuse to be tempted. My family will be protected when I am gone. Shipwreck and starvation may come; but disgrace, never. Welcome—

"'Death, the old man's friend,
The kindest and the best.'"

The Summary of Causes Leading to the Abuse of Charity.—In the foregoing sketch a few of the leading causes for the abuse of medical charity are given; there are other causes, but, since brevity and time are precious, they will not be touched on here. However, no suffering or hardship will be entailed on account of this omission, since they are mostly auxiliary and offshoots of the original and principal grievance cited in this article by example and illustration—which method to the writer's mind is the best possible way to present a truth. By this means a fact is made more palatable, and an impression is produced far more enduring than by the old method of generalization and moralizing—reaching conclusions by comparison, deduction, and inference. The one entertains while it instructs; the other, by its monotony and infinity of detail, obscures and buries in a grave of verbose redundancy the main facts sought to be impressed.

Dr. Youngblood is the incarnation of the pernicious activity and commonplace audacity with which the medical profession is to-day honeycombed, undermined, and disgraced. The Youngbloods have made our calling the jest of the people; they have so injected the element of fakir and three-card-monte man into the current of medical thought that the honest and intelligent practitioner blushes while contemplating the future of his profession. These Youngbloods have divided, demoralized, and prostituted our profession to their own selfish ends, so that it is an easy prey for the wily hospital governor to feed on or the philosopher to base a truth or point a moral with.

Mr. Broadcast is the soul and embodiment of the unscrupulous, dishonorable editor, who will stoop to anything to further and advance his individual interests. While one sheet of his journal is devoted to editorials eulogizing fair business dealings, the other side is full of fraudulent advertisements; with one hand he smites the usurer and locks the embezzler in a cell, while with the other he receives the reward of conspiracy and cunning from his partnership with the dishonest business man, the impostor, and the quack.

The Rev. Mr. Mayflower is a type of the clergymen who are preaching from their pulpits and proclaiming from the lecture platform their sympathy with the poor, and the efforts they are making to advance the interests and better the condition of the laboring classes. These clergymen are loud in their condemnation of any scheme to improve the condition of the general practitioner, who they say has no grievance, and whose business it is night or day to answer the call of all who may apply at his doorbell, without being inquisitive as to whether he will receive a compensation for his services. These reverend gentlemen claim that the physician has no moral right to ask for a reward for his labor. "This should be left to the generosity or judgment of the patient," say these obliging gentlemen. By preaching such doctrines and emphasizing these absurd assertions in private and public, they have inflicted a hardship on the medical profession, and largely contribute to make the poor poorer and the discontented more discontent. They, more than any other cause, have helped to fill the waiting-rooms of the hospitals and dispensaries with medical paupers; and, worse yet, they put seditious words in their mouths and revolutionary ideas in their heads about the rights of the poor and the duty of the government.

The anarchist, strange to say, is largely the product of the social teachings of the Mayflower brand of clergyman, who is careful to run away from trouble him-

self and better his condition whenever an opportunity offers. He is perfectly willing to leave his old flock to shift for itself, to hope and pray as best it can.

Dr. Dash is a sample of that moral reptile known as the advertising quack. The effrontery of this man is remarkable. By organized fraud and misrepresentation he reaps his harvest of dollars and flourishes like a green bay tree, notwithstanding that the searchlight of an aroused public opinion is directed on his methods. He still reposes with a beautiful serenity in the confidence of his victims, and, like the surgeon of the Free-to-All Dispensary, hides behind the fog of legal technicalities placed on the track of justice by Mr. Sharp, his attorney.

The pernicious influence of the Youngbloods, Mayflowers, Broadcasts, Redflames, and Dashes must be destroyed before any diminution in charity abuse is possible. The combined influence of these men is the moral Saint Lawrence feeding the gulf of charity. Behind this gulf is a perverted public sentiment, fed by millionaires and some well-meaning philanthropists—as the teeming waters of the St. Lawrence are fed by the great chain of North American lakes.

The hospital governor is only a condition, a mere incident in this Niagara of charity, a sort of caretaker at the falls, so to speak. The poor, helpless man is as unable to shoot these rapids as was Dr. Goodman or the Rev. Mr. Mayflower; indeed, he must use extreme caution that he is not drawn into the vortex and swallowed in the maelstrom of the seething waters of the abyss below. He is ultimately in as much danger for his life as was old Dr. White in being swept away by the human tide that rushed through the thoroughfare to the Free-to-All Dispensary.

The hospital and its adopted child, the dispensary, will collapse, shrinking to their normal proportions, when rich men are convinced that it is not to their interest to contribute further to the maintenance of these institutions. Rich men as a rule are selfish. It is the lack of generosity and kindness in their natures, as much if not more than business ability, that contributes so largely to their success. In order to acquire their wealth, what human wrecks are strewn in their wake! what a cyclone of misery has been the companion of their triumphal march!

> "Ah! that some warning vision there,
> Some voice that might have spoken."

The millionaire treads on broken hearts, lacerated feelings, and blighted pledges—all offered as a sacrifice on the altar of mammon. While treading on the graves of his victims and in possession of the millions his soul craved for, he suddenly experiences a revolution of feeling and has a religious spasm, the reflex of a troubled conscience, which impels him to build a chapel, found a hospital, or endow a dispensary. He is as selfish in his new enterprise as he was in the accumulation of his millions, and persistently refuses to take those into his confidence who could show him how to make his bequest of the greatest good to the greatest number of human beings, and very probably, like Dr. Youngblood, wishes to advertise himself while playing the rôle of philanthropist and humanitarian.

Conclusions.—The problem of the hour, then, is to convince rich men that their interests are assailed and their future is imperilled by the countenance and aid they are giving to indiscriminate charity; that this so-called charity is a two-edged sword, and will cut both ways. This cannot be done by the gathering of a few well-meaning gentlemen at a hall on Madison Avenue, or by the protest of a State medical society at its annual meeting. However honest in purpose, they succeed only in making themselves look ridiculous and a plaything of the great public, which is looking through the fence across the way. The efforts of these gentlemen very much resemble that of the famous old lady in her heroic endeavor to hurl back and stem the rising tide with her broom, or the fisherman to drain the ocean with an oystershell. The public will say that we are interested parties in the matter, and not likely to give a disinterested opinion; that our meetings of protest are made up largely of two classes, the big fellows and the little fellows—namely, those who are able and those who are not able to make a living at practice; that the big fellows are helping the little fellows to climb the apple tree; that it is a contest where there is only a plaintiff in the suit and no action at law.

Some good has been accomplished, however, and in the right direction, by a few writers in the medical press, notably by that well-known and long-time champion of the general practitioner, Dr. George F. Shrady, of New York. The Titanic blows of this sturdy yeoman through the editorial columns of the MEDICAL RECORD, resound through the medical world; the echoes of these blows have awakened the millionaire and philanthropist to hear that their interests and their future largely depend on the manner and method with which they handle this new danger, how to control and regulate the problem of charity.

Is it any wonder, then, as the poor physicians survey the field and recognize the overwhelming odds against them—the forces with which they are to compete, the crowd outside and the many in their own ranks—that they grow despondent, and exclaim in their anguish of soul, "What must we do to be saved?"

51 CHARLTON STREET.

STOMACH DISTURBANCES CAUSED BY HERNIA OF THE LINEA ALBA IN THE EPIGASTRIUM.[1]

BY CHARLES D. AARON, M.D.,

[illegible]

INSTRUCTOR IN [illegible] IN THE DETROIT COLLEGE OF MEDICINE.

I WISH to report an interesting case that has come under my notice. It is a case of subperitoneal fatty hernia of the linea alba. The practitioner does not expect a hernia in the neighborhood of the epigastrium, for it is well known that that is quite rare. Still it is of the utmost importance to those of us who are giving especial attention to diseases of the digestive tract to bear in mind that hernia in the epigastrium does occur more often than supposed. These herniæ are obscure because usually they are small and elude detection. The case I refer to will illustrate how a small subperitoneal fatty hernia will give all the symptoms of gastric disturbance.

April 13, 1892, Mr. D——, a cigarmaker, aged forty-nine, consulted me for what he called gastric catarrh. He gave the following history: He enjoyed good health until four years before he consulted me. While eating his dinner he was suddenly taken with nausea and vomiting. Ever since he has suffered in various ways, and has given such symptoms as to lead his physician to believe he was suffering from a stomach disorder. Sometimes he feels comparatively well, and at other times his trouble is aggravated. He complains of pain in the epigastrium. When I saw him first he had a thickly coated tongue, complained of headache and loss of appetite. He had lost twenty-eight pounds in four months, and was unable to retain food in his stomach. He vomited milk and soup just as he did meat and potatoes, and suffered with constipation. The urine was normal.

Upon physical examination I found the stomach in normal position and was unable to discover any or-

[1] Read before the annual meeting of the Northern Tri-State Medical Association at Detroit, Mich., July 15 and 16, 1897.

ganic disturbance except midway between the xiphoid appendix and the umbilicus. Here in the median line, by palpation, I felt a lobulated mass, which was flattened and not larger than a small chestnut. It was slightly movable, and felt soft and boggy. My patient knew nothing of the existence of this small enlargement. I paid little attention to this protuberance, but my patient began to get weaker, and all treatment which apparently seemed rational was without results. He would vomit upon the slightest provocation, and suffer severe pain, extending to the back, after any food had entered his stomach. I concluded that the trouble was a reflex nervous disturbance, and the mass in the linea alba was the cause of it. Upon examination I could not get the typical signs of hernia—fulness on coughing, etc. Unable to find much literature on the subject, I called in Dr. T. A. McGraw, and we agreed upon a diagnosis of hernia in the linea alba.

April 21, 1892, the patient entered Harper Hospital.

April 22d, I assisted Dr. McGraw in the operation. A one-inch vertical incision was made over the protuberance, passing through skin and subcutaneous tissue. We immediately came upon the tumor, which consisted of a lobulated mass of fat. It was covered by a layer of thin connective tissue, which continued from the base of the tumor as a pedicle. On lifting the tumor a minute opening was observed in the linea alba, through which the pedicle passed. Care being taken that no part of the neck was caught in the ring, the pedicle was ligated as deep as possible. The stump retracted within the opening in the linea alba. The pedicle extended through the linea alba and a part of the peritoneum adhered to the tumor, as is usual in these cases. The ring was hardly larger than the diameter of a match. The edges were denuded and the aperture was sutured. Union took place by first intention. The mass was not larger than a flattened chestnut and was lobulated. Our diagnosis was a subperitoneal fatty hernia of the linea alba. The patient made a rapid recovery. His diet was at first fluids and gradually solids. All symptoms entirely disappeared, and he was able to resume work six weeks after the operation. This he had been unable to do for two years previously.

The patient left the hospital, March 5, 1892, fourteen days from the time of the operation. It is now five years since then, and he has had no return of his trouble.

During my stay in Berlin I had the pleasure of seeing three such cases at the Augusta Hospital Polyclinic. Dr. Leopold Kuttner, assistant to Prof. C. A. Ewald, was kind enough to demonstrate the cases to me. Since then he has reported several cases in an elaborate paper.[1] These cases had been sent to the Augusta Hospital Polyclinic by physicians as stubborn cases of gastric catarrh. They had evidently failed to make an adequate diagnosis.

There was at one time a disposition to consider every kind of dyspeptic difficulties, excluding catarrh, ulcer, and cancer, as a neurosis of the stomach. We are gradually coming to know that gastric neuroses cover a number of various symptoms, each of which upon a careful examination may have a respectively different cause. Still we must confess that at times it is difficult to differentiate between a functional and organic disease, with regard to stomach affections.

Lindner,[2] in an exhaustive work on abdominal hernia, points out the fact that patients often complain of gastric disturbances, undefined pains, etc., while upon more careful examination small herniæ are found to be present. At times these herniæ are hardly larger than a pea. If careful palpation is omitted, such patients are usually treated for gastric catarrh, intestinal catarrh, etc., and, to the surprise of the physician and patient, all means apparently rational are without results, until a cautious and practical examination recognizes the cause to be a hernia of the linea alba. Lothrop[3] says that, owing to the great density of the linea alba, the rupture in hernia epigastrica generally starts to one side of the median line. When once there is a small rent in the fascia, the abdominal pressure forces a small portion of the pliable subperitoneal fat through the slit, both of which slowly enlarge. Later a portion of the peritoneum is dragged after the fat, and thus we have the beginning of the hernial sac, the outer surface of which may be covered with a layer of fat. He says that when once this peritoneal pouch has been formed, the entrance of omentum or gut is easily understood.

Statistics show that hernia epigastrica is more prevalent in men than in women. At one time it was supposed that all cases of hernia in this region contained a part of the stomach. This we know now not to be true. They may contain subperitoneal fat, peritoneum, omentum, large intestine, small intestine, all together or any one of these singly. At times it is impossible to ascertain whether the omentum is in the sac or not, but when the hernia is of any considerable size the omentum is usually present. Litten has given us a method by which we can differentiate the subperitoneal lipoma from hernia containing omentum, etc. He places his hand over the hernia, telling the patient to cough at the same time. If the sac contains omentum and intestine, we get the impression as if water were being squirted against the hand or shot thrown against it; if not, he decides that there is a subperitoneal fatty hernia.

Hernia of the linea alba occurs usually in the upper part of the abdomen. It is found mainly between the tip of the xiphoid appendix and the umbilicus. Rarely do we see these herniæ below the navel. Above I said that the male sex seems to suffer more frequently with these herniæ than the female. I believe that the cause of this lies in the fact that hernia epigastrica has often been mistaken for hernia ventralis; this led to the notion that it occurs in women more often than in men. The size and form of these herniæ are variable, and range from those of a bean to those of an egg. The form depends on the size—the small ones are usually round, while larger ones hang down like a bag.

The symptoms of fat and intestinal hernia may for a long time be latent, and such abnormalities may often be found without symptoms. Symptoms may manifest themselves suddenly. Pain may show itself in paroxysms, after the taking of food, coughing, etc., and may encircle the body and run down the legs. Patients complain of pain on bending, and vomiting is a common occurrence. Pains seem to be greater after taking solid foods than after a fluid diet. There are several varieties of typical symptoms; loss of appetite, nausea, flatulence, constipation may occur in light cases. Along with these symptoms which point to disease of the digestive organs, the disease may assume the form which resembles hysteria, neurasthenia, and melancholia.

Most convincing in the diagnosis of hernia epigastrica is the evidence of a tumor by palpation, which is less difficult the larger the protuberance. Important is the sensitiveness to pressure. This point is diagnostically valuable if the hernia is small. The chemical and microscopical analysis of the stomach contents usually shows that gastric functions are normal.

[1] L. Kuttner: "Ueber Verlagerungen [illegible] durch verschiedene Bruchformen, besonders durch Hernien der Linea alba. Mittheilungen aus den Grenzgebieten der Medicin und der Chirurgie." Erster Band, 1896.

[2] Lindner, Berliner Klinik, [illegible]

[3] Lothrop: The Boston Medical and Surgical Journal, March 4, 1897, p. 201.

The symptoms of true intestinal hernia of the epigastrium resemble those of subperitoneal lipoma so much that a complete distinction between them is at times difficult to make. However that may be, from the viewpoint of the practitioner this differentiation is of no material importance, since operative measures are equally necessary in both cases.

THE DIAGNOSIS OF CHOREA IN ADULTS.

By W. MOSER, M.D.,

THAT chorea is not infrequently seen in childhood is universally conceded. In adults, however, it has been hitherto regarded as comparatively rare. Recently Krafft-Ebing informs us that chorea in adults is not so infrequent as is generally believed, and that it has in them a different significance than in children. In extreme old age it is certainly not a common disease. I have seen three cases of chorea in adults since the publication of Krafft-Ebing's article, and this I do not regard as a mere coincidence, but rather as confirmatory evidence that the disease is not so rare in adults. It may be questioned whether in adults we are dealing with the same disease as occurs in children. Choreiform movements in adults may be a symptom of organic cerebral disease, as in prehemiplegic or posthemiplegic chorea (Weir Mitchell, Charcot). Choreiform movements may occur during pregnancy. They are rare, however, and the high mortality leads me to believe that we are confounding organic cerebral lesions with true chorea or choreiform movements as we see them in children.

Chorea proper usually gives a favorable termination, although I have seen two fatal cases in children. No autopsy was made. Chorea may be associated with hysteria, as in the electrical or rhythmical chorea of French writers, and there are also the choreiform movements occurring in alcoholic subjects (alcoholic chorea). These cases are not properly chorea, nor are they influenced, as is the large majority of cases of true chorea, by the administration of arsenic. The form of the disease known as Huntington's chorea, while it has features in common with chorea proper, still has some important differences. It is seldom seen before middle life. It occurs more frequently in males than in females, develops gradually, and late in the disease the mind becomes affected. It does not improve under arsenical treatment. Choreiform movements may be local, *i.e.*, confined to one member, as an arm, and if they do not soon yield to the administration of arsenic it is to be feared that they may be the precursor of cerebral hemorrhage. When choreiform movements follow a cerebral hemorrhage, they are known as postparalytic chorea. The symptom known as athetosis (Hammond) is a form of local chorea, and signifies organic brain lesion, usually cerebral hemorrhage or sclerosis, and, as Wood truly says, it is "only one of an innumerable variety of posthemiplegic spasms, and is never exactly the same in two cases." The condition known as hemiataxia "may be considered simply as a very mild form of postparalytic chorea" (Wood). In reviewing the different forms of chorea just mentioned, it becomes apparent that we cannot always be dealing with a disease *per se*, or a disease identical with the functional chorea or chorea minor of children. But it is the chorea minor of adults which forms the subject of this article, and like the disease in childhood it frequently presents the following peculiarities:

1. Great emotional disturbance, such as fright, acts as a cause, and did so in one of the three cases mentioned, that of a young lady of nineteen years.

2. Its association with rheumatism or a rheumatic history. In one of my cases a lady, aged thirty-two years, gives a rheumatic history.

3. Its association with endocardial lesions.

4. Last, but not least, it is usually improved by the administration of arsenic, while choreiform movements of organic cerebral origin are not. Nor is hysterical chorea improved under arsenic. The same might be said of paramyoclonus multiplex, with which the disease in question might be confounded.

I regard arsenic in chorea minor as a specific, like quinine in malaria or mercury in syphilis. Hence in a given case of chorea, especially if it be localized, as in an arm, and no improvement takes place, there arises a suspicion in my mind that it depends upon serious cerebral lesion and may possibly be the precursor of cerebral hemorrhage.

FORWARD DISLOCATION OF THE FOREARM.

By HENRY D. FULTON, M.D.,

THE forward dislocation of both bones of the forearm at the elbow is of such infrequent occurrence that the following report of such a case may be of interest. The case presented two points of special interest: first, it was unattended by fracture of the olecranon, and secondly, the displacement occurred when the forearm was in a position of complete extension. The case was seen in consultation with Dr. F. G. Gardiner of this city.

The subject was a man of middle age, muscular in build, and at the time of the accident intoxicated to a moderate degree. The history which he gave, and which was corroborated by a friend with him at the time, was that while he was about to step from a freight car, and while still holding securely to the iron support at the end of the car, used by trainmen in getting on or alighting from a car, the step turned, throwing his foot off, the entire weight of his body being for an instant sustained by one arm, when the luxation occurred at the elbow. As above stated, there was no fracture of the olecranon, which has complicated six of the twenty cases of this dislocation which have so far been reported ("American Text-book of Surgery," page 439). The end of the humerus formed a large prominence posteriorly, causing a marked and sufficiently characteristic deformity. The radius and ulna were completely displaced upward upon the anterior surface of the humerus. Efforts to effect reduction without anæsthesia were unsuccessful. After the patient was thoroughly anæsthetized the parts were restored by our combined efforts to their natural relation. The reduction was somewhat difficult and was obtained by making extension by pulling on the hand and wrist while the forearm was maintained in a flexed position at right angles with the elbow.

Hamilton states, in his work on "Fractures and Dislocations," that Sir Astley Cooper and others denied that this dislocation could occur without fracture of the olecranon, but that the possibility of its occurrence is now well established. The last edition of Gross' "Surgery" mentions that there have been ten instances recorded of this dislocation without fracture of the olecranon, and later works cite fourteen cases so far authenticated. In previous cases of this rare dislocation which have been reported, the mode of production has invariably been stated to have been some force or a blow on the olecranon process of the ulna when the forearm was in a flexed position. The history of this case is perfectly clear on the point that the displacement occurred when the forearm was in extension.

Progress of Medical Science.

The Treatment of Trifacial Neuralgia by Ligation of the Common Carotid Artery.—From a survey of the literature, together with experimental observations upon dogs, Ricketts (*Journal of the American Medical Association*, October 16, 1897, p. 772) concludes that ligation of the common carotid artery, in the absence of pathologic conditions, is attended by but little danger. It is safer, more certain, and attended with fewer serious consequences than any of the intracranial operations for the relief of trifacial neuralgia. The cause of this condition seems to be either congestion or anæmia; when congestion, ligation is the more certain to bring relief. The close proximity of the ganglion to the bone upon which it rests and the weight of the brain upon it, together with localized meningitis, seem to explain in some degree the occurrence of anæmia and congestion of the ganglion. The cellular structure of the ganglion is not changed by ligation of the carotid artery, so that no such alteration can be assigned as the cause of relief from pain. As the size of the blood-vessels on the side ligated does not seem to be diminished at the end of eight weeks, the cause of relief lies evidently in the fact that the blood pressure is much lessened, inasmuch as lowering of arterial tension in any congested area affords relief. However uncertain the cause of the pain or of its relief, ligation of the common carotid artery must be recognized as an established operation in the treatment of trifacial neuralgia.

Ichthyol in Variola.—Dr. Kolbassenko (*Le Scalpel*, October 3, 1897) reports that he has employed ichthyol in eighteen cases of variola, only two of which were fatal; these two cases were in a very serious condition when he undertook the treatment. From the time of appearance of the variola papules to the disappearance of the pustules, the following pomade is to be applied three times daily over the entire surface of the body: ichthyol, 10; oil of sweet almonds, 60; lanolin, 20. For economy in hospital practice vaseline may be substituted for oil of sweet almonds. During the stage of the prodromic fever until the appearance of the papule, *i.e.*, from the time variola is suspected, the author applies all over the body a liniment containing equal parts of essence of eucalyptus, of ether, and of lanolin. This treatment has the advantage of suppressing, so to speak, the itching in the state of eruption; of diminishing fever in the state of suppuration (the temperature will not rise above 39.5° C.); of diminishing the suppuration itself, and of shortening by one-half the desquamative stage.

The Virulence of the Bacilli of Loeffler in Connection with the Clinical Forms of Diphtheritic Angina.—Dr. G. H. Lemoine writes, in *Le Bull. Méd.*, No. 51, June, 1897, that in thirty-seven cases of pseudomembranous angina with the bacilli of Loeffler, the bacilli extracted from the false membrane were found pathogenic. Twenty-nine of these anginas had the clinical features of diphtheria; on the other hand, the remaining four were benign and the bacilli were devoid of virulence. In the cases in which the bacilli were virulent, long and moderate forms were found, except in four cases, in which the short form existed and the bacilli were of attenuated virulence. One can say that generally there is an agreement between the results of bacteriological and those of clinical examination as to the nature of diphtheritic angina. It is the same if one wishes to base the gravity of the affection in man on the bacteriological examination, since animals are chosen that are excessively sensitive to the bacilli of Loeffler. In three serious cases of true diphtheria the Loeffler bacilli showed themselves attenuated, but bacteriological study shows considerable virulence of the coli bacilli and the streptococcus. The greater or less resistance of the organism ought to be taken into account. In practice one cannot rely exclusively on bacteriology to yield the diagnosis of diphtheritic angina. The exclusive presence of the bacilli in the short form ought to lead us to reserve our decision. The long and medium bacilli appear to be characteristic of diphtheria. But in every case it is necessary to take into account the number of elements found; not only the number of colonies developed on the Semon's tube, but also the quantity of bacilli entering into the constitution of the false membrane. An examination of the false membrane, detached with forceps and washed in sterilized water, has given conclusive results in cases reported by the author; and in a patient who died of strepto-diphtheria, he was also able to affirm the association of the streptococcus. The clinic remains at the foundation of the diagnosis of diphtheritic angina; it alone indicates the time of intervention; bacteriology will indicate the manner of intervention.

Acetonuria, Diacetonuria, and Butyric Acid in the Gastro-Intestinal Troubles of Infants and Young Children.—Dr. P. Vergely (*Archives Cliniques de Bordeaux*, September, 1897) draws the following conclusions from his study of this subject: 1. The presence of acetone, diacetic acid, and oxybutyric acid in the urine of infants affected with digestive troubles is quite frequent. 2. These digestive troubles have particular physiognomy due to the formation of these substances in the digestive tract. 3. The presence of oxybutyric acid, of diacetic acid, and of acetone in young subjects, when the kidneys, the liver, the lungs, and the nervous system are free from serious lesions, gives a favorable prognosis. 4. It is possible that oxybutyric acid, diacetic acid, and acetone are formed in the digestive tract by the action of micro-organisms or of albuminoids and sugars of the alimentary mass; that with these harmless materials introduced into the blood with albuminoids and with fat by the fact of autophagy may be the point of departure for the formation of acetonuric products. 5. The meat diet ought to be proscribed and carbohydrates ought to furnish the nourishment during the acute period. One should have recourse to different evacuants, purgatives, and emetics, and these should be followed with alkalines, glycerin, hypophosphites, and soda—at least in non-diabetic subjects.

Spleno-Pneumonia in Typhoid Fever.—Drs. Auche and Carrière, in the *Archives Cliniques de Bordeaux*, September, 1897, draw the following conclusions from their article on the above subject: 1. Spleno-pneumonia ought to be classed among the number of complications possible in typhoid fever; but it is very rare, two cases only having been reported up to the present time. 2. This complication comes at an advanced period of dothinenteritis. Its first symptoms have been noticed on the seventeenth or eighteenth day after the beginning of the fever in Dr. Bouicli's case; during the convalescence from a slight relapse in the writers' personal observation. Its progress may be rapid and its termination speedily fatal, or it may follow a slow evolution and present the ordinary prognostication of the disease of Grancher. 4. Its anatomical substratum consists in a pulmonary congestion, as shown in the macroscopical and microscopical examination of Bouicli's case. 5. As to the pathology, in the authors' case it was as obscure as it is in such instances generally. "It seems from the result of our studies that the bacilli of Eberth ought not to be incriminated and regarded as the direct cause of this complication. It is

necessary to look for the pathological element in the white staphylococci, which we have cultivated. Their feeble degree of virulence, their existence in a state of purity in our best cultures, make us believe this. Staphylococci are so widely scattered, one being able to find them particularly in the surface of the skin even after the strictest antiseptic precautions, that we cannot feel justified in implicating them."

Experiments with Koch's New Tuberculin.—In a review of the recent work with this remedy, Maere has reported (*Le Scalpel*, October 3, 1897) seven cases of lupus treated by injections of the new tuberculin. Doutrelepont (*Deutsche med. Woch.*) has used it in fifteen cases of lupus, the greater part of which presented tuberculous ganglia. He considers the new tuberculin superior to the old, and is of the opinion, as far as he can judge at present, that it constitutes a valuable therapeutical agent. He has been struck, as has also M. Bussenius, with the fact that its action varies with the length of time that it has been bottled. It seems imprudent to him to follow the directions of Koch for increasing the dosage. The amount must be increased more slowly if fever is to be avoided; such fever may be only temporary, but it affects the general state of the patient. These fevers have caused the patient to lose in weight, while generally there is an increase in weight during treatment. Locally the ulcers of lupus are rapidly cicatricized, the projecting parts do not give way, the nodules are replaced by cicatricial tissue. The ganglia have diminished in volume, but some suppurate and have to be incised. Baudach reports having made two hundred and eighty-five injections in twenty patients. He has not observed a single abscess, though De la Camp and Rumpf, of Hamburg, say they have often observed at the point of injection painful infiltrations, yielding to treatment slowly. Five of Baudach's patients have followed the treatment to the end; this has required from sixty-four to seventy days. One patient withdrew from treatment; thirteen others are still under treatment. The injections seem to give good results. They sufficed in one case to close a rectal fistula. This treatment should not interfere with hygienic measures and an outdoor life. Spengler, the former assistant of Koch, is a firm believer in the new product, and declares that it causes less reaction than the old; the cough diminishes under its influence, as well as expectoration. Ulcerations of the larynx heal more rapidly than when touched with lactic acid. In one case of mixed infection with fever it was harmful and had to be discontinued. Splengler is very careful in applying this treatment to patients, using it only with tuberculous patients whose temperature does not exceed 37.5° C., or a temperature under the tongue of 37.2° C. It is necessary that expectoration should show the absence of all secondary infection; such infection may be possible even in the absence of fever. He makes the injections in the posterior side of the forearm. When the doses are raised from five to twenty milligrams the injections are no longer made every two days, but at intervals of from five to eight days, in order to avoid the accumulation of the tuberculous toxins in the system. From the outset it secures against attacks of fever. He advises very sensitive patients to replace the injections by rubbings with the remedy. On the other side, Jez (*Wiener med. Woch.*), after treating six patients, contests all immunizing and curative power of the tuberculin. He notes violent attacks of fever, aggravation of all symptoms, an increase of the râles and of the number of bacilli in the sputum. R. Muller opposes the use of tuberculin in case there are tuberculous complications of the ear. One woman, who had lupus and tuberculous otitis of the left ear, had during injections an attack of miliary tuberculosis in the right ear. Two English clinicians report, in the *British Medical Journal*, that they have treated six cases of lupus by the new method, and confirm the assertions of Koch as to the local action of the remedy. They note a diminution of congestion in the parts surrounding the lupus; the development of a depression in the centre of the nodule, with consecutive desquamation; the healing of the ulcerated surface; the gradual disappearance of the œdema of the lips, ears, etc. In two cases the lupus nodules have disappeared; in two other cases the nodules shrivelled up. In a particularly tenacious case the process was partially checked from the beginning of treatment. It is only at the time that large doses have been injected that marked febrile disturbances have been observed, with turgescence and inflammation of the local lesion, but these attacks have quickly yielded. Without committing themselves on the question of a possible cure, these authorities believe that they can recommend the method, at least in cases of common lupus when the general condition is still good. It is interesting, *à propos* of the widely differing results that tuberculin treatment has given, to mention the information collected by Dr. Rembold, of Stuttgart. He treated, from 1890 to 1891, with the old tuberculin, 82 cases. After six years he has attempted to ascertain what has become of these patients, but has been able to trace only 70. Of these 70, 27 only had a mixed infection, the importance of which was then ignored. They are all dead (23 died the first year, 2 the second, and 2 the third). These figures show that patients belonging to this category cannot hope for much from tuberculin. The remaining 43 are divided into three groups. Serious cases, 12; 10 died, 2 better and living. Moderately severe cases, 15; 7 died, 8 living and better. Mild cases, 16; 1 died, 3 living and better, 12 cured. Out of the 43 cases, 18 dead, 12 better, and 13 cured.

Treatment of Wounds by the Aseptic Cage.—To avoid the drawbacks of the present methods of dressing in extensive burns or granulating surface wounds generally, Dr. J. R. Benson has for some time employed a method of treatment which consists in applying no dressing of any kind to the wound, but leaving it exposed to the air under a kind of cage covered with dry dressing. This cage may be applied with ease to any part of the body. Dr. Benson proceeds in this manner: A piece of tin of sufficient thickness is cut so as to form a splint for the part to rest on, with a number of long processes projecting at the sides. These processes are bent over the wound, leaving a space between them and the latter, forming a cage. The cage is attached by strapping above and below the wound, and the whole is covered with a dry aseptic towel. In large body wounds ordinary wire cradles will answer the purpose; if the wound is small, two pieces of glass tubing may be strapped to the skin and gauze stretched over them. The gauze and towel are removed from time to time, and the wound is washed with a weak aseptic lotion. In cases of skin grafting Dr. Benson covers the grafts with protective and pressure is applied in the ordinary way. About six hours later the wound is undressed and the cage applied. Care should be taken not to remove the protective too soon and not to let it remain too long. In the former case serum is poured out between the wound and the grafts, preventing them from adhering; while in the latter case the transplanted grafts become adherent to the protective and may be dragged off with it. The wound is douched once or twice a day with a 1 to 2,000 mercuric-chloride solution. Skin grafting in this manner becomes a fairly easy operation, the results being certain and invariably successful.—*Medical Week.*

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THE CONDITIONS OF MODERN NAVAL WARFARE.

IN the late war between China and Japan, naval warfare on a large scale and under modern conditions was for the first time fairly exemplified. Without doubt, if the Japanese had met foemen more worthy of their steel, the lesson taught from a medical and surgical point of view would have been even more instructive. However, quite enough facts have been gathered to demonstrate plainly that a complete revolution has been effected in the methods of naval warfare. Not only has it been shown, as might have been anticipated from the nature of the new conditions, that the wounds received were of a more fearful and generally of a different character, but it also has been clearly shown that the shock to the nervous system from the noise and vibration was terrible—in some instances, indeed, fatal. Dr. S. Suzuki, fleet surgeon in the imperial Japanese navy, read before the International Congress at Moscow a paper treating of the wounded in naval battles between Japan and China, together with some notes on the sanitary conditions of the navy during the war. This paper has just been published in pamphlet form. Many interesting details are given. The principal seat of injuries appears to have been the head, while the hurts causing the largest number of deaths were those affecting larger parts of the body. This was a natural result, because in the majority of these cases at least one-third of the body was burned and in some wholly destroyed. It is pointed out that in sea fights most of the wounds are in the head, and in land fights in both extremities. The explanation is that in land fights soldiers as a rule are injured only by shells and bullets, whereas in sea battles all materials around the combatants, as ship planks and rigging, etc., being blown to pieces by the bursting of shells, increase the causes of injury. The antiseptic treatment, which was of course pursued, seems to have been attended with most satisfactory results. No infectious diseases of wounds occurred, with the exception of one fatal case of erysipelas. There was one case of burns leaving remarkable keloid scars. The sanitary condition of the Japanese navy was throughout the war excellent. Venereal disease and its sequels supplied 37.69 per cent. of the total number of cases of disease. Diseases of the respiratory system numbered 9.01 per cent.; diseases of the digestive system, 10.09 per cent.; and skin diseases, 8.91 per cent. There were 167 cases of malarial fever, 4.79 per cent. of which were fatal. But 3 cases of cholera occurred in the Japanese navy. Of the 43 cases of kak'ke, 3 were fatal, the ratio of cases per 100 of force being 0.21. Of the total number of persons dying at sea during the war, 150 were killed in action and 177 died of disease.

TYPHOID FEVER IN RELATION TO WATER.

IT is somewhat of a coincidence that Dr. Hart's summary report of typhoid-fever outbreaks in Great Britain should have been published at the time when one of the most widespread and virulent epidemics of that disease which has ever occurred in England was raging at Maidstone. It is now some sixteen years ago since any report on water-borne typhoid was made in Great Britain. The subject matter of that report was also collected and published by Dr. Hart. In the present summary the question of typhoid fever in relation to water is treated in all its aspects, and many details are given of epidemics in all parts of the United Kingdom. Referring to the change that has come over the minds of the people in regard to the dangers lurking in water, the author says: "The time is not long since, however, in which much scepticism existed in this country as to the bad effect on health of even considerable amounts of organic impurity; but in the interval the theory previously held by the majority of medical sanitarians has received the added weight of exact experimental research and proof. It no longer remains a mere theory, but is now an accepted fact, the remaining difficulty being to make people see that the existence of disease-provoking properties in their neighborhood in relation to their drinking-water is such as needs removal, when such removal entails expenditure of money." These words apply with as much force to the people of America as to those of England.

Dr. Hart is in accord with the majority of experts in trusting to filtration as the most efficient method of purifying water, but he is not in accord with the modes of filtering in general use in Great Britain. On this subject he says: "In the matter of filtration I am much afraid we come very far short of that point of perfection to which it were well that we should attain. The theory now advanced concerning the filtering of drinking-water, which eats at the very heart of our preconceived notions as to the treatment to which our filter beds should be subjected, has also brought with it the statement of the only position which it is safe to adopt, if we are to be free from the danger of recurring outbreaks of typhoid fever by reason of our water supply becoming polluted in a manner not to be rendered harmless by our prevailing methods of filtration. To such of my readers as have not studied the paper of Prof. R. Koch on 'Water Filtration and Cholera,' I would say, do so; and I would further lay stress on the rules which are therein laid down for the frequent and regular bacteriological examination of water from each separate filtering-basin and before the water has

been allowed to pass into the general storage reservoir, as also to the rule as to the construction of the filter beds in such manner that improperly filtered water can be at once removed, not being allowed to mix with the other water to be delivered to the distributing mains."

The pamphlet throughout is well worth a study by those interested in public hygiene.

COMPARATIVE POSITION OF THE ORDINARY GENERAL PRACTITIONER HERE AND IN ENGLAND.

Competition, associated with other causes, has for some time past pressed very heavily upon medical men in this country. Their average income is smaller and their future chances are not nearly so bright as they were but a few years ago. The reduction in the earnings of doctors is not confined to the United States, but is a worldwide evil. These remarks apply to the rank and file of the medical profession only, and not to the specialists who in every land may be said to form a separate class. In Great Britain, indeed, the position of the general practitioner has become so precarious that an absolute dread as to the ultimate result is pervading its ranks, and remedies are being suggested and sought for on all sides. Thus from a contemplation of the state of affairs in the old world, the doctors here may extract some grains of comfort. It is always consoling to the ordinary individual to know that there are others in a worse plight than himself. In the first place, the expense of a medical education in Great Britain averages more than in America. To obtain a degree or qualification in any medical school in England, Scotland, or Ireland, a course of study covering a period of at least five years is compulsory and entails an expenditure of a no less sum than $3,000. *The Lancet* and *British Medical Journal* put the cost at a much higher figure. When, after these years of work and anxiety and after spending this amount of money, the student succeeds in obtaining his license to practise, what are his prospects? If he possesses money, all well and good. At any rate he can make a fair start, but if he has no means, what then? At the outset he may be fortunate enough to earn an income of from $250 to $400 a year as an indoor assistant to a practitioner; as a ship's surgeon he may be paid as much as $40 a month; a parish appointment may afford him perhaps $250 yearly; or, lastly, if he will consent to pocket his pride and lose much of his self-respect, he may open in the poor suburbs of London or in the slums of one or other of the large towns, what the inhabitants of these districts briefly term the doctor's shop, and there retail medicine and advice for twelve cents and pay a visit for twenty-four cents. Again, take the case of a young man in Great Britain, who either through interest or the possession of capital is able to commence life as a general practitioner under more favorable auspices, and compare his chances with those of the beginner here. It is stated in the *British Medical Journal* on well-informed authority that the average income of a doctor in Great Britain does not exceed $1,000, so it may be taken for granted that the average yearly earnings of those starting practice is very considerably less than this sum. On equally authentic authority it is asserted that the average income of a medical man here after about five years' practice varies from $800 to $1,500, and that the income of a practitioner of twenty years' standing can be estimated at not less than $2,000. But this is not all the advantage the doctors on this side possess. It is when we review the fees in detail that the great difference in the pecuniary position of medical men here and in that of their brother practitioners in England is most clearly appreciated. Incomes in this country may be estimated at nearly double that on the other side, while fees average nearly four times as much. Reference has already been made to some of the fees in the poorer districts of the large towns in England. It may be added that in the gricultural parts of the country they are not much higher, besides being more difficult to collect. Here no self-respecting doctor will take a fee of under half a dollar for an office visit, or less than a dollar for an outside visit. For midwifery he will expect at least $15 (the average in Great Britain is about $5). In England a doctor has to do more than twice the amount of work in order to earn the same income. Finally there can be no doubt that the ordinary working member of the medical profession in this country is in a comparatively better position, in addition to having a brighter outlook than one of the same class in England. Into the question of causes in both countries there is no need to enter.

WHAT THE "MEDICAL RECORD" DOES.

The *Buffalo Medical Journal*, in an editorial in its issue of October last, referring to the late Moscow congress, says: "The Medical Record has published a full cabled synopsis of the proceedings, which is a marked instance of journalistic enterprise as well as lavish expenditure."

So far as we know this is the only reference which has been made in any American medical journal to what has been the most difficult and expensive attempt on our part to supply our readers with the news of the day, *pari passu* with its occurrence.

Remarkable as is the occasion, it is perhaps not to be wondered at, since any such reference would only go to show the lack of the same enterprise and expenditure on the part of any metropolitan journal so noticing it. We refer to it here simply to impress upon our readers the fact that the Medical Record never spares expense in providing material and news which the wide-awake members of the medical profession should have to keep themselves in the front rank of scientific progress. Its corps of regular correspondents all over the world is, unquestionably we presume, the largest and most complete of any. We think it will hardly be considered egotism for us to say that it is the one journal which is indispensable to all who

desire to be informed promptly of the progress of medical science and of medical news. While we make this claim for the MEDICAL RECORD, we must reiterate what we have repeatedly said in these columns before—that no medical man who can afford it should neglect also to subscribe for and do what he can to support and encourage his local medical journal. With that and the MEDICAL RECORD coming regularly to his table, he could be no better equipped if he subscribed to a dozen other journals, so far as periodical literature pertaining to his profession is concerned.

A SIGN OF PROGRESS IN AMERICAN PSYCHIATRY.

THE recent appointment of William Krohn, Ph.D., a psychologist, to a position on the staff of the Eastern Illinois Hospital for the Insane, is of sufficient importance to deserve more than passing notice. Time was, and that not far removed, when the appointment of a professional psychologist, not a physician, to a salaried position in an insane asylum would have been looked upon as an unwarrantable procedure, an unjustifiable expenditure of public funds, and an encroachment upon the rights of the physician. Happily neither physicians nor the laity take such a biassed view to-day. It may confidently be predicted that the advent of the psychologist to the asylum will be followed in time by a better understanding of morbid mental processes. Moreover, the benefit that should result from the co-operation and intelligent collusion of the physician and psychologist will be reaped not alone by the participants, but by the patient, for it has already been shown that occasionally the outbreak of an attack of insanity is heralded by phenomena that can be interpreted and given their proper significance only through psychological tests. The possibility of studying the association of mental conditions with different pathological states, and the genesis of the former as indicative and dependent upon the latter, may eventually suggest to physicians some means for the alleviation of the conditions thus heralded before they have progressed to a stage that makes recovery impossible. Naturally such study can be made by the physician if he has received training in the theory and practical applications of psychology, but unfortunately such training is uncommon. In some countries of Europe, particularly in Germany, a few psychiatrists have had adequate preliminary training in psychology, and this training has been reflected in the character and worth of their real contributions to psychiatry. Such work has been done, for example, by Krapelin, the director of the Psychiatry Clinic in Heidelberg, a pupil of Wundt; by Trüper, of Jena, also a pupil of the same master; while in our own country the promising work that has been begun by Hoch, of the McLean Asylum, and Meyer, of the Worcester Asylum, both young men trained in psychology as well as in medicine, is worthy of mention. We do not, of course, contend that it is necessary to be a professed psychologist before undertaking the work of a psychiater, for we are deeply cognizant of the fact that the latter may evolute into the best type of the former. In support of the statement we may cite the brilliant work that has been done in psychology by Ziehen, of Jena, who represents the psychiatrist in psychology: but as a rule it will be found that better results may be expected if the training in psychology follows the training in medicine, than *vice versa*.

One cannot be cognizant of current opinion among medical men, particularly among those who are working on the problem of disordered mental processes, without being strongly impressed with the emphasis that is being placed on the importance of bearing general psychological facts and principles upon the diagnosis and treatment of diseased states of the mind. Despite this recognition on the part of physicians, the extension of psychology into the domains of medicine has been brought about by the psychologist, the one important exception being that of Ziehen, referred to above, and perhaps also of Morselli. If it be granted that the study of psychology and its application may be of service to mental medicine, we may naturally look for its inclusion in the curricula of the more advanced medical schools. Indeed, it has already been made an optional subject for fourth-year medical students in the University of Pennsylvania. We may likewise expect to see an affiliation of the professed psychologist with institutions for defectives and the insane, and the appointment of Dr. Krohn we consider a step in the right direction, as was the appointment of Dr. Lightner Witmer, professor of psychology in the University of Pennsylvania, a few years ago, to the position of consulting psychologist to the Pennsylvania Institute for Feeble-Minded Children, at Elwyn. Such appointments indicate a distinct advance in the working correlation of psychology and mental pathology, and as such they deserve the attention and emulation of managing boards of other institutions and of State commissioners of lunacy.

THE VENOM OF SNAKES AND ITS ANTITOXIN.

FROM very early times medical science has been searching to discover a counteracting agent to the venom of snakes. In India it is estimated that on the average more than twenty thousand persons die annually from the bite of the hooded serpent. Up to last year all these efforts to find an antidote had been in vain, when almost simultaneously Calmette at the Pasteur Institute and Fraser in Edinburgh claimed to have discovered an efficacious antitoxin. Many nations and races low down in the scale of civilization have been for ages in possession of the knowledge whereby they could render themselves immune to snake poison. The negroes of the Guinea coast, some Kaffirs in South Africa, and the fakirs of India are among those who know of this safeguard. The method practised by these people is either to eat the snake or to inoculate themselves with the venom itself. Different animals are affected in different degrees by snake poison. Calmette and Fraser first ascertained by a

series of experiments on various animals the minimum fatal dose. This was found to be exactly in proportion to the body weight of the animal. After this point had been settled, the attempt was made to secure immunity for these animals against poison. This was effected by gradually increasing the dose, until finally the original fatal dose had been largely exceeded. Calmette by this method rendered animals proof against sixty times their normal minimum dose, while Fraser made a rabbit able to withstand fifty times the ordinarily fatal dose. As yet direct experiments on man have been too few clearly to demonstrate his susceptibility to snake venom, but it has been conjectured that his omnivorous character would place his susceptibility between that of a cat and that of a rabbit. Hence to kill a man of ordinary weight, from 2.16 to 2.31 grains of venom would be necessary. In India and elsewhere Calmette's method has been tested with successful results in a few cases of snake poisoning. One authenticated case of a human subject occurred at Saigon, where an assistant in the laboratory was bitten in the hand. The hand and forearm were quickly paralyzed, and the serum was not injected until one hour after the bite; nevertheless the man after passing a bad evening recovered during the night. The methods of Calmette and Fraser differ. Calmette advocates injection while Fraser believes in swallowing the venom. Weir Mitchell supplied Fraser with the venom of three species of rattlesnakes (Crotalus horridus, adamanteus, and durissus) and also with a specimen of the copperhead. Experiments have thus been made with the venom of the most deadly poisonous serpents of Asia, America, and Australia. However, before a definite opinion can be given as to the orrhotherapy of snake bites, further experiments and evidence will be required.

PRINCE BISMARCK'S DOCTOR AND MEDICAL PRACTICE.

Dr. Schweninger, the medical attendant of Prince Bismarck, has lately been giving his views on "medical men and medical practice," and from his position these views naturally arouse much more interest among the laity than they deserve by reason of either originality or soundness.

He is not by any means a believer in up-to-date medicine. In regard to the present-day doctor, he observed that he is surgeon, bacteriologist, electrician, anatomist, microscopist, physicist or physiologist, but is very little of the physician. He looks upon modern pharmacy with great contempt, and he extends this contempt to the medical men who, from misguided enthusiasm or mere self-interest, assist the pharmaceutical specialist in making a fortune at the expense of gullible humanity. As to the new discoveries of medical science he contends that they are either useless "Aborigine" or old remedies long since tried and abandoned. The corset in the woman and the silk hat in the man he believes to be the two great sources of ill health. Vaccination he believes in to a certain extent, but regards compulsory vaccination as a piece of useless barbarity. Cycling he condemns and opines that the physical advantages attending this modern mode of locomotion are apt to be too dearly bought.

News of the Week.

An Italian Sewer in the Fifth Avenue Water Pipes.—The *Medical Times* of this city calls the attention of the health board to the fact that the large water pipes which are being laid in Fifth Avenue have been used by the workmen as a urinal, if not worse, during the protracted time during which this work has been going on, thus defiling the water supply to the level of a common sewer. The writer says that from the window of his sanctum he has seen this done, and can thus substantiate the truth of the statement from personal knowledge.

The Harlem Medical Association.—The regular meetings of this society will be held hereafter at Arthur Hall, Lenox Avenue between One Hundred and Twenty-sixth and One Hundred and Twenty-seventh streets, on the second Monday of each month, except July, August, and September.

The Chicago Pathological Society.—The annual address before the Chicago Pathological Society will be delivered on the evening of Friday, December 3d, by George M. Sternberg, M.D., surgeon-general of the United States army. The subject of the address will be "Yellow Fever; Its Etiology and Pathology."

Laying the Cornerstone of the New Bellevue College.—On Saturday afternoon last, the cornerstone of the new building of the Bellevue Hospital Medical College was laid with appropriate ceremonies. Mr. D. O. Mills, president of the board of trustees, presided. The Rev. Dr. Roderick Terry delivered a prayer and then Dr. Austin Flint introduced Dr. Lewis A. Sayre, who laid the cornerstone, and in his address described the founding of the college and reviewed briefly its later history. The remaining exercises were held in the lecture room of the Carnegie Laboratory. Addresses were delivered by Dr. Landon Carter Gray, representing the alumni, the Rev. Dr. Roderick Terry, D.D., of the board of trustees, and Dr. John S. Billings, representing the medical profession. The cornerstone contains among other things a small vial of diphtheria antitoxin and a tube containing spores of the bacillus aerogenes capsulatus, which we trust may not lead to a gangrene of this venerable teaching-institution. The new building, which will occupy the southwest corner of Twenty-sixth Street and First Avenue, adjoining the Carnegie Laboratory, will be six stories high and seventy-five by one hundred feet in dimensions. It will be constructed of brick and gray stone, and will be fireproof. According to present expectations, the building will be completed by the time the next college year begins.

Dr. Laporte's Condemnation.—Subscriptions are being solicited among physicians by several of the journals in France, not only to secure a fund for Dr.

Laporte, recently condemned for malpractice, but also to raise the amount necessary for having the case re-opened in the courts. The Société de Médecine, which is the oldest medical body in France, has passed resolutions of sympathy for the unfortunate physician, and of condemnation of the injustice done him by the court, recommending that a new trial be sought.

The Late Dr. William Thurman.—The West End Medical Society, at its regular meeting held on the 7th inst., upon recommendation of a committee consisting of Drs. Edward J. Ware and Charles A. Kinch, adopted the following minute: "The West End Medical Society records with sorrow the death of an associate member, Dr. William Thurman, and offers the following testimonial of our regard and appreciation of his noble qualities. He was a conscientious and successful physician, and well informed in all the departments of medicine. He preferred family practice and was especially interested in the little children. He was generous to the younger members of the profession. He was interested in many charities and freely gave his time, money, and professional talents to their advancement."

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending November 13, 1897. November 8th.—Surgeon James R. Waggener relieved from the *Marion* and ordered to resume duties at Mare Island navy yard. Surgeon C. Biddle detached from duty at the navy department, 12th inst., and ordered to the *Newport*, 13th inst. Passed Assistant Surgeon C. H. T. Lowndes detached from the Washington navy yard, 12th inst., and ordered to the *Newport*, 13th inst. Surgeon J. E. Gardner, detached from the *Dolphin* and ordered home on waiting orders.

College of Physicians of Philadelphia.—A stated meeting of the section on general medicine of the College of Physicians of Philadelphia was held on November 8th, the president of the college, Dr. J. M. DaCosta, in the chair. Dr. F. A. Packard discussed methods of prescribing diet in private practice, and exhibited an elaborate diet sheet permitting the indication of foods that are to be avoided as well as those that may be taken either in moderation or freely. Dr. Hermann B. Allyn reported a case of locomotor ataxia with perforating ulcer of the toe, and exhibited the patient. Dr. J. A. Scott exhibited the brain, the kidneys, and the heart from a case in which death had resulted from a copious extravasation of blood into the basal ganglia of the right hemisphere, rupturing into the lateral ventricle, and extending into that of the opposite side. The heart, although free from gross valvular and endocardial or myocardial change, was immensely enlarged; and the kidneys, small and white, were in a state of parenchymatous inflammation.

Philadelphia County Medical Society.—A stated meeting of the Philadelphia County Medical Society was held on November 10th, the president, Dr. James Tyson, in the chair. Dr. George E. de Schweinitz reported a case of abscess of the orbit resulting from suppurating ethmoiditis, in which recovery from both primary and secondary conditions followed evacuation of the pus accumulation and drainage. Dr. Louis J. Lautenbach read a paper entitled "Philadelphia's Gas-Supply in its Relation to Public Health—A Comparison of the Injurious Qualities of Coal Gas and Water Gas." He pointed out that water gas is much the more poisonous by reason of the larger quantity of carbon monoxide it contains, while on the other hand coal gas is the more explosive from the larger proportion of marsh gas contained. Dr. Philip Fischelis read a paper entitled "The Use of Electrolysis and the Galvano-Cautery in the Treatment of Diseases of the Nose and Throat." Dr. Joseph Gibb read a paper on "The Differential Diagnosis of Ulcerative Diseases of the Larynx and Pharynx." Dr. G. Betton Massey made a demonstration of an original process by which nascent mercuric salts are cataphorically conveyed into the body, and presented a patient in whom a large swelling of the upper jaw had been dissipated by means of the procedure, which consists in the passage of a current of from three hundred to one thousand milliamperes or more through a gold electrode with an amalgam coating of mercury.

Is Medicine a Trade or Business?—An English contemporary says that in the lease of many London houses there is a provision forbidding the carrying on of any trade or business, and it has been decided by the courts that the business of treating the sick is one of the forbidden trades.

Pathological Society of Philadelphia.—A stated meeting of the Pathological Society of Philadelphia was held on November 11th, Dr. A. C. Abbott in the chair. Dr. Joseph Sailer exhibited a heart, the seat of old pericarditis, presenting an aneurism close to the apex of the left ventricle, which had ruptured, and a second aneurism projecting from the posterior aspect of the ventricle. Histologic examination disclosed the existence of myocarditis, which, together with the aneurismal formation, was attributed to the antecedent pericarditis. Dr. Sailer exhibited also lungs from a case of purulent pneumonia, with metastatic abscesses in the kidneys. Dr. Judson Daland exhibited an appendix vermiformis containing a pin and successfully removed by operation. Dr. J. D. Steele presented a review of the literature of Koch's tuberculin. He also exhibited a specimen of hemorrhage into the lateral ventricle, with enlargement of the heart and chronic parenchymatous nephritis. Dr. J. H. McKee exhibited a rabbit presenting an umbilical hernia containing what was supposed to be a diseased vermiform appendix, but upon more careful examination proving to be a remnant of the round ligament of the liver. Dr. D. Riesman exhibited a specimen of carcinoma of the stomach with ulceration and metastasis to the liver; and also gangrenous lungs.

Philadelphia Pediatric Society.—A stated meeting of the Philadelphia Pediatric Society was held on November 9th, the president, Dr. J. P. Crozer Griffith, in the chair. Dr. J. H. Jopson demonstrated a case

of congenital hereditary œdema in a child, five years old, that had been under observation from birth, and whose brother presented a like condition. According to the history, the father had suffered similarly in childhood. The patient presented exhibited a firm swelling of both legs and, in less degree, also of the thighs, with a large pad of œdematous tissue on the dorsum of each foot. The mental state was good and there were no other abnormal manifestations. It was generally agreed that the condition was a developmental or embryologic one, and it was suggested that thyroid extract might prove useful in treatment. Dr. F. A. Packard read a paper upon the treatment of intussusception from the medical standpoint, relating the history of a case in which operation was required and terminated fatally. He pointed out the rarity of the disorder, and expressed a caution with regard to the avoidance of too great pressure in attempts at reduction by hydrostatic means. Any other means than surgical intervention, to be successful, must be instituted early, as swelling, adhesion, and ulceration are likely to have taken place in the course of two or three days. Dr. Edward Martin discussed the subject from the surgical point of view, agreeing essentially with the propositions made by Dr. Packard. Dr. R. G. Le Conte read a paper on "Intussusceptions of the Post-mortem Type Observed during Cœliotomy," reporting a case in which this condition was found.

The Silent Profession.—A writer in the *Chemist and Druggist* falls foul of *The Times* for venturing to assert that the profession as a body is not esteemed as it should be probably, adds *The Times* writer, because the medical profession as a body has taken no pains to establish and defend its position. This is not the opinion of the editor of the *Chemist and Druggist*, who roundly declares that "if there is one class of men who more than another is everlastingly clamoring for more recognition, more rights, and more privileges, it is those doctors." If adds this genial critic, their wisdom is no more conspicuous than their silence, it does not amount to much. With respect to the charge of silence, we are told that "the silent-suffering, self-sacrificing profession is almost as successful a feat of imagination' as the large profit alleged to be made by druggists on the sale of nostrums.—*The Medical Press.*

The Clinical Society of Elizabeth (N. J.) will hold a series of special meetings during the coming winter, at which there will be lectures on various topics delivered by invitation by out-of-town physicians. The first lecture of the series was delivered on October 28th, by Dr. R. T. Morris, of this city, the subject being "Appendicitis."

Village Water Supply in England.—A writer in the *Westminster Gazette*, referring to the Maidstone typhoid-fever epidemic, says that very few villages in England have pure water, and to anybody who is acquainted with the facts it is not much wonder that typhoid and diphtheria are fairly constant items of village life. Many villages depend upon rivers for their supply, which the cottagers dip up in buckets as they want it, with all the possible contamination from other villages and land drainage up stream. Open wells and pits, choked with dead leaves and decaying vegetable matter, are frequent, and where there are covered wells and pumps they are often foul with the percolation of old cesspools and dead wells in their neighborhood. In Diss the supply comes from pits, and the surveyor reported that the water was only six inches deep and in a very bad state, with a foot of foul mud under it. It was suggested that the mud should be dredged up and the rainfall left to fill the pits again. The medical officer pointed out that the water in any case was utterly unfit for drinking-purposes, as it was contaminated by field drainage.

Starvation and Death in the Klondike.—The tales brought by returning miners are of terrible suffering and privation endured by the gold seekers who have gone to Alaska this year, and they give every reason to fear that the misery of this coming winter will beggar description. The members of a party that returned two weeks ago to Victoria gave a moving account of their return over the mountain trail from Dawson City. During the trip they were reduced to boiling and eating pieces of raw hide and their boot tops. At one time they had nothing for three days, when an owl was killed, and on this they subsisted for three days longer. When they reached Dalton's cabin two of the party were mad from hunger. The leader of the party said that when he left Dawson City four hundred persons had purchased tickets for St. Michael, intending to go down on the steamers, which will, however, not get up until spring releases the river ice. To add to the misery of their position, every day sees new arrivals. Now that they are there they find curses their welcome, and would give anything to escape. The supply of food is insufficient for those already there, and the only escape of many from starvation is through typhoid fever, which is reducing their number at the rate of five or six a day, and so leaving a smaller number of consumers of the lessening food supply.

The German Conquest of Moscow.—An English member of the Twelfth International Medical Congress writes (*The Practitioner*): "The congress was overspread by hordes of Austro-Germans. They waited in rows outside the doors before any reception, and then made a football rush for the buffet, where they remained in rows six deep for the remainder of the evening, on the *j'y suis, j'y reste* principle, not stirring even to let a lady get an ice. They were well organized; for months beforehand committees had been at work in Berlin and Vienna, the meetings being presided over by such men as Virchow and Politzer. The Teuton, therefore, was very much in evidence in every part of the congress, entirely owing to his own strategical forethought and disciplined 'pushfulness.' Nearly every German professor whose name is known outside his own lecture room was there. Like the old Highland chiefs when they went forth in state, each leader of German medicine came to Moscow 'with his tail on,' each one bringing with him a posse of admiring and dutiful retainers, who acted as a *claque*. The French were simply swallowed up in the whirlpool of triumphant Teutonism."

The Prince of Wales' Hospital Fund.—The receipts of this fund, up to date, amount to about £180,000, which is a goodly sum, but very far below that which was aimed at by those who put His Royal Highness in motion. To have realized their anticipations at least a million was wanted, but there is no hope that anything approaching that amount will come in. There are, in fact, abundant evidences that the London hospital system, as a means of relief of the poor, is on its last legs, and we may hope that these costly institutions will, sooner or later, find it necessary to make both ends meet by the wholesome process of retrenchment rather than the oft-repeated process of unblushing begging.—*Medical Press.*

"Virchow's Archiv."—This much quoted periodical celebrates with the appearance of volume cl. the completion of its fiftieth year of publication, it having been established in 1847.

A Decorated Surgeon.—Sir William MacCormac is said to be the most highly decorated member of his profession in Great Britain. He has the Order of Medjidie, the Crown of Prussia, the Ritter Kreuz of Bavaria, Dannebrog, Crown of Italy, Cross of the Takovo of Servia, Order of Merit of Spain and Portugal, and the Star of Sweden. He is also Knight of Grace of the Order of St. John of Jerusalem.

"The Journal of the Boston Society of the Medical Sciences" has been enlarged to octavo size, and will hereafter not be sent gratis to would-be readers. It will contain abstracts of experimental work carried on in the medical school of Harvard University, the experimental laboratories of the Massachusetts General and the Boston City hospitals, and the physiological and biological departments of the Massachusetts Institute of Technology and Clark University. It will be published ten times a year, from October to June, promptly after each meeting of the Boston Society of the Medical Sciences, of which it will contain full reports.

To Study Yellow Fever in Cuba.—A Washington dispatch states that the President has detailed passed Assistant Surgeon Eugene Wasdin and passed Assistant Surgeon H. D. Geddings, United States Marine Hospital service, for special duty at Havana, Cuba, for the purpose of making bacteriological investigations into the cause and nature of yellow fever. These officers have been engaged for some time in laboratory work in New Orleans, but as the yellow fever is dying out in the South it is deemed best that they should continue the investigation at a place where proper material may be obtained.

The Disinfection of Books.—At a recent meeting of the New York Library Club, Dr. John S. Billings described the method of disinfection of books by formalin vapor. In some experiments made recently at the laboratory of the University of Pennsylvania, a saucer of formalin, a book which had been infected with the bacteria of diphthéria, another with scarlet fever, and another with erysipelas, were placed under a bell jar. The experiment showed that one cubic centimetre of formalin to three hundred cubic centimetres of space would thoroughly disinfect any book in fifteen minutes.

Dr. Frederick G. Novy, of Ann Arbor, has been appointed a member of the Michigan State Board of health to fill the vacancy created by the resignation of Dr. G. H. Granger. Dr. Novy is well known for his excellent work in physiological chemistry, much of which has been done in collaboration with Dr. Vaughan, also of Ann Arbor.

A Russian Leprosy Congress.—Russian physicians are agitating the question of holding a national conference on leprosy in St. Petersburg. The conference will probably be held early in 1898, but the precise date is not yet determined upon.

Dr. Richard K. Macalester has been appointed neurologist to the Columbus Hospital of this city.

The "Right Lungs" and the "Left Lungs" are the names of two quoit teams organized among the consumptive patients of the Cincinnati Branch Hospital.

The Ninth International Congress of Hygiene and Demography will be held in Madrid in April, 1898. The following are the sections in the department of hygiene: 1. Microbiology applied to hygiene. 2. Prophylaxis of communicable diseases. 3. Medical climatology and topography. 4. Urban hygiene. 5. Hygiene of alimentation. 6. Hygiene of childhood and school life. 7. Hygiene of exercise and of labor. 8. Military and naval hygiene. 9. Civil and military veterinary hygiene. 10. Sanitary architecture and engineering. In the department of demography there will be three sections: 1. The technique of demographic statistics. 2. Statistical results and their applications to demography. 3. Dynamic demography.

Hospital Stamps.—The issue of a special stamp to be sold in aid of the Prince of Wales' Hospital Fund was so successful in its results this year that it has been decided to make it an annual institution. Philatelists throughout the world will have therefore to decide that these stamps are not worth collecting, or else submit to an annual tax for the benefit of the London hospitals.

Indigent Consumptives in the Orange Free State.—The president of the Bloemfontein Benevolent Society has written to the London *Times*, urging English medical practitioners not to send impecunious consumptives to the Orange Free State. Bloemfontein, he says, has a high and well-deserved reputation as a health resort for consumptives, but it is not a place in which invalids can hope to gain a livelihood. The population is under seven thousand, and quite three thousand out of that total are blacks. The trade of the town is not large, and living is very expensive. Phthisical persons are constantly arriving there, hoping to find some means of making a living, but find none, and soon see themselves reduced to living upon the bounty of the charitable. Similar complaints are heard from time to time in certain parts of our own

country. Next to sending a person in the last stage of pulmonary tuberculosis to die among strangers far from his home, the practice of sending those in the early stages to a new place without their previously being assured of a means of support is most reprehensible and cruel.

Association of Assistant Physicians of Hospitals for the Insane.—At the annual meeting of this society, held recently at Mendota, Wis., the following papers were presented: "Imbecility an Element in Insanity," Dr. R. M. Phelps; "A Case of Pure Cocainism," Dr. George Boody; "The Early Diagnosis of Paretic Dementia," Dr. V. Podstaka; "A Report of a Case of Tubercles of Brain, with Clinical History and Presentation of Gross and Microscopic Specimens," Dr. A. F. Lemke; "Staff Meetings in Hospitals for the Insane," Dr. Irwin H. Neff; "Report of the Ophthalmologist at Willard State Hospital, for One Year," Dr. S. F. Mellen; "Some Notes on Twenty-five Cases of Paresis," Dr. Samuel Dodds; "Alcohol as a Factor in Producing Insanity," Dr. M. C. Mackin; "A Classification Based on Clinical Lines, Combined with a Tabulation of Clinical Data," Dr. R. M. Phelps; "The Advantages of Cottages in the Treatment of Certain Cases," Dr. Samuel Dodds; "Report of an Autopsy, with Exhibition of Photographs," Dr. George Boody; "A Syphilitic Case, with Post-Mortem," Dr. Irwin H. Neff; "Relation of Laboratory Methods in Psychology to Asylums," Prof. W. O. Krohn, of Kankakee Hospital.

Public Charities in Washington.—The district commissioners will ask congress to appropriate $134,500 for the maintenance of the public hospitals and dispensaries in Washington. The largest item in the appropriation asked for is one of $57,500 for the Freedman's Hospital and Asylum.

Beriberi in the Isthmus.—Several hundred negroes were recently imported from Sierra Leone to work on the Panama Canal, to take the places of the Jamaicans, whose work had not been satisfactory. Soon after the arrival of the Africans, beriberi broke out and nearly one hundred of them have died of the disease.

New City Lungs.—The committee on small parks, appointed by Mayor Strong in June to advise concerning the creation of small parks in the city below Fifty-ninth Street, recently made a report. A number of sites were recommended, and it is estimated that all the proposed parks can be opened within four years, at a cost of about $3,500,000.

A Medical Counterfeiter.—A physician of Haralson County, Ga., was recently arrested on a charge of counterfeiting. His specialty was the manufacture of $10 gold pieces.

Smugglers of Drugs.—A young man in Rhode Island, the owner of a yacht, was recently punished for an attempt at smuggling. He took his yacht to Halifax, Nova Scotia, last summer, and while there purchased some $2,000 worth of sulphonal and phenacetin. These he brought to this country, and then found he could not dispose of them without detection. He finally became apprehensive that the authorities would find him out, so he went to the customs officer and confessed to having the drugs. These were confiscated, and the young man now has concluded that crime doesn't pay.

A Physician Accused of Grave Robbery.—A physician of Chillicothe, Ohio, was arrested recently, charged with complicity in grave robbery. He is accused of having directed two medical students to a cemetery where a body they wanted to steal had been buried, and then of carrying the disinterred body in his own trunk to the medical college in Columbus.

Newspaper Medicine.—The people of Omaha are itching, if we may believe the reports telegraphed to the daily papers of this city, and the physicians are said to be puzzled as to the nature of the affection. According to the dispatches, this "disease develops in small eruptions which cover the body. The eruptions are highly inflamed and finally scale off like scurvy." We may well believe that eruptions which "scale off like scurvy" puzzle the physicians, who state that "the disease is caused by some germ that settles on the skin," but "this is all they can say about it."

Poisonous Bullets in Cuba.—In defiance of the laws that govern civilized warfare, the Spaniards in Cuba, so the *Daily Chronicle's* special correspondent asserts, have been using brass-tipped cartridges throughout the Cuban war. These bullets become coated with verdigris, and when fired from a rifle the brass spreads out raggedly at the base, so that it creates a deadly wound. With a limited medical staff and an absence of antiseptics, such wounds lead to gangrene and death. In short, the bullets are, to all intents and purposes, poisonous, and contravene the Geneva convention. The recent capture of a train has placed a large quantity of this deadly ammunition in the hands of the insurgents, who are now enabled to hoist the Spaniards with their own petard. The nickel-covered bullet used by our own troops in the present Indian frontier war has caused such terrible wounds as to have suggested to certain unfriendly nations that we have adopted explosive bullets. The effect, however, is simply due to the ripping open of the nickel jacket on contact. In the case of the Spaniards no attempt is made by General Weyler to cloak the fact that he is waging a war of extermination, and that, in characteristic Spanish fashion, he considers any means justified that may conduce to that end.—*Medical Press.*

The Last Slap at the Expert Witness.—Experts are having a hard time now. Some can get no pay for their testimony, others are accused of ignorance, and others again of venality, but it was reserved for a St. Louis judge to recognize a "professor" of phrenology as an expert in insanity. He testified that the defendant in a murder trial was insane, and, upon being questioned as to the reasons for his conclusion, said that his opinion was based solely upon a phrenological examination made by passing his hands over the man's head.

A Jumble of Misinformation.—Under the caption "A Caution against American Medical Qualifications," our esteemed contemporary, the *Medical Press*, says: "It is understood that the American Association of Medical Colleges, which has been heretofore regarded as the select circle among the numerous diploma-granting institutions of the new world, has agreed to recognize the studies pursued in homœopathic and eclectic colleges for four years of the necessary period. This means practically an abrogation of the education test altogether, the merits of the candidate being henceforth determined by an examination of which no one knows the standard." The crass ignorance of foreigners concerning American institutions would be a matter of small concern to us if they did not presume to draw conclusions from their false premises.

Fining a Corpse.—A coroner in Kansas recently fined a corpse twenty-five dollars for carrying a concealed weapon. The latter was duly confiscated.

Obituary Notes.—Dr. James Carey Thomas died at Baltimore on November 9th, at the age of sixty-four years. He was graduated from Haverford College and later from the medical school of the University of Maryland in the class of 1854. He was a trustee of Johns Hopkins University. He was a widely known member of the Society of Friends.—Dr. E. A. Frampton, of New Plymouth, Ohio, died September 14th, of pulmonary trouble, aged almost fifty-nine years. He was a great sufferer for many years. He was graduated in medicine in 1869.—Dr. George Allen, superintendent of the State Hospital at Collins, N. Y., died in Gowanda on November 14th, of chronic nephritis, at the age of forty-four years.

The Yellow-Fever Visitation is practically at an end, although there are still a few cases reported daily in New Orleans. The United States Marine Hospital service will stop the disinfection of freight in a few days. Had it not been for this service all business, travel, and even the mails would have been stopped in the South and Southwest. The fever has finally been rooted out of the Jewish Home, Poydras Asylum, Orphans' Home, and other asylums which it invaded notwithstanding the effort to keep it out. All quarantine guards have been removed from houses, but the yellow-fever flags will be still kept up.

Obituary.

HARRISON ALLEN, M.D.

Dr. Harrison Allen, emeritus professor of comparative anatomy in the medical school of the University of Pennsylvania, died suddenly at his home in Philadelphia, on Sunday, November 14th, in an attack of angina pectoris. Dr. Allen was born in Philadelphia in 1841; was graduated in medicine from the University of Pennsylvania in 1861, and then passed a year as interne at the Blockley Almshouse. He entered the army upon completing his service at the Blockley, and was retired as surgeon with the brevet rank of major at the close of the war. In 1865 he was called to the chair of comparative anatomy and zoölogy in the medical school of the University of Pennsylvania, which he held for thirty years. He was the author of numerous monographs, papers, and books on medical subjects. At the Columbian exposition he was one of the judges on anthropology. He was a member of the Academy of Natural Sciences, the Natural History Society of Boston, the Pathological Society of Philadelphia, the Biological Society of Washington, the Philadelphia County Medical Society, the American Laryngological Association, the Neurological Society of Philadelphia, the Historical Society of Texas, and the American Association of Anatomy, of which he was one of the founders. He was visiting surgeon to the Philadelphia Hospital from 1874 to 1878, and was assistant surgeon to Will's Eye Hospital, 1860–70, and St. Joseph's Hospital, 1870–78. He was also professor of anatomy at the Philadelphia Dental College, 1866–78.

THOMAS WILLIAM EVANS, M.D., D.D.S.,

Dr. T. W. Evans, the "American dentist" of Paris, died at his home in that city, on Sunday, November 14th, of angina pectoris. He was born in Philadelphia about seventy-four years ago, the exact date being uncertain, as one of his peculiarities was a reticence concerning his age and he would never admit that he was growing old. He began life as a goldsmith's apprentice, and it was while making plates for artificial teeth that he first conceived the idea of adopting dentistry as a profession. He entered the Jefferson Medical College and took an M.D. degree there and then studied dental science. He went to Paris in 1846 to attend a conference as a representative of American dental surgery, and resolved to remain in that city, where he speedily achieved a great reputation. The president of the French Republic, afterward the Emperor Napoleon III., was among his earliest friends and patrons, and through his recommendation Dr. Evans soon numbered most of the crowned heads of Europe among his *clientèle*. He was instrumental in getting an introduction to a court ball for the Duchess of Montijo, who there met the Emperor and later became the Empress Eugénie. He again rendered a great service to the same lady by conveying her secretly out of Paris during the siege, and seeing her safely landed in England. Dr. Evans accumulated a large fortune by the practice of his profession and successful real-estate speculations, and he announced, when on a visit to this country a few months ago, that he intended to devote a large part of it to the foundation of a college of dentistry. His wife died some time ago and he left no children. Although the greater part of his life was spent in Paris, Dr. Evans always remained a patriotic American, and left directions that he should be buried on American soil. He came to the United States during the war of the rebellion, organized the National Sanitary Commission, made an investigation of the conditions here, and was instrumental in preventing Napoleon from granting recognition to the South. Dr. Evans assisted many struggling students in life and buried some poor ones or their wives when death came. He established the Lafayette Home in Paris for unchaperoned American young women who went to Paris to study. Although designed for his countrywomen particularly, the privileges of the home were extended to some other students. Altogether about one hundred could be accommodated in the home, and the demand was such that he caused the erection of another building, the opening of which was to have been celebrated on Christmas Day.

Society Reports.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, November 2, 1897.

C. A. HERTER, M.D., IN THE CHAIR.

Thomsen's Disease.—DR. GEORGE W. JACOBY exhibited a typical case of Thomsen's disease. The patient, a young man, had been referred to him by Dr. Schwinn, of West Virginia, with a correct diagnosis. The patient was twenty-eight years of age, and had lived in this country since 1884. There was nothing in the family history bearing upon the condition especially, except that a distant cousin was said to have walked stiffly and in a peculiar manner for fifteen years. The patient himself had always been delicate, but had been as active as other boys. He had had typhoid fever in 1889, and on recovering from this had first noticed a cramp in the legs. After a little it was found that he could not execute movements as quickly as before. In 1893 he first sought treatment. For the past year or two his arms and hands had also been affected. The condition varied considerably at different times, but was apparently not affected by meteorological changes. The examination showed quick reaction of the eye muscles, with spasm of the external rectus; cramp of the masseter muscles on bringing the jaws together forcibly; no involvement of the pterygoids. All the muscles of the upper extremity and of the thorax were involved; indeed, nearly all the muscles of the body. The contraction of the muscles was decidedly tetanic, and was very marked at first; but on repeated tests it gradually subsided. The electrical examination showed marked myotonic reaction, and also a wave-like appearance; but he could not make up his mind that this latter phenomenon consisted of a series of waves, such as are observed in water. A piece of muscle had been excised from the biceps and also one from the quadriceps, but they had not yet been minutely examined. The case was quite characteristic on account of the marked variations occurring from time to time. The speaker said that in an article published by him ten or more years ago, he had taken the stand that these cases were probably of myopathic origin, due to some congenital defect in development; but in the light of modern investigation he was now disposed to believe that some central cause was at work—that there was a functional hereditary derangement of the central nervous system—a condition of lessened resistance in the cells. This did not seem to him a strange assumption, when one considered the well-known idiosyncrasies exhibited to various toxic influences. On the theory that some kind of toxæmia was at the foundation of this disease, he thought the observed phenomena could be explained—at least, in this direction seemed to lie the possibility of solving the pathogeny of this class of cases. This patient had not been affected by the disease until eighteen years of age; hence there was no propriety in calling such a case "myotonia congenita." He would divide these cases into three classes, viz.: (1) myotonia congenita, (2) myotonia acquisita, and (3) myotonia transitoria.

DR. FREDERICK PETERSON asked why a theory of causation might not be founded upon chemical changes in the muscles. Changes in the structure of the muscles, he said, were known to arise; for instance, in connection with typhoid fever.

DR. HERTER thought that we must look to toxic agents as furnishing at least a clew to the causation of such conditions. The peculiar susceptibility to certain types of poisons, seen, for instance, in epilepsy, must be referred to peculiarities of the central nervous system. He would agree with Dr. Peterson that these cases did not seem to be of central origin, and that it was more probable that they arose from chemical changes in the muscles. To study this subject successfully, it would be necessary to inquire into the condition of the secretions and excretions at the time of the onset of the disease and not after it had become chronic.

Pachymeningitis Hemorrhagica Interna in Children.—Dr. C. A. Herter said that internal hemorrhagic pachymeningitis was usually considered to be a very rare condition in children, yet one German observer had found it in about seventeen per cent. of his autopsies. The following cases were reported:

CASE I.—A female child, five and one-half months old, was admitted to the Babies' Hospital on May 15, 1897, with an entirely negative family history. The child's illness had begun one month previously, with persistent vomiting. The head was of normal shape and the fontanelles were not bulging. There was a soft spot over one parietal bone. The child had no teeth. On the fifth day after admission tremor and nystagmus developed. Nine days after admission there was a general convulsion, in which the mouth deviated to the left. Cyanosis was a feature of the convulsion. A second one occurred in ten hours. After these seizures the fontanelles were sunken. The child now became semicomatose, and died after a few days.

The autopsy showed the presence of hemorrhagic pachymeningitis, fibrino-purulent pleurisy, pulmonary congestion, fatty liver, and nephritis. Along the superior longitudinal fissure, over the entire base and over the island of Reil on both sides, was a membrane covering the pia. The ventricles were normal in size and contained about one drachm of hemorrhagic fluid. There was fluid blood in all the sinuses. The cervical cord showed the same conditions. Under the microscope the right occipital region showed the pia attached to the cortex in many places, and there was a splitting up of the membrane overlying the cortex into two or more layers. The inner layer was infiltrated with small round cells. The outer membranous layers consisted of small round cells, fibroblasts, and connective-tissue fibres. The island of Reil showed the same condition, but much more marked, and about the same condition was present over the cerebellum. In the spinal cord there were only slight traces of hemorrhage.

CASE II. — Female infant, colored, twenty-two months old. The child had been nursed for seven months. It had never walked or stood alone, and was markedly rachitic. The first two months in the hospital were marked by slight loss in weight and considerable prostration. In October, 1897, the child was readmitted, with the statement that she had been well up to three days before, at which time she had had four convulsions, followed by three more the next day. The general condition was very bad. The hands and feet were in a position of persistent flexor contraction, characteristic of tetany. The knee jerks were unobtainable; the fontanelles were bulging. There was slight but varying rigidity of the muscles at the back of the neck. Bloody mucous diarrhœa was present, and the child died comatose.

The autopsy showed pachymeningitis hemorrhagica interna, broncho-pneumonia, and acute and chronic ulcerative colitis. Over the right side of the brain was a recent blood clot, covering the entire hemisphere, and over the left occipital lobe the inner surface of the dura was covered with a membrane extending from the superior longitudinal fissure on either side. The pia was congested. The ventricles and brain substance were apparently normal. All the sinuses were filled with recent clots. The microscopical ex-

amination showed thickening of the pia over the right temporo-sphenoidal lobe, and the vessels of the pia were thickened. There was also a thick membrane splitting up into layers, as in the other case. There were numerous small blood-vessels, and hemorrhages had occurred into the meshes of the membrane. In places there were aggregations of small round cells undergoing fragmentation. They were found chiefly in the superficial layers of the membrane. In the dura the fibres were separated from each other by serous infiltration, and the dura was covered with a membrane similar to that already described. In places there was very extensive pachymeningitis.

It was at about five months of age, the speaker said, that this disease was especially frequent. The majority of these infants were badly nourished, many of them being subjects of rachitis or of chronic colitis. The new membrane must be regarded as originating from proliferation of the dural endothelial cells. In some cases there was little inclination to hemorrhage. The membrane was very variable in thickness; sometimes it reached a thickness of two or three lines. It was especially prone to occur in the basal fossæ. There seemed no good reason for thinking that the locality of the pigmentation indicated that the layer of blood originated from the inner surface of the dura. On the other hand, there was no conclusive proof of the old notion that the disease was of inflammatory origin. It was so common to find severe intoxications without such lesions that the intoxication theory did not seem to him tenable. It was apparently impossible to recognize the condition until the hemorrhage occurred, and even then it was extremely difficult to make a positive diagnosis. Slight cerebral symptoms were probably masked in these very young and usually marantic children. The hemorrhage was probably more often unilateral, and the usual symptoms present were rigidity, hemorrhage, and coma. Paralysis was rarely noted. The pyrexia was usually less than in meningitis, but these cases were so commonly complicated with other diseases that the range of temperature was very variable. He did not think there was any symptom or combination of symptoms in hemorrhagic internal pachymeningitis which might not be encountered in any acute infection without any cerebral affection being present; but whenever unilateral rigidity and convulsions, with deepening stupor, were present in a cachectic or rachitic child under one year of age, we should think of that diagnosis. It was probable that relatively slight traumatisms of the head might occasion rupture of vessels in the highly vascular membrane. This gave these cases a certain medico-legal importance.

Dr. Peterson remarked that the condition was interesting to him because of the possibility of its being found occasionally in infantile cerebral palsy.

Dr. Herter said that he was inclined to think that these membranes were considerably more frequent than one would suppose from the literature. It was quite possible to overlook the presence of the membrane if it were not decidedly vascular.

The Pathology and Morbid Anatomy of Huntington's Chorea, with Remarks on the Development and Treatment of the Disease.—Dr. Joseph Collins said that the neurologist frequently encountered knotty problems, and among these none had the secret of its genesis more carefully concealed than the hereditary degenerative diseases. The pathogenesis of the acute inflammatory diseases of the nervous system was an open book, but the degenerative diseases were discouragingly slow in yielding the mystery of their being. This was especially true of such degenerative diseases as the hereditary ataxias, choreas, and dystrophies. The status of the original lesion could not always be inferred from a consideration of the lesion found at the time of death, and this was particularly true if the disease had existed a great number of years. No one could do much laboratory work on the central nervous system of individuals who had succumbed to degenerative nervous diseases of long duration, without having forced upon him the fact that there are certain abnormalities of the circulatory system—varying degrees of degeneration of vessels, change in the size of the lymph spaces, and relative disproportion of glia tissue to the parenchyma—which occur with all degenerative diseases, considered entirely apart from their causation. He felt convinced that such changes were very often secondary, and had no other significance than as evidences of protracted disturbance of nutrition, and that this nutritional depravity was the result of the existence of the original lesion. There was nothing more certain than the occurrence of glia proliferation in all slowly progressing destructive lesions of the nervous system, but nothing could be more misleading than to consider this glia overgrowth to be primary and the changes in the parenchyma secondary.

Huntington's chorea, Dr. Collins said, was a comparatively rare disease and of rather recent recognition; hence the reports made upon its pathology had not been uniform. The discrepancies were apparently the resultant of the varying points of view of different observers. In studying the nervous system in cases of Huntington's chorea, it was scarcely justifiable to maintain that all the morbid conditions were inherent to the disease, for, as has been said, many of them might be the consequence of prolonged interference with nutrition. Although the present study of the pathology of the disease was upon an individual who had had the disease for a considerable time, it was compared with a case of much shorter duration reported by Dr. C. L. Dana. A study of these two cases, he felt confident, would go far toward establishing the morbid anatomy and hinting at the pathogenesis.

His patient was a man, fifty-five years of age, who had married in early manhood, and who was the father of three children—all of them giving evidence of neuropathic inheritance. The known duration of the disease in his case was ten years. At the beginning the hands only were affected, but in the last years the lower extremities were also involved. The mind remained in fairly good condition up to about three years before his death, when he began to have suspicions about his relatives and friends, and became forgetful and suicidal. His speech was so imperfect that in the last years of his life he was understood with difficulty. Dr. Collins had seen him for the first time a few days before his death. He then had a temperature of 105° F., and it remained at about this point until the end. The movements were very severe and incessant, except during sound sleep, although even then they frequently awakened him. He was quite conscious, but made no response to questions. The cause of death seemed to be exhaustion and high temperature. The disease was traceable to the maternal grandfather—an Irishman—who had three children, two of whom were affected with the disease. One of these was the mother of this patient, and of her seven children five were afflicted with the disease. The other daughter had two children, one of whom became choreic. In three generations there had been no less than nine affected, and, when it was considered that many of these children died in infancy, the number of cases that had developed was surprisingly great.

At the autopsy, on opening the skull, the dura was considerably adherent, the diploe dense, and the Pacchionian depressions were marked. The brain had a wet appearance, as did also the cord. The pia was not adherent to the brain. The convolutions of the anterior pole of the brain were very small, and the entire encephalon weighed forty-three and one-half ounces.

The dura was intimately adherent to the spinal column. The principal fissures were somewhat wider and shallower and shorter than in the normal brain, but there was nothing pointing to defective convolutions. The average thickness of the gray matter was uniformly less than in the normal brain cortex, but this thinness could not be attributed here to age. An examination of the pons and medulla oblongata did not show any marked variations from the normal, but the changes were more noticeable lower down. Microscopical changes were not confined exclusively to the Rolandic region, but the process here was more advanced. The specimens were stained by various methods and carefully examined. The macroscopical changes were briefly as follows: 1. Thinness and atrophy of the cortex. 2. The mottled, streaked appearance and cribriform state on cross-section of the brain in the fresh state, due to diminution in number and in health of the ganglion cells, and to the increased perivascular and pericellular spaces and increased patency of blood-vessels. The microscopical changes were: 1. A decay or slowly progressive degeneration of the ganglion cells of the cortex throughout the brain, especially of the two deepest layers, the layers of large pyramids and polymorphous cells. This cell death was particularly evident in the Rolandic region, very much less so in the anterior pole of the brain, and incomparably less in the posterior pole. 2. Increase of glia tissue, but not sufficiently prominent to constitute sclerosis, the conspicuous increase being about blood-vessels and ganglion cells. 3. Enlargement of the pericellular spaces and distention of the pericellular spaces. 4. Slightly diseased blood-vessels, consisting principally of a proliferation of the nuclei of the adventitia and a thickening of the intima. This involvement of the vessels was not regular or symmetrical, but showed itself in certain sections of vessels only. 5. Relative paucity of the medullated fibres of the cortex. In short, it might be said that the lesion was a chronic parenchymatous degeneration of the cortex, with consecutive and secondary changes in the interstices, the brunt of the disease having been borne by the motor regions. There was, in consequence, a degeneration of the pyramidal tracts in the spinal cord. In Dr. Dana's case the central convolutions suffered most, and the process occurred in patches throughout the affected cortex. There was nothing to justify the opinion that it was an inflammation; the process was evidently one of degeneration.

In connection with the treatment, Dr. Collins said that he desired to emphasize the necessity for delaying the advent of the disease in those who had a hereditary tendency to it, and also to emphasize the folly of tenotomy of the eye muscles—a method of treatment now being carried out upon one of these unfortunate individuals in this city, with a promise of a cure. If we wished to influence the course of hereditary chorea after it had once become manifest, it would be necessary to administer in the largest possible doses consistent with life whatever drug was selected, and to maintain this medication for a long time.

Dr. Onuf said that he had been present at the autopsy in the case reported in the paper, and had been especially impressed with the general narrowing of the gyri—a general atrophy. On section, the mottled appearance of the cortex had been most striking, but the cribriform appearance produced by the enlargement of the perivascular spaces was also worthy of note. The general appearance of the brain resembled very closely that of a brain from a case of general paresis. The microscope confirmed the macroscopical appearances, although the changes were not so marked as one would have expected from the gross appearance. The cell changes were of the atrophic order. The characteristic feature was the accumulation of neuroglia cells in the pericellular and perivascular spaces. His impression was that this accumulation was due to a secondary process following atrophy of the cells. The disease was evidently a degenerative one, originating in the parenchyma of the brain, and not in the interstitial tissue.

NEW YORK MEDICO-CHIRURGICAL SOCIETY.

Annual Meeting, November 2, 1897.

J. Blake White, M.D., President.

A Plea for Rational Therapeutics in Diphtheria.—Dr. A. E. Bieser read a paper with this title. He said that a proper working hypothesis could not be based on either bacteriology, pathology, or etiology alone, but upon a sensible combination of all three; and until such a hypothesis was formulated no investigation of diphtheria could be said to be exactly scientific. The diphtheria bacillus might be the specific cause of what was known as Klebs-Loeffler infection, but it certainly was not the cause of the physiological inflammation of the throat which furnished that point of least resistance which was absolutely necessary for the development of the bacillus and its toxin.

The Specific Nature of Diphtheria.—In the first place the Klebs-Loeffler bacilli did not affect the healthy throat, because of the absence of a nidus of development, whatever that might be. That a perversion of normal physiology was necessary to start up the Klebs-Loeffler bacillus was generally admitted; hence this bacillus could not cause the disease, and it was perfectly reasonable to believe that any treatment that restored or partially restored the perverted function might do as much good as a specific plan of medication, such as that with antitoxin. It was known that healthy secretions were capable of disposing of even pathogenic bacteria, and bacteriologists admitted that the healthy throat was in itself a barrier against the invasion of the Klebs-Loeffler bacillus. If this was true, our effort should not be to get rid of the disease by the use of diphtheria antitoxin and germicides, but by stimulating the normal secretions and so favoring the removal of the pathogenic germs. Numerous cases of clinical diphtheria had been reported by competent observers in which Klebs-Loeffler bacilli were absent—cases which were diphtheritic in every respect, even to the extent of causing paralysis and death. Indeed, Loeffler himself had stated that there could be true clinical diphtheria without the presence of Klebs-Loeffler bacilli. Jacobi, in 1895, had stated that he doubted if there might not be such a thing as a streptococcus diphtheria, and Bowker in the same year had said that the streptococcus infection associated with diphtheria was just as virulent as the infection with the Klebs-Loeffler bacilli. It had seemed to him that, just as in tuberculosis, we had a distinct disease to treat independently of the bacillary or non-bacillary infections which modify the progress of the disease, so in diphtheria, independently of specific infection, there was a distinct physiological disturbance antedating, as well as following, the infection. If the specific hypothesis were not in accord with all the facts, how could a specific plan of medication, based upon such a hypothesis, meet all the requirements of the bedside treatment of diphtheria? Antitoxin might overcome the specific toxæmia, but it was not inconceivable that at the same time the physiological processes might be so interfered with as in itself to constitute a danger. A case was cited in which the patient was treated with antitoxin and recovered from the diphtheria, but died of nephritis originating, as it seemed to him, from the introduction of the specific remedy into the system.

A Dual Working Hypothesis.—He based his treatment upon a dual hypothesis, as opposed to the specific or bacteriological one. This hypothesis comprised two entirely different parts, viz.: (1) the numerous and varied perversions of physiological functions, called "the disease;" and (2) the Klebs-Loeffler infection and the other infections. It was important to remember that about the time the physician was called in to treat diphtheria it might be something more than a Klebs-Loeffler infection—the lungs, kidneys, and blood might be already infected with streptococci. In addition to the pathological lesion in the throat, the kidneys might be the seat of cloudy swelling or fatty metamorphosis, and the disturbances of the vital functions might be so great that all the antitoxin in the world would not cure the disease, though it might cure the Klebs-Loeffler infection.

Treatment.—He was not one of those who believed that when one had injected antitoxin diphtheria had been treated and that there was nothing else to be done. In some cases of diphtheria, especially in mixed infections, and when the renal function was already impaired, it would be far better if the injection of antitoxin was entirely dispensed with. The particular patient must be treated rather than the infection. As healthy secretions inhibited bacterial invasion, our effort should be to stimulate this action of the secretions. Three remedies seemed to act in this way, viz.: (1) ipecac; (2) iron; and (3) mercury. Ipecac increased the activity of the secretions, and iron removed the congestion in the throat and so favored normal secretion; but his sheet anchor was mercury. In his experience, this drug, in combination with whiskey and iron, had cured any Klebs-Loeffler toxæmia that the antitoxin could cure, provided it was given early enough and in sufficient doses. He did not give it as a germicide, but because it was one of the best glandular stimulants of the epithelial structures at our command. It was also a powerful hepatic stimulant, and a most excellent diuretic. In his hands, it had yielded better results in the same class of cases than had antitoxin. In cases of mixed infection, in which after the antitoxin injection the renal function had been entirely in abeyance, or this already impaired renal function had been still further interfered with, this treatment had caused a free action of the kidneys, in marked contrast to what was observed in cases in which antitoxin alone had been used.

Author's Statistics.—Of 33 cases treated in tenement practice without antitoxin, the Klebs-Loeffler bacilli were found in 80 per cent., and all but two were fatal. The two fatal cases had not been seen until the disease had lasted for a number of days, and they terminated in from seven to fourteen days later. He had treated in private practice a total of 115 cases of diphtheria, with 6 deaths, or a mortality of about 5 per cent. Of these 115, 104 were non-laryngeal, and of these 3 were fatal, giving a mortality of 3 per cent. There were 11 cases of laryngeal diphtheria, with 3 deaths, or a mortality of 27 per cent. Of the 115, 70 cases should have recovered under any rational treatment, as the croupous inflammation was not accompanied by a deep ulcerative process. Twenty-nine cases were severe, a deep ulcer being left after the membrane had come off. Five were septic nasopharyngeal diphtherias. The eleven laryngeal cases required intubation. The cases reported were all clinical diphtheria, yet under his treatment the mortality had been only 5 per cent. without antitoxin. His results corresponded well with those of Dr. Jacobi and Dr. Fruitnight. His treatment consisted in giving one-forty-eighth to one-thirty-second of a grain of bichloride of mercury every hour, day and night, for forty-eight hours, and then every two or three hours for two or three days more. Five minims of the tincture of the chloride of iron was given in the same way as the bichloride, only fifteen minutes later, and continued somewhat longer. By the fourth day the desired effect from the bichloride of mercury would be produced, *i.e.*, very slight salivation. Half an hour after the ingestion of the iron, two drachms of whiskey was given, diluted with water, and this was also kept up hourly. With this tripod of drugs he had succeeded in saving ninety-seven per cent. of the laryngeal and seventy-two per cent. of the pharyngeal cases. In the laryngeal cases it had been his practice to give forty grains of calomel by sublimation, every two or three hours. This he considered to be the treatment of the disturbance of throat physiology.

Gives Mercury and Whiskey up to the Physiological Effect.—As regards the treatment of the other conditions present, of course absolute rest must be insisted upon. Half an ounce to four ounces of whiskey should be given daily, the dose being doubled even if the pulse remained weak. The whiskey must be given until the physiological effect was obtained—flushing of the cheeks, odor of alcohol on the breath, and the desired effect on the pulse—no matter what the dose, but it must be given well diluted with water or milk to prevent its emetic action. Children stand large doses of alcohol, as they do mercury, in diphtheria. In older children affected with nasal diphtheria it might be wise to irrigate the throat with decinormal salt solution, but in younger children, who would always resist, such treatment did more harm than good. The abstinence from injudicious local treatment of the nose and throat had had a great influence in diminishing the absolute death rate from diphtheria in regions where antitoxin was now employed. Such abstinence would reduce the absolute mortality from diphtheria anywhere, irrespective of the use of diphtheria antitoxin. In order to combat the Klebs-Loeffler infection, if the case was seen early enough, antitoxin might be administered, but if not seen until the sixth or seventh day, and especially if there was marked sepsis or marked impairment of the renal function, he would not use it. These cases usually had suppression of urine, and terminated fatally, although perhaps this was not due to the antitoxin. In five cases of badly septic nasopharyngeal diphtheria the treatment above outlined saved two, although both had been declared by consultants to be hopeless. In the one hundred and fifteen cases there was not a single instance of mercurial poisoning; on the contrary, he had had the greatest difficulty in salivating these children. The most that he could do was slightly to increase the salivary secretion after two or three days, and this increase would disappear in twenty-four hours or so. There was no swelling, tenderness of the gums, or loosening of the teeth.

Proof of Specific Nature of Diphtheria.—Dr. William H. Thomson said that the paper was an illustration of how endless might be the discussions brought out by this subject of diphtheria. The word "specific" as applied to disease could be used correctly only in infections. It was difficult to think of a specific disease that was not an infection. He had been deeply interested in the specific nature of infectious diseases from the very beginning of his medical career, and the second medical paper that he had published had been on "The Distinction between a Virus and a Poison." In this he had directed attention to the fact that the action of a poison necessarily depended upon quantity, whereas with a virus, although quantity was not an essential element, a certain time, called the period of incubation, or, better, "germination," was required for the development of the characteristic symptoms. Another element of infection was reproduction—a process which could not be ex-

plained either physically or chemically—and which was observed only in the animal kingdom. At the time that he had presented to the County Medical Society the communication referred to, it had been met with a howl of derision, and for years he had been ridiculed for teaching that these communicable diseases were dependent upon organic agents. His especial reason for believing this doctrine was their markedly specific character.

The Characteristic Pathological Lesions of Diphtheria.—By "specific" was meant that a disease which was communicable could, in an infected subject, produce exactly the same disease in its clinical features in a healthy subject when communicated to him, and that the pathological changes would be identical. He did not think any one now would question that this was true of diphtheria. From the diphtheritic membrane a poison could be isolated which, when injected into animals, produced identical changes of a most characteristic and specific kind. These changes consisted in a very peculiar and specific form of fatty degeneration of the heart, and a peculiar change in the skeletal muscles, not at all resembling the fatty change observed in other diseased conditions of the skeletal muscles. Perhaps the most notable and characteristic changes were those occurring in the nervous system—a true solution of the axis cylinder, beginning in the medulla and ending in a breaking of the axis cylinder, with a typical Wallerian degeneration in the parts beyond. This degeneration was certainly specific, and was produced by the poison isolated from the diphtheritic membrane. Again, there were some peculiar hyaline changes occurring in small spots in the substance of the liver, and without any nephritis whatever there were similar and characteristic changes occurring in the parenchyma of the kidneys. These changes were, therefore, all specific. This being the case, we must admit that there is such a thing as specific diphtheria, due to a specific agent, namely, a bacterium which, outside of the body, upon plates and liquid cultures, could be propagated and made to produce the same specific results. If he had understood the paper correctly, the position taken by the author was that something besides the presence of the specific bacillus was necessary before we could have the disease diphtheria. He did not think any one would oppose such a statement. Wherever we had a seed, we did not necessarily have a crop, but when we had the crop we had the seed; in addition to the seed we must have the soil, otherwise we could not get the crop. Such a principle was exemplified in numerous instances throughout all nature—indeed, this was a strong argument against these diseases being due to ordinary poisons, for surely if such a poison was administered there would be a definite relation between the size of the dose and the result. Again, he had never seen a turnip turn into a potato, or *vice versa*, but he had seen fields in which, along with the potatoes or turnips, there were all sorts of weeds. In every one of the infections we sooner or later got multiple infections, and the disorders dependent upon them. There was, therefore, nothing remarkable about true septicæmia developing in conjunction with diphtheria; it was no argument against the specific nature of diphtheria. In pneumonia, for example, we had not only a specific infection but an invasion with a host of micro-organisms. All this simply meant that we must be constantly on the lookout for infections or complications other than the specific one first demanding our attention. It was for this reason that the skilful physician was he who could recognize not only the special action but also these collateral and frequently fatal complications arising from other causes.

Diphtheria Antitoxin.—He believed there was a true specific remedy for the specific infection of diphtheria, but his recognition of this served only to perpare him for all sorts of failures. One might just as well say that water had no specific power to put out fire, because houses sometimes burn down during a heavy downpour of rain. He had understood the reader of the paper to say that there were a number of cases of clinical diphtheria without the presence of the specific diphtheria bacillus. Certainly, it was well known that membranous exudation was a feature of various diseased conditions besides true diphtheria, and it was just for this reason that so much stress was laid upon the necessity for establishing the diagnosis of diphtheria by bacteriological examination. But he would take issue with the reader of the paper on the statement that the changes in the nervous system, characteristic of diphtheria, could occur in cases in which there had been no infection with the Klebs-Loeffler bacilli. There were cases of neuritis occurring with other infections, but these were not at all like the acute process of nerve degeneration found in cases of infection with Klebs-Loeffler bacilli.

Dr. Dillon Brown said that he certainly could not accept the conclusions drawn by the reader of the paper, although many of the facts stated were so well known and so generally accepted as to be considered almost elementary. The result obtained by Dr. Biesser in ordinary nasal diphtheria represented about the usual results that had been obtained by practitioners under this line of treatment before the introduction of antitoxin, and if Dr. Bieser had used antitoxin in proper doses in these cases it was probable that his results would have been much better. Dr. Brown said that in the laryngeal cases Dr. Bieser had certainly had better results than he had obtained with the same line of treatment, but such a very small number of cases was of very little account as indicating the value of any plan of treatment. His own experience comprised considerably more than one thousand cases, and if the results were divided up into hundreds, according to the different methods of treatment adopted, the results would vary more than fifteen or twenty per cent. Previous to antitoxin, and with the internal use of mercury, either in the form of bichloride or calomel, his results had not been nearly so good as those of Dr. Bieser—only forty to forty-five per cent. Since the use of antitoxin they had been very much better.

Mercury Rarely Causes Salivation in Children.—It was not surprising that the reader of the paper should not have produced salivation by such large doses of mercury, for children were not easily affected in this way by mercury; instead, this drug usually made them intensely anæmic and caused extreme prostration. In his own experience he had rarely seen salivation, but he had observed under this treatment intense anæmia and great prostration. In conclusion, he would enter his protest against a line of treatment like that advocated in the paper, which kept a baby awake day and night for forty-eight hours. Remarkably good results would have to be shown to justify such a course.

Faith in Antitoxin Still Weak.—Dr. William Henry Porter said that he was very decidedly in accord with Dr. Thomson in his assertion that diphtheria is a specific disease, and that it has a specific poison, producing specific changes. He had not yet been able to acquire so large a faith in the antitoxin treatment of diphtheria as some had done. In following the discussion it had occurred to him that the probability was that if antitoxin was the specific it was claimed to be it was only for a particular kind of infection; and, although it might be an agent for good in that particular instance, it might be very harmful to an individual in health or one with a mixed infection. He thought he had seen very unpleasant results from the use of antitoxin in cases which were not

diphtheria, or which were very mild examples of this disease. It was for this reason that he felt still somewhat doubtful as to how great a specific antitoxin was for diphtheria. He had no doubt that antitoxin was a chemical compound in the same sense that strychnine, atropine, morphine, etc., were, and it might, when introduced into the system, by its very toxicity stimulate the protoplasm into increased activity, but the question in his mind was whether it could do this with absolute safety.

Bromine the Best Local Application.—Dr. W. H. McEnroe said that he knew of nothing better than Smith's solution of bromine for the destruction of the horrible odor caused by decaying diphtheritic membrane in the throat. This remedy could also be given internally. He had never lost a case of diphtheria treated in this way. He relied upon iron in this disease, simply as a cardiac stimulant, and when it was given in drachm doses with sufficient frequency it would sometimes cause a return of the first sound of the heart. He had not used antitoxin very extensively, but from the testimony of others he was convinced that it approached very closely to a real specific.

Immunization.—Dr. S. A. Knopf said that nothing had been said in this discussion about the use of antitoxin as a prophylactic. In a recently published report of a severe epidemic of diphtheria in Bologna, isolation, disinfection, and closure of the schools had failed to stop the epidemic. Preventive inoculations of antitoxin had then been used on a large scale, four-fifths of the children between the ages of one and twelve being subjected to the treatment. At once new cases failed to develop, and the epidemic was quickly brought to an end. While in Paris he had watched with intense interest the first experience with diphtheria antitoxin. From his notes made at that time he found that, whereas the mortality from diphtheria in one hospital for the period from 1890 to 1894 had been seventy-three per cent., it fell to forty-nine per cent. in the first few months after the introduction of the antitoxin treatment. This should convince any one that it is really a specific in the treatment of diphtheria.

Dr. William Vissman said that he heartily agreed with Dr. Thomson as to the very great rarity of a pure infection of any sort, and he also believed that if antitoxin was mixed with the toxins of diphtheria and injected into an animal the animal would not die from a large dose of the toxins of diphtheria. He would also grant that if a certain quantity of diphtheria antitoxin was introduced into a lower animal, and after twelve hours the toxins of diphtheria were introduced, the animal would probably recover. If, however, a fatal dose of toxin was introduced, and then after twelve hours the antitoxin was given, the animal would not always recover. In other words, the diphtheria antitoxin seemed to be an antidote for the specific toxins of the Klebs-Loeffler bacillus.

Impossible to Make a Reliable Bacteriological Diagnosis of Diphtheria in Twenty-Four Hours.—It was customary now to make diagnoses of diphtheria in twenty-four hours by a bacteriological examination, yet in the first few hours the Klebs-Loeffler bacillus looked exactly like the xerosis bacillus—an absolutely harmless organism. Then there was an organism called the pseudo-diphtheria bacillus, which resembled it in every way, except that it was not toxic. We might take the diphtheria bacillus in its most virulent form, and put it in an incubator and grow it at about 45° C.; this would make an excellent demonstration of diphtheria in the laboratory, but it would be found to have lost its virulence at that temperature. We knew of no method by which this virulence could be reproduced. It could not be said that one had diphtheria unless there was present a diphtheritic lesion in the throat; the simple presence of the diphtheria bacillus in the throat did not constitute clinical diphtheria. Considering the many obstacles to be overcome in connection with the determination of the virulence and the establishment of the identity of the diphtheria bacillus, he did not hesitate to assert that a bacteriological diagnosis of virulent diphtheria in the human throat could not be made in twenty-four hours. It should be remembered also that about four hundred different organisms had been isolated from the throats of healthy persons, and that many organisms from the mouth, if cultivated in bouillon, would produce death in the lower animals in a short time, although perhaps not quite so quickly as the diphtheria bacillus. When one said that an organism was the cause of a disease, one must find that organism in every case of the disease; one must obtain a pure culture of this organism and with it reproduce the disease. Now the only thing that had been done so far with the diphtheria bacillus was to obtain it in pure culture.

Diphtheria in the Lower Animals.—The lesions found in human beings suffering from diphtheria were not the same as in the lower animals. If diphtheria bacilli were placed on the mucous membrane of one of the lower animals, there would be few if any symptoms; but if the mucous membrane was denuded and the bacilli were then applied to it, a false membrane would be formed, but it would not extend beyond the denuded surface. Sometimes by the injection of the diphtheria bacilli the membrane would be made to spread farther. If these animals lived long enough, they would suffer from paralyses, and this would occur even when they were inoculated with almost any other organism. If the diphtheria bacillus was injected into the subcutaneous tissue, the animal would die; if the fatal termination was postponed for some time, there would be first an infiltration at the site of the injection, and then a slight hydrops of the pericardium, pleura, and peritoneum. These were not characteristic of diphtheria in the human being. It would also be found that there was cloudy swelling of the muscles, kidneys, liver, and other organs; but the same was true of almost any infectious disease. If the animal lived sufficiently long, necrosis would occur at the site of the injection, but no one had yet been willing to place himself on record as saying that the bacilli so introduced in the lower animals had increased at all in number. Dr. Vissman said that he did not think that the diphtheria produced in the lower animals was exactly the same disease as that found in the human being. Kittens, young chickens, and dogs sometimes die of a disease presenting the usual clinical features of diphtheria—*e.g.*, diphtheritic membrane and paralyses—but the bacillus present here and capable of reproducing the disease was unlike the diphtheria bacillus. In diphtheritic inflammations of the conjunctiva we rarely found diphtheria bacilli, and the same was true in most cases of diphtheritic otitis. If a person had a slight ulceration in the throat, and a twenty-four-hour diagnosis showed diphtheria bacilli, the conclusion would be that the case was one of true diphtheria. It was on such diagnoses that many cases were reported as having been cured of diphtheria by the use of antitoxin.

Effects of Micro-Organisms on One Another.—Dr. Vissman next considered the effects of the micro-organisms on one another. He said that if the bacillus butyricus, a strictly anaerobic organism, was used to inoculate a tube, and at the same time the bacillus prodigiosus was added, it would be found that the bacillus butyricus would grow perfectly in the presence of the atmosphere. Similarly the bacillus of tetanus would not grow in the presence of the atmosphere unless the bouillon were at the same time inoculated with the diphtheria bacillus. Again, the diph-

theria toxin became less virulent when mixed with the staphylococcus pyogenes aureus, and very much more virulent when mixed with the streptococcus. Clinically, he said, it would be found that diphtheria was never a pure infection with the Klebs-Loeffler bacillus; it was most commonly contaminated with the streptococcus, which, as had been said, tended greatly to increase the virulence of the diphtheria bacilli.

In conclusion, he suggested that in the use of diphtheria antitoxin it was well not to lose sight of the effect of the injection of heterogeneous serum into the human system.

Antitoxin Treatment Not Free from Danger.—Dr. George Bieser said that at first he had been enthusiastically in favor of diphtheria antitoxin, but he had soon learned that his patients developed acute suppression of urine shortly after the administration of this remedy. This dangerous complication had developed in mild, ordinary cases of diphtheria, which, according to his past experience, should have recovered under very simple treatment. Recently he had used simple remedies, like benzoate of sodium and bromide of potassium, and just such cases had recovered. In the severer cases of diphtheria he had found the antitoxin of no value at all—in fact, the children had become much worse after its use. He thought the cases treated very recently here were not nearly so severe as those seen a few years ago. He saw no reason why we should run the risk of injecting a remedy of unknown properties in the mild cases, that usually recovered under simple and absolutely safe treatment.

Dr. Cook said that he had heard it claimed that diphtheria antitoxin produced its results by introducing into the system a substance which nature would produce, provided the individual lived long enough. If this was the correct theory of its action, he would raise the question: "Is it rational to introduce into the system at one time such large quantities of a substance that nature would only produce slowly and in small quantity?"

Dr. A. E. Bieser, in closing the discussion, said he had endeavored to make it understood that he believed the clinical disease diphtheria was due to a combination of germs, although undoubtedly one form was due to the Klebs-Loeffler bacillus. When there were present marked prostration, irregular temperature, croupous inflammation, and necrosis, the case was one of clinical diphtheria, no matter what the germ causing it. The point he had made was that diphtheria antitoxin was good for nothing else but pure Klebs-Loeffler infection, and that death was very commonly due to other germ infections. When a person died from a large dose of morphine, he died from the poison morphine, and not of the morphine disease, and so it might be claimed that permanganate of potassium would be useful for the morphine poisoning, but it would be of no advantage for the morphine disease. If in actual practice diphtheria was the diphtheria of the laboratory—a pure Klebs-Loeffler infection—then the statistics should show this; but Fränkel and many other authorities admitted that it rarely was such an infection. He had counted up the number of deaths occurring weekly in 1895, 1896, and 1897. Coming to the first week of November in each of these years, it would be found that in 1895, when antitoxin had been very little used, 8,270 cases had been reported (taken from the Medical Record), with 1,390 deaths: that in 1896, 9,550 cases had been reported, with 1,366 deaths—an increase of over a thousand cases; and that in 1897, 9,550 cases had been reported—200 less than in 1896—and 1,408 deaths. There were three potent reasons why, independently of treatment, the gross mortality of diphtheria should fall anywhere, viz.: (1) A definite set of cases, diagnosticated by the finding of the Klebs-Loeffler bacillus, received a definite dose of antitoxin, and these cases treated in a definite way were compared with indefinite cases in which the diagnosis was uncertain, and which had been treated indifferently; (2) the abstinence from injudicious local treatment would reduce the gross mortality; and (3) the undoubted increase in the number of mild cases reported, thus increasing the chances of a better percentage of mortality.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

DEATH OF PRINCESS MARY, DUCHESS OF TECK—TYPHOID OUTBREAKS, MAIDSTONE, LYNN, BELFAST, CLIFTON—COUNCILLORS NEW AND OLD, PROFESSOR HORSLEY, DR. GLOVER — PATHOLOGICAL SOCIETY — PROFESSOR COATS—PROFESSOR MACEWEN—DEATH OF DR. BELL FLETCHER.

London, October 27, 1897.

The bereavement of the royal family, of which you will have heard, is shared by the nation, and mourning will be generally put on for the Duchess of Teck. Her royal highness was a great favorite with the public, and the medical profession will be specially sympathetic on account of the active part she took in promoting charities. There was much anxiety about her in April when Mr. Herbert Allingham operated for umbilical hernia. She recovered well and received an enthusiastic welcome at the jubilee. On Tuesday signs of a fresh obstruction occurred, and operation showed this near the old sac. The operation was successful, but the patient sank two hours later from heart failure. The duchess had had cardiac trouble for several years.

Mr. Herbert Allingham, F.R.C.S., is the son of Mr. William Allingham, and has followed his father's specialty and assisted in the last edition of his work on "Diseases of the Rectum." He has written a work himself on colotomy, which has been well received, and at the last vacancy was elected assistant surgeon to St. George's Hospital.

Typhoid fever is still the most prominent medical topic, fresh outbreaks having increased the public alarm. The number of notifications has diminished during the week. Yesterday there were 9, and that number has not been exceeded since the 21st. On the 25th there was only 1, but the next day there were 8. Up to last night the total number attacked reached 1,757 and the deaths 116. Some of the later cases are considered to be caused by direct infection from the sick, and it is asserted that in some parts the drains are so arranged as to be a danger. The fact that one-third of the houses have not an efficient water supply is quite as important. Dr. Washbourn's bacteriological examination enables him to state that the Tutsham spring was undoubtedly polluted, and there is a strong suspicion as to some other springs which it would be well to have him investigate.

The epidemic at Belfast is reported to be of mild type, but the number of cases is serious and points to a wide distribution. Water again is supposed to be the medium of the poison. There were 142 cases under treatment in the workhouse last week, and 26 fresh cases have been admitted. Altogether more than 350 cases are reported to have occurred in the city during the last month.

There is another serious epidemic at King's Lynn, Norfolk, which at the last census had a population of 18,360. Yesterday there were 25 new cases, bringing the total up to 235. Only 4 deaths have been reported

at present, but more will doubtless follow, though the type is said to be mild.

Here, too, the water supply is impugned, and if all I hear about it is true the epidemic is considerably overdue. New works are in progress to obtain a purer supply, but months must lapse before the completion. The delay is said to have been due to opposition to the scheme from some of the rate payers, but for which the new supply would have been in use by this time.

Yet another outbreak—Clifton near Bristol, 25 cases occurring in the week. In Clifton College there are, I hear to-day, 30 scholars and one of the masters down with typhoid. The outbreak is thought to be traceable to the milk supply.

The outbreak at University College Hospital was stopped at once, but one nurse has succumbed to the disease. As soon as inspection was made, a part of the water was suspected and immediately cut off. Further examination showed how correct was the suspicion. If the same measures had been taken at Maidstone, how many lives would have been saved!

Much was made during the election of the fact that the new member, being elected for five years, would necessitate an additional election with all the expense in the future. I had intended to ask the successful candidate whether he would not obviate this by resigning when the other members had to be elected. It is the greater pleasure to find that Mr. Victor Horsley has anticipated my suggestion, and in thanking the constituency for the honor done him announced his intention of resigning at the end of the term of his fellow-representatives.

Dr. Glover has incurred the wrath of the "Corporate and Medical Reform Committee." Instead of answering the series of questions sent to candidates and also to him, Dr. Glover wrote a letter which is a scathing criticism of the gentlemen who assumed the right to ask questions of the direct representatives. Dr. Glover has no sympathy with noisy agitators and delivers some home truths. Nevertheless, I doubt his wisdom in this case, for it may be held that every constituent has a right to heckle his member, and there is something to be said in favor of the views put forward by this last self-appointed committee. Dr. Glover is a strong man, a general practitioner of the highest grade, supported on this ground by general practitioners and consultants too. He is also an able penman, a constant contributor to *The Lancet*. He belongs to a family of able men—one of his brothers is a distinguished divine.

At the opening meeting of the Pathological Society the president (Dr. Payne) remarked in his address that some criticism had been of late offered on the name of the society, but he held that the founders had no choice in the matter and no one could expect an alteration at this date. He thought the association of the idea of morbid anatomy with the term pathology regrettable as giving an incomplete view. He defended the rule of the society, that except in special cases communications could not be received unless accompanied by a material specimen of some sort. The study of disease rests on a double foundation—anatomical and functional change—and the society belongs to the anatomical investigators. Sydenham and Locke neglected the anatomical side of pathology, but had they lived at the present time they would probably have held different views. The term morbid anatomy should not be restricted to post-mortem examinations but should include the investigation of all material change of organs and tissue by all available means. He held it to be a mistake to call everything clinical if observed during life, for even physical diagnosis is related to pathology, signs becoming significant only when connected with known changes. Dr. Payne hoped the society would continue to bring the results of pathological research into relation with practical medicine, reporting them in a manner intelligible to all interested in the subject, even those not engaged in research.

Professor Coats, of Glasgow, has been granted leave of absence to spend the winter in New Zealand, in the hope of restoring his impaired health.

A difficulty has arisen between Dr. Macewen and the manager of the Western Infirmary. I should hope Scotch intelligence and fair play will be equal to solving it.

The suicides of two practitioners have occurred during the week. Prussic acid was the agent in both cases. One gentleman seems to have been driven to insanity by anxiety about his patients. He had been in the habit of taking narcotics. The other was confronted with a threat of having some charge brought against him.

The mortality from diphtheria is again increasing here.

Dr. Bell Fletcher, F.R.C.P., died on the 21st, aged ninety-one years. For many years he was the most busy consultant of the Midlands. He retired only about a dozen years ago, shortly before which I was chatting with him. He was aged then, and I hardly expected he would reach ninety. It is twenty years since he was made consulting physician to the Birmingham Hospital, after thirty years of active service. He took great interest in the other Birmingham charities and societies, supporting them by his work and his purse. He became a fellow of the London College of Physicians as long ago as 1848.

OUR PARIS LETTER.

[From our Special Correspondent.]

VERDICT IN THE TRIAL OF DR. LAPORTE — THE BOUCICAUT HOSPITAL—THE CONTAGIOUSNESS OF LEPROSY—THE FACULTY OF MEDICINE'S NEW SCHEDULE OF STUDIES—PARIS CABS—IMMUNIZING A HORSE BY MEANS OF A TYPHIC BACILLARY CULTURE.

The trial of Dr. Laporte, which has been one of the great *causes célèbres* at Paris, and has engaged lay as well as professional attention for many weeks past, has terminated. The verdict of the tribunal was three months' imprisonment, waiving execution of the penalty. Thus the doctor, while not going actually to prison, remains all the same condemned. The circumstances were sufficient to justify an absolute acquittal. In the future, physicians "caught" in remote districts in urgency cases, and without the necessary instruments to perform craniotomy prescribed in standard works on obstetrics, may hesitate to interfere. Mother and child might thus both be sacrificed. The case has aroused the old quarrel—with which you in New York are also familiar—between lawyers and doctors. A subscription has been started in favor of Dr. Laporte by the medical profession, which is likely to realize something handsome.

Madame Boucicaut, the Parisian benefactress, who died some years ago, bequeathed to the Assistance Publique large sums to found a hospital. It was expected that the great hospital of the Rue de la Convention would be ready for inauguration three months ago. The construction and arrangements were at that time not sufficiently advanced, and a delay was demanded until October 15th. It is to be hoped that this munificent gift will be entirely available and ready for occupancy before the cold weather which is coming falls too heavily upon the sick poor.

The contagiousness of leprosy is just now being discussed by Paris physicians, who seem to be pretty

united in their opinions on the subject. Dr. Besnier, an authority of the first order on skin diseases, thinks that leprosy is not always nor everywhere equally contagious. There are also many eminent observers who have concluded that the disease is not contagious at all. This is undoubtedly true under certain conditions of locality and climate. But in a disease like leprosy we must judge of the universal field comprising different parts of the globe, and what takes place in leprous districts as a whole, and not in one place, city, or special country. It will thus be seen that the contagiousness of leprosy is a fact that it is impossible to deny. Dr. Hansen, who is one of the most expert on leprosy, is a decided partisan of contagion.

The Faculty of Medicine has issued its schedule of studies and practical work for the academic year 1897-98. The lectures and different courses begin on Monday, November 1st. As it may be interesting and even profitable to the deans of medical schools, colleges, and universities in the United States to know exactly how medicine is taught in the great École de Médecine de Paris, I give the following summary, noting in the first place that the general course of study has been lengthened from four years to five, by decree of July 31, 1895:

First year—Anatomy, histology, physiology, biological chemistry, elementary general pathology (propædeutics); obligatory practical work: biological chemistry, dissection.

Second year—Anatomy, histology, external pathology, medical and surgical clinic; obligatory practical work: hospital stage, dissection.

Third year—Internal pathology, external pathology, operative medicine, obstetrics (accouchements), pathological anatomy, natural medical history (parasitology), medical and surgical clinic; obligatory practical work: hospital stage, pathological anatomy, parasitology (animal and vegetable parasites).

Fourth year—Therapeutics, hygiene, legal medicine, pharmacology, botanical materia medica, medical and surgical clinic, special clinic, obstetrical clinic, chemistry and physics applied to hygiene and therapeutics, history of medicine and surgery; obligatory practical work: special hospital stage; elective practical work: botanical materia medica, chemical materia medica, pharmaceutical materia medica, bacteriology, etc.

Fifth year—Elective practical work: botanical materia medica, chemical materia medica, pharmaceutical materia medica, bacteriology, etc.

Several of the Paris cab companies are still sending out open carriages, although the weather is much colder and winter is approaching; in thus disregarding the public health, they are exposing their occupants to severe colds, bronchitis as well as pneumonia, and furnishing cases for the doctors.

Dr. Van de Velde reported at the last meeting of the Biological Society that at Louvain they have been for two years past immunizing a horse by means of cultures of a single variety of the bacilli of typhoid fever.

Compression of the Sciatic Nerve.—Dr. Arullani (*Gaz. d. Osp. e d. Clin.*, February 28th) has improved upon digital compression for sciatica by substituting a double-pad apparatus for the fingers. He has applied it to forty patients: two were improved, six were unimproved, and thirty-two were cured. He recommends compression of the popliteal cavity besides the point where the sciatic nerve emerges in the thigh. The general condition of the patient and the location of the pain are better criteria for the success of the measure than electric tests or the duration of the affection.

Surgical Suggestions.

The Treatment of Deep-Seated Thoracic Aneurisms.—Dr. Clarke, in the *Clinical Journal*, December 9, 1896, says that the most essential points in the treatment are rest and restriction of the amount of fluid taken. The diet should be light and easy of digestion, the amount taken at each meal being small. It is difficult to get patients to remain on the rigid Tufnell diet. The amount of fluid taken can gradually be reduced to a pint in twenty-four hours without great discomfort to the patient at rest. Rest should be absolute in the recumbent posture. This treatment should be carried out for at least three or four months, when if the patient shows decided improvement he may be allowed to sit up in bed and then gradually to move about. Dr. George Balfour recommends iodide of potassium as the most valuable medicine, although its exact mode of action is uncertain. It is administered every eight hours at first, in a dose of seven or eight grains, and gradually increased so long as there is no acceleration of the pulse, until fifteen or twenty or twenty-five grains are given at each dose. Dr. Clarke cites two cases of aneurism of the transverse aorta cured in this way.

Local Anæsthetic.—For a five-minute effect apply:

R Chloroform	10
Ether	15
Menthol	1

LI GERANT *and* PIERRE.

Indications for Hysterectomy.—Hysterectomy is advisable in the vast majority of cases of fibroid tumors of the uterus: 1. In all cases in which there are urgent symptoms from pressure, or in which there are urgent subjective symptoms referable to the uterus. 2. In all fibrocystic, œdematous, and myomatous tumors. 3. In all tumors of intraligamentous or subperitoneal growth. 4. In all large tumors which have become decidual abdominal.—PENROSE.

To prevent ankylosis after phlegmon of the hand, begin active and passive motion from the beginning of the process of repair. Joints are to be manipulated for several minutes at a time for two or three hours a day.

Open Tendon Injuries.—Dr. Carl S. Haegler (*Beitr. zur klin. Chir.*, xvi., No. 2) reports one hundred cases treated at the surgical clinic of Professor Socin. The preparation for operation is as follows: The parts are thoroughly cleansed and disinfected by sublimate solution, 1 to 5,000. An elastic bandage is applied centrifugally to the uplifted arm, and left in place until the dressing of the wound. The hand of the assistant is not so efficient as these bandages. The bloodless method is not used. Operations are performed without general anæsthesia, except in the cases of children. The bandage dulls the pain, which at most is not great. In suturing the skin or enlarging the wound cocaine is sometimes used. The search for tendon ends is sometimes difficult. Sharp hooks should not be used. When single tendons of the flexor communis digitorum are divided, Filiget recommends hyperextension of the adjoining finger as very successful in causing the tendon end to appear in the wound. When it is necessary to make an incision, an enlargment of the original wound is best. Starting from one angle of the original cross-wound, an incision is made parallel and to one side of the injured tendon; turning back this flap gives ample room to find the tendon. By this incision adhesion of the tendon sheath to the skin cicatrix is avoided as much as possible. After the ends are approximated

comes the question of suture. An ideal operation must completely approximate the divided ends, the ends must be in accurate apposition, nutrition must be disturbed to the least extent, the operation must be simple and quickly performed. A simple method nearly related to that of Schwarz has been used in the great majority of cases. Through the proximal end a thread is passed which serves as a tractor, and with the same needle the distal end is pierced. To avoid a change of position on the part of the surgeon, and on account of the unusual direction in which the needle must be passed, the distal end is grasped with a toothed forceps and twisted 180 degrees on its long axis, and after the needle is passed allowed to return to its normal position. In order to bring the edges into close apposition, one or two sutures are introduced, crossing over the first suture at right angles and piercing each end beyond it. Dry sterilized catgut as a suturing material has given the most favorable results. After suturing the wound is wiped out dry, thoroughly disinfected, and in the majority of cases the skin sutured. The wound is never drained; a gauze dressing is applied and the hand and wrist are immobilized by a zinc splint and starch bandage. The patient should be seen daily and closely watched for any sign of trouble. Phlegmonous inflammation ensued in eleven cases. Even though union be prevented by suppuration in wounds of the extensors over the hand and fingers, function may be in some measure restored by continuous fixation of the injured finger in an extended position. As a general rule, mechanical treatment should be begun in the third week in injuries of the extensors; in flexor injuries, during the fourth or fifth week. Every case must be treated on its own merits. The time of beginning must depend on the extent of the injury, the course of healing, the age and intelligence of the patient. Massage of the forearm should commence after the first dressing, viz., in from ten to fourteen days. The splint, which should reach to the elbow, is now removed and replaced by a shorter one, and the forearm is daily massaged. An elastic cord, one end of which is fastened to the wall or table while the other end is grasped by the patient, is a device which has given good results. Later a faradic current is applied. Of the one hundred cases thirty-five were of flexor injuries, and in sixteen of these, or forty-six per cent., the treatment gave a good functional result. In eleven instances function was restored from one-half up to three-fourths of the normal. In eight cases there was almost total loss of function, due mostly to phlegmonous inflammation. In some there were firm adhesions. Some of the cases could not be followed up. The prognosis differs greatly according to the situation of the injury. In the lower third of the arm there is often an extensive injury to the neighboring muscles and consequent adhesion of the tendon cicatrix. Atrophy of the muscles intensifies the bad results. Massage must be begun very early. Injuries over the wrist-joint are to be dreaded for the frequent serious complications due to the anatomical relations. Excellent results were obtained in a few of these cases. In injuries over the metacarpus the prognosis is bad. In phalangeal injuries the prognosis is not good, though function is not always destroyed. Prognosis in division of the flexor profundus over the last phalanx is absolutely bad. The prognosis in injuries of the extensors is very favorable. The search for tendon ends is not difficult, and, as the tendons do not glide in tubular sheaths like the flexors, the function is not so much affected by adhesions. Sixty-five cases were treated, and fifty, or seventy-seven per cent., yielded a perfect result. Simultaneous opening of the joint occurred in thirty-seven per cent. of the cases, but this complication did not prevent healing and restoration of function.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 13, 1897:

	Cases.	Deaths
Tuberculosis	195	89
Typhoid fever	18	9
Scarlet fever	124	11
Cerebro-spinal meningitis	6	3
Measles	181	10
Diphtheria	115	20
Laryngeal diphtheria (croup)	6	4
Chicken-pox	19	0

A Delicate Instrument.—A microtome for making sections of the entire human brain is being constructed on the pattern of the "automatic precision microtome" recently brought out. The manufacturers expect that the new instrument will make large sections of greater thinness and accuracy than it has been possible to obtain hitherto.

Hot Weather and Crime.—A curious investigation has been undertaken by the officers of the weather bureau in the United States. Col. Willis Moore originated the investigation, believing that there is a close connection between the condition of the atmosphere and the physical and moral welfare of the people. The results of these investigations are as follows: Taking in the whole country during January, February, and March, there were in even numbers 1,200 suicides reported in the United States; while in July, August, and September there were 1,600. In the same period there were 1,700 murders in the cold term, as compared with 2,500 in the three hot months. There were 50 persons hanged or lynched in the three cold months, and 113 hanged or lynched in the three hot months. The investigation is said to have been instituted with the idea of issuing in the near future warning of the approaches of crime waves.—*Sanitarian.*

Chief Nervous Affections of Alcoholism.—Alcoholic coma, delirium tremens with visual hallucinations, restlessness, fear, tremor, and failure of sleep and appetite, acute traumatic delirium occurring after wounds, *mania a potu* without tremor but with raving and violence, multiple neuritis with loss of knee-jerks and tenderness over the calves and nerve trunks, chronic insanity, showing in different cases either physical, mental, or moral degeneration especially prominently.—SHORT.

Typhoid.—Dr. Hare has recently published a statistical review of all the cases (one thousand nine hundred and two) treated during the past ten years by the Brand method in the hospital of Brisbane, Australia. The mortality has been 7.5 per cent.; for the five years preceding the introduction of the method it was 14.8 per cent.—*La Méd. Mod.*, May 29, 1897.

X-Rays Applied to the Stomach.—MM. Roux and Balthazard have applied the *x*-rays to a man after the ingestion of a certain quantity of bismuth. Experiments made successively on frogs and dogs have clearly shown the form of the stomach at the time of digestion. They have seen that the stomach of man, like that of the frog and dog, presents two distinct parts. The larger serves as the reservoir for the food ingested; the smaller, which is the prepyloric portion of the stomach, is the only part that undergoes any movement. These movements are violent and peri-

staltic, contrary to the opinions advanced by Hofmeister and Schutz; it forces little by little into the duodenum the matter that has accumulated in the stomach. *Sanitarian.*

Scurvy.—The experience of Nansen's expedition has given rise to discussion on the causation of scurvy. Torup believed that it is due to ptomains generated in badly preserved foods, and great care was taken in selecting the preserved foods on which Nansen's party lived, with complete success. A. E. Wright shows that the herbivora have no protection against acid administration in their food, and quickly die if it is given artificially. In the carnivora there is a provision for neutralizing acid by the waste ammonia of the body. In the human being this is less perfect, and if all vegetable food is cut off we should get an acid intoxication. But Nansen has shown that fresh blood and raw flesh are an antidote, and Wright says that this is easily explicable, because blood is not only alkaline, but it produces salts akin to those obtained from lemon juice. However, as the explorers were often without fresh blood and flesh much of their time, the immunity may have been after all due to the carefully preserved foods which they consumed.

Tobacco Smoking and Genius.—In his work entitled "Introduction à la Médecine de l'Esprit," M. Maurice de Fleury devotes a chapter to tobacco smoking from the point of view of men of letters. In the first place Balzac professed a fanatical aversion to tobacco in all its forms. In his books he invariably covers with contempt the characters whom he portrays as smokers. Next Victor Hugo; he likewise was no smoker. One evening at his house one of the guests was vaunting the beneficent effects of a cigarette on a creative imagination. The great poet at once rose in revolt. "Believe me," said he, "tobacco is more hurtful to you than beneficial. It changes thought into reverie." Finally, Zola says: "I have no definite opinion on the question. Personally I gave up smoking ten or twelve years ago on the advice of my medical attendant, when I believed myself to be affected with heart disease. But to suppose that tobacco exercises an influence on French literature raises a question of such magnitude that the most rigid scientific proof alone could dispose of it. I have known great writers who smoked without stint, but their intellects were not one whit less acute. If genius be neurosis, then why seek to cure it? Perfection is such a very tiresome thing that I very often regret having broken myself of the tobacco habit."—*Lancet.*

Health Reports.—The following statistics concerning yellow fever, small-pox, and cholera have been received in the office of the supervising surgeon-general of the United States Marine Hospital service, during the week ended November 13, 1897:

YELLOW FEVER, UNITED STATES.

		Cases	Deaths
Alabama, Decatur	November 1st	2	
Greensboro	November 1st	1	1
Mobile	November 6th to 12th	2	1
Montgomery	November 6th to 12th	1	1
Selma	November 10th	1	
Whistler	November 6th to 12th	1	
Louisiana, Baton Rouge	November 11th	1	
New Orleans	November 6th to 12th	84	36
Mississippi, Biloxi	November 6th to 11th	11	1
Clinton	November 12th	2	
Edwards	November 6th and 12th	6	
Pascagoula	November 6th and 12th	1	
Scranton	November 7th and 13th	4	1
Tennessee, Memphis	November 4th to 8th	1	

YELLOW FEVER—FOREIGN.

Cuba, Guantanamo	September 1st to 30th		
Matanzas	October 20th to November 3d		
Sagua la Grande	October 23d to 30th	49	
Jamaica, Bath Fever	October 30th to end of month		
Kingston	Last week in October to date		
Manchester	Last week in October to date		
Port Antonio	July 23d to October 23d	4	
St. Elizabeth	July 23d to October 23d	1	
Nicaragua, Leon	October 1st		
Port Rico, Cape Haytien	November 6th	Yellow fever reported.	

SMALL-POX—FOREIGN.

Bohemia, Prague	October 17th to 23d	1	
China, Hong Kong	September 25th to October 2d	1	1
Cuba, Sagua la Grande	October 23d to 30th	46	1
Japan, Fukushima Ken	October 1st to 10th	4	
Kagoshima Ken	October 1st to 15th	1	
Miyagi Ken	October 1st to 15th	1	
Nagasaki Ken	October 1st to 15th	1	
The Hokkaido	October 1st to 10th	7	
Scotland, Edinburgh	October 16th to 23d	1	
Glasgow	October 16th to 23d	4	
U.S. of Colombia, Cartagena	October 5th to 12th	7	

CHOLERA—FOREIGN.

India, Madras	September 25th to October 1st	1
Japan, Tokio Fu	October 1st to 10th	3

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

LIPPINCOTT'S POCKET MEDICAL DICTIONARY. Edited by R. W. Greene. 16mo, 421 pages. J. B. Lippincott Company, Philadelphia.

STIRPICULTURE. By Dr. M. L. Holbrook. 12mo, 192 pages. M. L. Holbrook & Co., New York. Price, $1.00.

THE LIVING SUBSTANCE. By G. F. Andrews. 8vo, 176 pages. Ginn and Company, Boston.

PIONEERS OF HOMŒOPATHY. By Dr. T. L. Bradford. 8vo, 677 pages. Boericke & Tafel, Philadelphia. Price, $3.00.

PRACTICAL DIAGNOSIS. Second Edition. By Dr. H. A. Hare. 8vo, 618 pages. Illustrated. Lea Brothers & Co., New York.

WOUNDS IN WAR. By Surg.-Col. W. F. Stevenson. 8vo, 433 pages. Illustrated. Longmans, Green & Co., New York.

SPINAL CARIES. By N. Smith, F.R.C.S. Ed. Second Edition. 8vo, 153 pages. Illustrated. Smith, Elder & Co., London. Price, 5s.

ANIMAL ELECTRICITY. By Dr. A. D. Waller. 12mo, 144 pages. Illustrated. Longmans, Green & Co., New York.

A HANDBOOK OF MIDWIFERY. By Dr. W. R. Dakin. 12mo, 645 pages. Illustrated. Longmans, Green & Co., New York.

CLINICAL DIAGNOSIS. By Dr. C. E. Simon. Second Edition. 8vo, 563 pages. Illustrated. Lea Brothers & Co., New York.

TEXT-BOOK OF NERVOUS DISEASES. By Dr. C. L. Dana. Fourth Edition. 8vo, 640 pages. Illustrated. William Wood and Company, New York. Price, $3.50 net.

A TREATISE ON GYNÆCOLOGY, MEDICAL AND SURGICAL. By Dr. S. Pozzi. Third Edition. Translated by Dr. B. H. Wells. 8vo, 950 pages. Illustrated. William Wood and Company, New York. Price, $5.50 net.

TRANSACTIONS OF THE COLORADO STATE MEDICAL SOCIETY. 1897. 8vo, 470 pages.

INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, UNITED STATES ARMY. Second Series. Vol. II. B—Bywater. Royal 8vo, 954 pages. Government Printing Office, Washington, D. C.

INTERNATIONAL CLINICS. Vol. III. Seventh Series. 1897. Edited by Dr. J. Daland, Dr. J. M. Bruce, and Dr. D. W. Finley. 8vo, 360 pages. J. B. Lippincott Company, Philadelphia.

MORAL PRINCIPLES AND MEDICAL PRACTICE. Rev. Charles Coppens. 8vo, 222 pages. Benziger Brothers, New York. Net, $1.50.

MATERIA MEDICA FOR NURSES. By Lavinia L. Dock. Third Edition. 12mo, 240 pages. G. P. Putnam's Sons, New York.

A MANUAL OF MENTAL SCIENCE. By Jessie A. Fowler. 12mo, 233 pages. Illustrated. Fowler & Wells Company, New York.

ATTENDANTS. By H. Crutcher. 8vo, 131 pages. Illustrated. Hahnemann Publishing Company, Chicago. Price $1.50 net.

PRACTICE OF SURGERY. By H. R. Wharton and Dr. B. F. Curtis. 8vo, 1,240 pages. Illustrated. J. B. Lippincott Company, Philadelphia, Pa.

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Winter Health Resorts.

INTELLIGENT people everywhere recognize the importance of pure air and sunshine as the essential means of acquiring a healthy constitution and maintaining it, and as indispensable for restoring it when from any cause it has become impaired. But it is only just now, as it were, that people have begun to learn the twofold effect of a bountiful supply of pure air and sunshine; that, while these agents are essential to the procurement and maintenance of human health, they are inimical to microbic life, and to none more so than to the tubercle bacillus; and conversely, that climatic or any other conditions restricting the needful supply of pure air and sunshine are promotive of microbic life, and of none more so than of the tubercle bacillus.

Nevertheless, the rigor of the winter climate in the greater part of the northern United States, where pulmonary consumption extensively prevails, is such as frequently to render the maintenance of the primary conditions essential to health impracticable for those who most need them—those who are afflicted with or predisposed to consumption.

Although the benefit to be expected from a change of climate under the circumstances indicated is by no means limited to persons so afflicted or so predisposed, the best test of the benefit to be expected from a health resort is the observed relation that it holds to consumption and its favoring conditions, as compared with the locality to be abandoned. This test is justified by the fact that consumption is less amenable to mere medical treatment than any other disease, and by the excess of the mortality caused by it over that of any other disease in districts where it prevails. Moreover, places relatively exempt from consumption are ordinarily correspondingly exempt from other diseases propagated by bacteria, and *vice versa*.

But every observant physician knows that the cure of consumption by change of climate depends upon the promptitude with which the change is made—that it should be made at the earliest possible period after the incipient symptoms have been discovered, when the constitution is otherwise sound and the physiological functions are regular. In such cases a cure is frequently effected by a judicious change of climate, and in those predisposed to consumption, before it has been developed by unfavorable conditions and exposure, resort to some place where there are a large preponderance of sunshiny days and a temperature that will admit of much outdoor exposure, where it is neither too cold nor oppressively warm, where the food is wholesome and the water pure, where commodious and well-ventilated bedrooms and healthful surroundings are obtainable, the disease is preventable.

Such resorts, approximately, it is the purpose of this paper to designate.

OCEAN AND HIGH-ALTITUDE RESORTS.

Recent knowledge of microbic life, as related to the purity of the atmosphere, justifies the inference that the benefit to consumptives derived from sea voyages or from resort to high altitudes is independent alike of the extreme density and moisture of the ocean atmosphere in the one case, and of the rarefaction and dryness of the air in the other. In both cases the air is inimical to tubercle bacilli, as it is also inimical to other bacilli—indeed, to all microbic life. And, barring the preventable conditions of a foul bilge and inadequate ventilation of staterooms and other sleeping-quarters on board ship; close bedrooms, defective house drainage, unhealthful surroundings, and dust—barring these conditions respectively, ocean atmosphere and high altitude are alike propitious and commendable to persons afflicted with or predisposed to pulmonary consumption.

Ocean air, however, it should be understood, is not the air of the seacoast, but of the open sea, sufficiently distant from the land to be free from all contamination. It is more equable and, in corresponding latitudes, excepting the tropics, warmer than over the land; and within the tropics, though warm, is never sultry, as it is at the same degree of temperature on the land, nor is the temperature so high. In the tropics, the range of the thermometer at sea is from 72° to 84° F., and rarely as high as 86° F. at midday. The mean relative humidity is about 73.5 per cent. (100 representing complete saturation). The humidity is usually a little greater in the night than during the day, but commonly is less at all times than that of the air of seacoast places.

Besides the excess of moisture, as compared with that of the land distant from the seacoast, the ocean air always contains some sea salt, although, excepting in the trade winds or in gales, in infinitesimal quantity; never in such excess even in the trade winds or gales as to be otherwise than a healthful stimulus to respiration. It also possesses properties beneficial to certain specific diseases.

The special advantages of an ocean atmosphere are:

1. Its entire freedom from the dust common to domestic conditions—particles of tissue wastes of all sorts, hair, straw, feathers, cobwebs, insects, dried sputa, etc.; from traffic dust—the wear of travel and friction; from all insoluble and irritating grit wafted from paved streets, houses, walls, dusty roads, or sandy plains. It is air, in short, that contains a maximum of the elements essential to life and health, and a minimum only or none at all of the deleterious substances always floating, in greater or lesser degree, in the lower stratum of the atmosphere over the land.

2. Complete change of scene and rest; relief from all sources of excitement and worry—newspapers, telegrams, messenger boys, letters, expectations, and all sorts of indescribable turmoil. And the passing breeze is not from just over the marsh or stagnant pond, nor is it from the malodorous tenement-house district; it bears no foul emanations and no disease germs. Every breath of it is brand new, and when exhaled it never hovers round to taint the next inspiration, but is wafted away and speedily transformed into the pure elements of the atmosphere.

Thus inhaled throughout the day, the pure soft air soothes the nerves, invigorates the functions, promotes sleepiness, and welcomes repose. Sound slumber supervenes, and with no business appointments to be met

abundant time is taken for breakfast, dinner, and supper—with an invigorated appetite and improved digestion.

The invalids to whom an ocean atmosphere is most commendable are pointed out by that which is just above stated—consumptives in the incipient stage and persons predisposed to consumption; persons of scrofulous diathesis; persons afflicted with nervous *complaints*—not organic nervous diseases, but the easily recognized conditions of overwork though often undefinable, the result of physical or mental nervous strain, anxiety, worry, irritability, debility, nervous breakdown, insomnia; and persons afflicted with chronic nephritis.

But firstly of—

Inland and Seacoast Resorts.

Winter resorts—resorts for invalids that will permit the utmost outdoor exposure—are not to be found north of or even in the vicinity of New York City. It may be remarked, however, in relation to the constant danger of nervous or physical breakdown of those who are too intensely engaged in the struggle for preeminence in city occupations, that the difference in the temperature of the atmosphere, or mere change of place, is of much less significance to them than *rest*—rest, though it may be but for a week or two, or for even a few days at a time, with such a total relinquishment of their occupations and under such conditions as will admit of recuperation.

Lakewood, N. J., about two hours from New York, situated on a sandy soil, seventy feet above sea level, in the midst of a pine-woods region, is an admirably appointed resort for rest and recuperation, with abundant hotel accommodations at moderate rates.

Atlantic City, ninety minutes from Philadelphia and four hours from New York by railroad, besides being a deservedly popular summer resort, possesses some unusual advantages as a winter resort, considering its latitude. The trend of the coast at this point is such as to bring it almost directly in the face of the westerly and northwesterly winds, which considerably modify the temperature of the ocean atmosphere. According to the records of the United States signal station at Atlantic City, as published several years ago, the average mean temperature for December, January, February, and March for a number of years was 35.8° F. The prevailing winds in winter are from the west and northwest. Several hotels are kept open during the winter, at moderate rates.

Old Point Comfort, with its delightful Hotel Chamberlain, is the favorite winter resort for those not caring for a more southern climate. The hotel is admirably equipped with every appurtenance promotive of comfort and pleasure—open-air pavilions over the water, verandas inclosed in glass, enabling invalids to enjoy the sunshine and water view without exposure; in short, everything calculated to make a sojourn here pleasant. As a place of rest for the overworked and those suffering from insomnia and worry, Old Point Comfort with all its attractions is commendable.

Virginia Beach, thirty miles from Old Point Comfort and six miles south of Cape Henry, comprehends similar conditions and advantages, with the addition of pine woods, which exercise a modifying influence on the climate. And here it may be remarked of pine forests generally that they add to the salubrity of their region. Even the great Dismal Swamp forests of Virginia and North Carolina are known to be healthful in the interior, while on its borders or in portions where the trees are felled it is, like the seacoast, commonly insalubrious. Humid air charged with miasmatic emanations is deprived of them in passing through a pine forest. At Virginia Beach the Princess Anne Hotel, with every modern convenience, is situated within a few yards of the ocean while at the rear of the hotel is the dense pine forests.

Old Point Comfort and Virginia Beach, as well as Norfolk, are accessible from New York by the Old Dominion Steamship Company's line. Fares from New York to Old Point, $8; round trip, $13. The same to Norfolk. To Virginia Beach, $8.50; round trip, $13.50. Hotel rates, $3 to $5 per day. The Old Dominion line dispatches one of its comfortable and commodious ocean-going steamers every week day for these Virginia ports, and the night at sea generally proves a delightful break in the journey.

"The Warm Springs Valley" of Virginia derives its popular name from the numerous supplies of thermal mineral waters which it affords. It is a valley of about two miles in average breadth and nearly thirty miles in length, parallel with the main Alleghany divide, between towering mountains, from the crest of which, four thousand feet above sea level, the intervening stretches of country present a marvellous panorama of mountain scenery.

The altitude of the valley (about eighteen hundred feet) and its protection by the surrounding mountains from wind storms and sudden changes, combine to produce a temperature relatively mild for the winter in this latitude, and delightful for the rest of the year. Moreover, there are at short distances apart many gaps through the mountains, extending quite to the foot of the ridge, and these present picturesque gorges, some with narrow roads, but many with creeks winding their way to Jackson River, a tributary of the James. This somewhat peculiar topographical feature insures excellent drainage of the soil and atmospheric circulation, an exceptional advantage not often found in narrow valleys hemmed in by lofty mountains, which exclude the sun's rays for a considerable portion of the day.

The Hot Springs lie at the head of one of these intersecting gorges, and Cedar Creek, which is formed by the united body of their waters, rushes down the steep declivity of the gorges, so as to clear the main valley within a few feet from their sources. Twelve or fifteen miles from Hot Springs the valley terminates abruptly by merging into that of Jackson River, but at an elevation of about two hundred feet above the river; and just here the Falling Springs Creek, descending from the Warm Springs Mountain on the east, crosses the road, and thus presents the picturesque spectacle of an unbroken fall from the top of the precipice to the valley beneath. This miniature cataract, miniature as to breadth and volume of water, is half as high again as that of Niagara, and was considered by Mr. Jefferson worthy of description in his "Notes of Virginia."

The waters of these springs—Hot and Warm Springs (Bath County)—have been analyzed by several distinguished chemists, with nearly identical results. They are classifiable chiefly as alkaline-calcic. The Boiler Spring, in particular, has been not inaptly compared with the springs at Aix-les-Bains, in France, though it has a slightly higher temperature—Boiler Spring, temperature, 108° F.; Aix-les-Bains, 103° F.

	Grains per gallon.
Magnesium sulphate	8.476
Magnesium carbonate	3.018
Calcium sulphate	1.895
Calcium carbonate	23.076
Sodium sulphate	3.084
Potassium chloride	.530
Silica	1.946
Total	42.014

Carbonic acid is given off freely, but is not here measured.

The hotel accommodations and the facilities for

using the waters are abundant and excellent, and at moderate rates.

A branch railway, twenty-five miles in length, has recently been built from Covington, Va., to the Hot Springs, and direct connection is made with through trains east and west bound on the main line of the Chesapeake and Ohio. The Warm Springs Valley can now be reached by rail in fourteen hours from New York, twelve hours from Philadelphia, nine hours from Baltimore, eight hours from Washington and Richmond, ten hours from Norfolk, and twelve hours from Cincinnati. Arrangements can be made when desired to run through cars from any of the cities named, or from points beyond, direct to the Hot Springs.

Especial attention is invited to the fact that the Hot and Warm Springs Valley lies midway between New York and Cincinnati, and is reached in one night's ride from either point.

For many persons a most restful change from the monotony of daily life may be obtained by a trip on one of the many stanch and beautiful steamships of the Atlantic coastwise routes, or the trip may be extended to such nearby places as Bermuda, the Bahama Islands, Jamaica, or still farther to the Windward Islands, the most eastwardly of the West India group.

A trip to Cuba just now naturally does not present much attraction. We have already referred to the steamers of the Old Dominion Steamship Line to Norfolk. In addition to these there are steamers running regularly every week and oftener to Charleston, to Savannah, and to Jacksonville, Fla.

The Bermudas are within forty-eight hours of New York, in the same latitude, 32° 45′ N., as Charleston, S. C., and six hundred miles east of that city. There are three hundred and sixty-five islands in the group, counting some very small islets, all formed by the irregular crests of a bank of coral and separated by narrow channels. The most of them are covered with semi-tropical vegetation, and some of them are remarkably beautiful and picturesque. Only about twenty of them are occupied as dwelling-places, but all are delightful points for boating and fishing. Bermuda, the principal member of the group, is sixteen miles long by one and one-half miles wide. Hamilton, the chief town, has about eight thousand inhabitants, and several excellent hotels, at from $2 to $4 a day, or $12 to $21 a week; and a number of good boarding-houses, at $10 to $12 a week. St. George, on an island of the same name and next in importance to Bermuda, approximates Hamilton in the excellence of its hotels and boarding-houses, and at similar rates. St. David's, Somerset, and Ireland are also important islands, and are alike enjoyable for the beauty of the scenery and the excellence of the roads. There are no mountains to climb and no rivers to cross in Bermuda—the greatest altitude being but about two hundred feet above sea level; but there are many rocky towers and precipitous roadbanks and as many deep cuttings needful to reach the beautifully level roadbed—hard and generally without dust. There is no end to these roads (altogether they are said to be nearly two hundred miles in length), at one instant winding through artificial gorges whose banks are overhung by a profusion of trailing plants, maiden-hair ferns, and fragrant flowers, and at the next, with glimpses of the sea and the islets scattered round flashing into view, revealing new pictures in the ever-changing beauty of the scene.

These islands are reached by the steamers of the Quebec Steamship Line.

Nassau, the capital of the Bahamas—the most northern of the West India Islands—situated on an elevation about seventy-five feet above sea level, in latitude 25° 5′ N., has been long and justly regarded as a congenial winter resort for consumptives, for those affected with nervous disorders and breakdowns, and for invalids with Bright's disease. The streets are of the natural limestone rock, and there are several interesting drives about the island. There are a tropical profusion of flowers and trees, a public library, museums, and several churches. The Royal Victoria Hotel is open during the winter and has an excellent reputation; $2.50 to $4 a day. Harbor Island, a few miles distant from Nassau, is also a place of good repute, but the writer has no knowledge of its hotel accommodations. The mean winter temperature of Nassau is about 70° F.; the range is from 64° to 82° F. It is accessible by means of the Ward Line, 113 Wall Street, New York. As the fleet of this line is large, it makes weekly sailings and excursions to Nassau for $50, to Mexico for $100, to Cuba for $60. Another excursion of twenty-two days to Nassau and to the south side of Cuba is offered by this company, the entire cost being $100, including board while in port.

Jamaica is the largest of the British West India Islands, comprehending an area of forty-four hundred and forty-two square miles, and a population of about six hundred thousand. The general appearance of the island is exceedingly beautiful, but not all of it is healthful. The Blue Mountains extend through its entire length; indeed, the whole island is wellnigh comprehended in them, for, on all sides from the water's edge up, the ascent is in ridges and hills of continuously increasing altitudes, intersected by vales and streams with more or less abrupt precipices and overhanging cliffs—all covered with richest tropical groves and undergrowth, exhibiting the most romantic scenery, and culminating at a height of seventy-three hundred feet above sea level, yet never capped with snow.

Between the mountain ranges and ridges there are extensive plains and spacious savannas, whose water-logged soil, like that along a considerable portion of the extensive coast line of over five hundred miles, is more or less productive of malarial fevers. But these localities are easily avoided, as they should be, by resort to some of the many healthful localities on the mountain slope, at an altitude of twenty-five hundred feet and upward, entirely exempt from malarial diseases. At this altitude (twenty-five hundred feet) the winter range of temperature is from 55° to 65° F. It is about one degree lower for every three hundred and forty-five feet increase of altitude. Mineral springs have been discovered in several localities in the island; with but one exception there is no published analysis of the waters, and this is of the "sulphurous sodic-calcic thermal springs," near the village of Bath, about twenty miles from Kingston, reached by an excellent road through beautiful scenery. The waters are said to resemble those of Bath in England, and to be of much value in the treatment of rheumatism and gout. The published analysis gives the following chemical constituents in one gallon of the water:

Chloride of sodium	13.84
Chloride of potassium	0.32
Sulphate of calcium	5.01
Sulphate of sodium	6.37
Carbonate of sodium	1.69
Silica	2.72
Oxide of sodium combined with silica	1.00
Organic matter	0.25

The springs are situated in a deep ravine about one and one-half miles from the village, accessible by a good road, where bathhouses have been constructed for those who wish to use the waters. The island is intersected by splendid macadamized roads, besides railways, and, considering the large number of accessible and well-appointed localities, with good hotels

at $3 to $4 a day, at various altitudes and with healthful surroundings, it is, taken altogether, a winter resort of exceptional excellence. On account of the rainfall, however, which is great at other seasons, the preferable period for enjoying the climate of Jamaica is precisely that which is the most convenient for rounding out this winter voyage—January to March, the relatively dry season.

This island is reached by steamers of the Quebec Steamship Company, and also by the Atlas Line from New York.

For those who have the time and inclination, a trip by the steamers of the Quebec Steamship Company to the Windward Islands is extremely delightful. The first stop of this line is at Santa Cruz. Next comes the Island of St. Thomas. These two islands are under the Danish government. "English spoken."

Then comes St. Kitts, an English island of great beauty and fertility, with good hotel accommodations. Sixty miles east the steamer touches Antigua, also under the English government. Then come Guadalupe, Dominica, and Martinique. Santa Lucia comes next, and then Barbadoes, the most eastward of the Windward Islands, in latitude 13° 10′ N., and longitude 59° 32′ W. Steamers of this line often touch at other smaller islands. The rates of passage include living on the steamer from the time one leaves New York until he returns.

Still another but shorter voyage is by the vessels of the Red "D" Line to Curaçoa and Caracas, both interesting and healthful winter resorts. Curaçoa is a Dutch island, in latitude 12° 20′ N., about fifty miles from the coast of Venezuela, with a climate very similar to that of Barbadoes. Caracas, the capital of Venezuela, is in latitude 10° 30′ N. The city is admirably laid out, radiating from a beautiful park in the centre of the town and following the cardinal points of the compass. There are many fine buildings and magnificent suburbs, intersected by good roads.

The winter climate is agreeably cool and equable. The thermometer averages about 65° F. during the night, and in the early morning ranges from 50° to 55° F.; it rarely rises to 75° F. at midday. Few climates present such favorable conditions in altitude and temperature.

There are several excellent hotels, at from $2.50 to $4 a day, where English-speaking servants are employed. Carriage hire is regulated by tariff—thirty cents for each person to any part of the city. Street-car routes from the railway stations pass all of the hotels.

Rates of passage: New York to La Guayra, $80; to Curaçoa, $70; round trip, $144.

The Carolinas.

The middle section of North Carolina ranges from six hundred to fifteen hundred feet above sea level. It is, for the most part, covered with pitch pine, and is remarkably healthful. The mean winter temperature is from 40° to 45° F., and the relative humidity 69 per cent.

Southern Pines, seventy miles beyond Raleigh, on the Seaboard Air Line, from Norfolk, is situated at an elevation of about six hundred feet above sea level, in the midst of the pine-wood region. The average winter temperature is 44° F., and the atmosphere relatively dry. It is a new resort and yet in process of improvement. The Piney Woods Inn is the principal place at which to stop.

Pinehurst, six miles west of Southern Pines (connecting by electric cars), possesses the same advantages of local and climatic conditions, with more advanced improvement round about, and hotel accommodations about the same. There are excellent roads, reasonable carriage rates, and interesting forest drives all about both these places.

Asheville, a charmingly situated city, twenty-two hundred and fifty feet above sea level, enjoys an admirably pure atmosphere, though it is rather cold for very sensitive invalids. Mean winter temperature, 37.8° F.; relative humidity, 69.3 per cent. It possesses all the advantages of the most highly favored winter resorts of southern Europe, besides the additional advantage of freedom from the sudden changes of temperature common to those resorts. Hotels are commodious and excellent, at from $3 to $5 a day. The drives and scenery are superb. Asheville is reached by six routes of travel, and each of them has features interesting to tourists.

First, *via* the western North Carolina division of the Richmond and Danville Railroad, seventy-nine miles from Salisbury, *Morganton* (Hunt House) is a popular resort, eleven hundred feet above sea level, with charming scenery. Twenty-five miles farther on is *Linville Gorge*, where the Linville River bursts through the Linville Mountains. The gorge is fifteen miles in length, and the heights which overshadow it are not less than two thousand feet. The river plunges over a precipice one hundred feet high and one hundred and fifty feet broad, and then rushes forward over a bed of rock. Cliffs worn by the ceaseless action of the water into the most fantastic shapes hang over it, detached masses strew the channel, and the tumult of its fretted waters ceases only when pauses now and then occur in crystal pools of placid gentleness. The route continues exceedingly picturesque until it pierces the Blue Ridge by the Swannanoa Tunnel, eighteen hundred feet long and twenty-seven hundred feet above sea level, and then gradually descends into the elevated basin in which Asheville lies, along the bank of the Swannanoa, one of the loveliest of North Carolina rivers.

Second: From Spartanburg, S. C., seventy miles by the Asheville and Spartanburg branch of the Richmond and Danville Railroad.

Third: From Charlotte, N. C., by railway to Statesville on the Western North Carolina Railway; or to Shelby, on the Shelby division of the South Carolina Railway, and thence to Lincolnton and Hickory, on the Western North Carolina Railroad. This route is through the famous *Hickory Nut Gap*, the scenery of which has been declared by some European travellers to be equal in beauty and grandeur to that of any pass in the Alps. The entire length of the Gap is about nine miles, the last five being watered by the Rocky Broad River. The gateway of the gorge on the eastern side is about one-half mile wide, and from this point the road winds upward along a narrow pass, hemmed in on all sides by stately heights. From the summit of the Gap there is a magnificent view in all directions.

Fourth—for those who would prefer to journey with less speed than by the railroad, for the sake of the greater enjoyment of the scenery: By stage from Greenville, S. C., *via* Saluda Gap, Flat Rock, and Hendersonville, to Asheville, sixty miles. *Flat Rock*, once the most frequented of Carolina resorts, has been somewhat shorn of its glories during recent years, but the lovely valley of its site still remains and yet contains some noble mansions, surrounded by gardens filled with the rarest and most beautiful shrubbery and flowers.

Fifth, also by stage from Greenville, *via* Irne's Gap and Cæsar's Head to Asheville, about seventy-five miles. *Cæsar's Head* is a bold and beautiful headland, and will well repay a visit in passing. And just beyond is *Cashier's Valley*, famous for its salubrious climate. It is more of a tableland than a valley, lying on the side of the Blue Ridge, about thirty-five hundred feet above sea level, and hemmed in on all sides by higher peaks, the highest of which is Chimney Top. On the southwestern edge of the valley is *White Side Mountain*, one of the most striking peaks in North

Carolina, rising to the height of more than five thousand feet above sea level, its southern face being an immense precipice of white rock two miles long, and so curved as to form part of the arc of a circle, with many cave-like recesses with wildly picturesque escarpments around. The largest of these recesses is known as the *Devil's Supreme Court House;* and, according to Cherokee tradition, the prince of the powers of darkness will on the day of doom erect his throne here and try all the spirits who fall under his jurisdiction. The approach to it is by a long, narrow, and dangerous ledge, upon which only the most coolheaded should venture to tread. The ascent to the summit of the mountain can be made partly on horseback. The view from the summit is of surpassing grandeur. "To the northeast, as far as the eye can reach, rise a multitude of sharply defined blue and purple peaks, the valleys between them, vast and filled with frightful ravines, seeming the merest gullies on the earth's surface. Farther off than this line of peaks rise the dim outlines of the Balsam and Smoky ranges. In the distant southwest, looking across into Georgia, we can descry Mount Yonah, lonely and superb, with a cloud reef about its brow. Sixty miles away, in South Carolina, a flash of sunlight reveals the roofs of the German settlement of Walhalla; and on the southeast, beyond the precipices and ragged projections, towers Chimney Top Mountain, while the Hog Back bends its ugly form against the sky and Cold Mountain rises on the left. Turning to the north we behold Yellow Mountain, with its square sides, and Short Off. Beyond and beyond, peaks and peaks, and ravines and ravines! It is like looking down on the world from a balloon."

Sixth: From the northwest or southwest, by the East Tennessee, Virginia, and Georgia Railway to Morristown, Tenn.; thence by its North Carolina division to Wolf Creek; thence by the Paint Rock branch of the Western North Carolina division of the Richmond and Danville Railroad, which traverses the valley of the French Broad to Asheville amid magnificent scenery.

The Warm and Hot Springs of North Carolina have been long known as among the most noted mineral waters of the Southern States. They are situated in Buncombe County on the western bank of the French Broad River, about forty miles from Asheville, and are accessible by railway.

The waters vary in temperature from 94° to 104° F. An analysis of three quarts of the water by Prof. E. D. Smith (*Silliman's Journal*, vol. viii.) gives the following constituents:

[illegible]	[illegible]	[illegible]
Sulphate of magnesium	"	6
Sulphate of calcium	"	14.5
Insoluble residue	"	2.5
Loss	"	1
[illegible]	[illegible]	[illegible]

Equal to 4.66 grains of solids in a pint.

The writer is unable to find any later analysis, but they are advertised to contain "carbon dioxide, free hydrogen sulphide, carbonic acid, sulphuric acid, in combination with calcium and a trace of magnesia." The waters are chiefly used in the form of baths (though sometimes they are drunk), for which there are excellent facilities. They are of creditable repute in the treatment of rheumatism, rheumatic gout, liver and kidney complaints, and cutaneous diseases. The locality is eminently healthful and the scenery beautiful.

Summerville, S. C., twenty-two miles from Charleston on the South Carolina Railroad, has long been a favorite winter resort for those who would escape the damp and chilly winds that sweep down the coast. It is situated on a ridge extending across the peninsula between the Cooper and Astley rivers and covered with pine woods. The air is soft and balmy, with a winter temperature of about 60° F., seldom rising to 70° and rarely falling below 55°.

The Pine Forest Inn is a commodious and well-furnished hotel, with large and well-ventilated bed, bath, and toilet rooms on every floor. Its rates are from $3 to $5 a day, $17.50 to $30 a week. It has excellent stables, with or without the services of experienced drivers. There are several good boarding-houses with prices ranging from $7 to $10 a week. The roads are good, and there are many places of historical interest in the vicinity.

Aiken is of extensive repute for its healthfulness, and few places are more favorably known. It is an expanded village of about three thousand inhabitants, situated on a tableland with an excellent watershed, between the Savannah and Edisto rivers (but at a considerable distance from either), at an elevation of five hundred and sixty-five feet above sea level. The soil is sandy and much of the country round about is covered with lofty pine trees. It is to this thrifty growth and the well-drained sandy soil that the healthfulness of the region is attributable.

The latitude of Aiken is 33° 32′ N.: longitude, 81° 34′ W. Mean winter temperature, 50° F.; range, twelve degrees. Mean relative humidity, 60.65. Rainfall, 7.16 inches.

The streets are wide and well shaded, the roads good, and the drives round about interesting. There are stables well stocked for both saddle and carriage riding, and it has relatively few days when outdoor exercise is not enjoyable.

Of the hotels, the *Highland Park Hotel* is one of the most elaborate and best equipped in the country. The grounds embrace, besides fifty acres of green lawn immediately surrounding the house, thickly interspersed with shade trees and ornamental shrubbery, a pine-woods park of three hundred and fifty acres, beautifully laid out in walks and drives, with here and there a rustic seat, and in the centre of the park a glass-inclosed pavilion.

There are several other good hotels with prices from $2.50 to $5 a day, and many excellent boarding-houses at from $10 to $15 a week. There are five churches for whites, and four for colored people. A polo club and other attractions contribute to social enjyment.

Aiken is accessible: From New York, Philadelphia, and Washington, *via* the Atlantic Coast Line, direct to Aiken, leaving New York at 9:25 A.M., arriving at Aiken at 7:28 next morning, with through sleeper. Also *via* the Clyde Line of steamers to Charleston, and thence by the South Carolina and Georgia Railway.

From Chicago, the West, and Northwest *via* the various routes to Atlanta, Ga.; thence by the Georgia Railroad, connecting at Augusta with the South Carolina and Georgia Railway.

From Thomasville or Florida to Savannah, thence by the Georgia Railroad through Augusta, or the Atlantic Coast Line through Charleston. Or *via* Denmark, by the Florida Central and Peninsular, and thence by the South Carolina and Georgia Railway to Aiken.

The Southern Railway, the "New Short Line" from the North, East, and West has a direct passenger route to healthful Aiken, and runs Pullman vestibule trains and superb hotel dining-cars. A train leaves New York at 12:30 noon, arriving at Aiken at 10:55 A.M.; also at 4:25 P.M., arriving at 5 P.M.

Camden is an attractive and healthful place, situated in a salubrious region in the central part of the State, known as the "Sand Hills," about four hundred feet above sea level. The climatic and local conditions are strikingly similar to those of Aiken. There are good hotel accommodations. Camden can be reached

from New York by way of the Atlantic Coast Line to Charleston, and thence in five hours by the Charleston, Cincinnati, and Chicago Railroad.

Columbia, the capital of South Carolina, a city of about fifteen thousand inhabitants, is situated at an altitude of three hundred feet above sea level on the bluffs of the Congaree River, a few miles below the beautiful falls of that river, on a sandy soil, with extensive pine forests in the vicinity. There are many handsome residences and imposing public buildings, with beautifully shaded streets and charming flower gardens. In the suburbs are handsome parks and pleasure grounds, good roads, and pleasant drives round about. The winter climate is similar to that of Summerville.

There are several good hotels, at from $2.50 to $3 a day. It is reached by the Richmond and Danville Railroad direct, or *via* steamer to Charleston, thence by the South Carolina Railroad.

Spartanburg, in the northern part of the State, two hundred and twenty-three miles from Charleston, and ninety-three from Columbia by the Greenville and Columbia and Spartanburg and Union railways, is pleasantly situated in the mineral region, famous for its gold and iron mines and *mineral waters*, and yet more famous for the memorable battle ground of the Cowpens, in the vicinity, where on January 17, 1781, occurred the defeat of the British under Tarleton.

Glenns Springs here are strongly impregnated with sulphur and contain sulphate of magnesium, with sulphate, bicarbonate, and chloride of calcium. The waters are considered efficacious in certain forms of rheumatism, scrofula, and dyspeptic complaints. *Limestone Spring* is chalybeate, and possesses valuable tonic properties.

Spartanburg is situated on high ground with healthful surroundings. The temperature here is somewhat lower than at Aiken, and the springs are a summer resort for Charlestonians to some extent; but they are also good as a winter resort, particularly for Northern people who would avail themselves of the benefit of such waters under congenial climatic conditions. There are good hotel and boarding-house accommodations.

Chick's Springs, Greenville, ninety-three miles nearer Charleston, at the foot of Saluda Mountain, on the Ennoree River, are also favorably situated as regards climate. There are two springs: the waters of one are slightly sulphurous and of excellent repute in the treatment of hepatic affections; the other is mildly chalybeate and commendable to anæmics. The region is eminently salubrious, and at Greenville there are excellent accommodations for visitors.

Georgia.

The Pine Forests of Georgia are a continuation from the Carolinas, but of even greater extent. They reach from one end of the State to the other, along the eastern and middle section, and save for a district extending seventy miles or so inland from the coast are everywhere healthful.

Savannah, however, though only eighteen miles from the mouth of the river of the same name and but forty feet above the level of the sea, is a delightful winter resort. Its beautiful parks, magnificent live oaks, evergreen shrubbery, and beautiful flower gardens add enchantment to the soft, mild climate. It is in latitude 32° 5′ N.; longitude, 81° 5′ W. The mean winter temperature, 54.5° F., is but slightly variable, and, with prevailing westwardly winds and little rain, makes congenial weather. The attractions round about, good roads and every accommodation desirable for their use, are well calculated to promote health. The scope of this paper will not permit much detail, even of the most interesting objects, but one can hardly forbear particularizing the rare spectacle of the great live oaks which shade Bonaventure Cemetery, to be seen nowhere else in such magnificence. More than a hundred years ago these grounds were laid out in broad avenues and planted with native live oaks scattered through the extensive lawns that surrounded the mansion of the Tatnalls, and these trees have been growing ever since. They stand in great columns on either side of the walks, while their far-reaching branches interlace overhead, like the fretted roof of some vast cathedral. The deep shade of their ever-green foliage shutting out the sky above, and the long gray-moss drapery depending from the leafy canopy, at times silent, at times gently swaying in the breeze, give to the scene a weird and strangely sombre aspect, at once picturesque and solemn. A more beautiful or more significant and appropriate monument to the dead than the shades of these forest aisles cannot be imagined. There are many beautiful and several historical monuments of interest.

Hotels are abundant and excellent, at from $2.50 to $4 a day.

Steamers run from Boston, Philadelphia, and Baltimore to Savannah. By railway it may be reached by the Atlantic Coast Line *via* Richmond, Wilmington, and Charleston; or by the Richmond and Danville Railroad to Columbus, and thence by the South Bound Railroad; from Cincinnati, St. Louis, and Memphis, by the Louisville and Nashville Railroad, and branches *via* Chattanooga and Atlanta, and by the Central Railroad of Georgia; from New Orleans by the Louisville and Nashville Railroad and the Savannah, Florida, and Western Railroad.

Augusta, a handsomely laid out and beautiful city, is situated at the head of steamboat navigation on the Savannah River, one hundred and thirty miles from its mouth, at an elevation of one hundred and eighty-five feet above sea level. The sanitary administration of the city is of exceptional excellence. The climate is similar to that of Aiken, from which it is only seventeen miles distant. There are good roads and beautiful scenery round about, and, taken altogether, as a winter resort for persons predisposed to or affected by consumption, Augusta possesses many advantages. The hotel accommodations are ample and excellent, and rates are moderate.

Augusta is accessible by way of the Savannah River and by the Central Railroad of Georgia; from the North by the Piedmont Air Line *via* Washington, Danville, and Charlotte, or by the Atlantic Coast Line *via* Washington, Richmond, Wilmington, and Columbia.

Thomasville, a town of about six thousand inhabitants, is situated on the Savannah, Florida, and Western, and the Altantic and Gulf railroads, two hundred miles southwest of Savannah, twelve miles from the Florida State line, in the midst of the long-leaf pine region, at an altitude of three hundred and thirty feet above sea level. The average winter temperature is 55° F. The streets are broad and well shaded, and the walks pleasant. It is a churchly community—Episcopal, Methodist, Baptist, Presbyterian, Roman Catholic, and Jewish denominations being represented. The excellent drives through the pine woods and the scenery round about, with the prevailing sunshiny weather, are important among the advantages of this deservedly noted resort.

There are three good hotels and a number of excellent boarding-houses at moderate rates.

Florida.

Those who would measure climate at the level of the sea by the meridian only will wholly fail to form a correct conclusion with regard to Florida. Northern Mexico, the peninsula of California, the Desert of Sahara, Central Arabia, Northern Hindostan, Northern

Burmah, Southern China, and numerous other regions less known and some of them insular-like, and in the same latitude as Florida, have climates more or less similar to each other, but all of them are strikingly different from that of Florida; and for the reason doubtless that none of those localities is bounded by an immense body of warm water on one side and a swiftly flowing ocean current on the other, and the peninsula between covered for the most part by a pine forest—a combination of influences conducive to healthfulness not found to anything like the same extent in any other region of the same latitude lying near the level of the sea, Florida's greatest altitude being nowhere more than three hundred feet.

Florida lies between the parallels of 24° 30′ and 31° north latitude, and 87° 30′ west longitude. The mean winter temperature is about 60° F.; mean relative humidity, 72.7. Average number of rainy days during the five months, November to March inclusive, for a series of years at Jacksonville (Signal Service records), 37.4. The dryest month is November, immediately following the wettest part of the rainy season. The winter weather altogether throughout the State is generally such as to allow outdoor exposure some portion of every day, and the preponderance of sunshiny days, with an almost constant gentle breeze from over the sea and through the pines, permits the fullest open-air enjoyment; and so generally do these conditions prevail the tourist can hardly go amiss with regard to his outdoor programme. But here, as indeed everywhere else—however good the promises and beautiful the premises—the tourist *should always* be alert as to the conditions of his sleeping-quarters and their immediate surroundings.

Jacksonville is the gateway at which the steamships, steamboats, and railways enter, the latter radiating thence throughout the State. It is a beautiful city of thirty thousand inhabitants, wide and well-shaded streets, and handsome parks. There are a half-dozen or more excellent hotels. The *St. James*, facing St. James Park, the most elevated grounds of the city, has accommodations for five hundred guests, and is provided with all the comforts and conveniences which characterize a hotel of the first class. The rates are $4 a day, with special weekly and family rates. The *Everett* and the *Windsor* hotels are also beautifully situated, and of like proportions with the St. James and at the same rates. The new Duval, the Carlton, St. John's House, the Grand View, Tremont House, the Travellers', and Hotel Placide offer good accommodations at from $2 to $3 a day. There are also many good boarding-houses at from $8 to $14 a week. From New York, Jacksonville is most comfortably reached by the Clyde Steamship Company's ships, 5 Bowling Green, the passage costing $25; excursion, $43.30. By rail the Atlantic Coast Line, *via* Washington, Charleston, and Savannah, runs vestibuled trains with buffet and sleeping cars through in twenty-eight hours, without change, the fare being $29.15.

St. Augustine, the oldest European settlement in the United States, is situated on the Atlantic coast on a narrow sand beach between Matanzas River on the east and the St. Bastian on the south and west, about forty miles south of the mouth of the St. John's River. The harbor of St. Augustine is protected by Anastasia Island, which lies between it and the ocean. The beach for miles around is covered with a tangled growth of palmetto and semitropical shrubs. The streets of the town are narrow, and seem to have shaped their course by crooked paths that wound their way through the tangled vegetation three centuries ago, when the town was founding, such paths being more easily followed. The streets are paved with shell, and many of the old houses are constructed of shell stone (coquina), quarried on Anastasia Island. The whole aspect of the town is *sui generis*. Like Topsy, it "just growed," and it has continued to grow in conformity with its planless beginning, more than half a century before the landing of the Pilgrims at Plymouth; but though founded on the sand it still endures.

The prevailing "style" of architecture is quaint and ancient; the verandas jut out from either side and almost touch across the streets. It is a surviving remnant of old Spain, and the objects to be seen round about are, many of them, Spanish in character and deeply interesting. Many important recent improvements have been made, however, and the current life here, which used to be described as indolent and lazy, is accumulating force, and thrift is following.

The winter climate is remarkably equable and agreeable, the mean temperature being about 58.8° F.

The *Ponce de Leon Hotel* is a building of magnificent proportions, replete with all modern conveniences and adorned with beautiful gardens of flowers and evergreens. It has accommodations for seven hundred guests at from $5.00 a day and upward. The *Cordova*, across the street, is run as an annex for the overflow of the *Ponce de Leon*. The *Alcazar*, *San Marco*, *Magnolia*, and *St. George* are comfortable hotels, with modern appointments, at from $2.50 to $4 a day, with special weekly rates.

There are at least a dozen other houses where guests are well taken care of at from $1.50 to $2.50 a day, and weekly at from $8 to $15.

Ormond, on the Halifax River, situated fifty miles down the coast from St. Augustine, on the line of the Florida East Coast Railway, and eighteen miles north of Mosquito Inlet, occupies both banks of the river, and fronts one of the finest sections of beach on the Atlantic coast. *Hotel Ormond*, on the bank of the river, is beautifully situated, and equipped with all modern conveniences. Here can be obtained, at reasonable prices, launches and row boats, fishing and hunting outfits—everything promotive of the health and pleasure of the guests. Hotel rates are from $4.50 to $5 a day; $23 to $28 a week. *Hotel Coquina* is also beautifully situated, upon a bluff overlooking the ocean, from which it is distant about three hundred feet. Among other features it has a glass-inclosed apartment which affords the famous seaside sun baths that are so highly recommended by some physicians; and also at all times an attractive view of ocean and beach. Surf bathing begins here about the 1st of February, and for this it surpasses any other place on the coast. A horse-car line from the railroad station to Hotel Coquina on the ocean shore passes near all hotels and boarding-houses. Rates are $3 a day, with special weekly rates. The Bosarvé, The Sunnyside, and The Granada furnish accommodations at from $7 to $15 a week. From Hotel Ormond dock launches ply their way up the river a distance of five miles, to the mouth of the Tomoko, in view of beautiful rolling lands devoted to the cultivation of oranges and early vegetables. As one ascends the river, the scenery increases in beauty, amid the rare double-headed palmettoes and pine forests. The route is very circuitous, and occasionally alligators may be seen. The climate is enjoyable.

From Jacksonville all points in South Florida are accessible. For **St. John's River** steamers leave daily except Saturdays, and for **Sanford,** one hundred and ninety-three miles south, stopping at intermediate landings. The banks of the St. John's are lined with luxuriant tropical vegetation, handsome shade trees, orange groves, and many picturesque villas and villages.

Mandarin, a small village on the east bank of St. John's, is one of the oldest settlements in the State.

Near the landing, almost hidden among live oaks and orange trees, stands the whilom home of the celebrated authoress of "Uncle Tom's Cabin;" and directly across the river from this place shines the white fence of Orange Park. Hibernia, New Switzerland, and Remington Park are passed, and the next landing-place is **Magnolia,** a popular resort. The *Magnolia Springs Hotel* is replete with all the modern improvements. The rates are from $3 to $5 a day; special weekly and family rates. Two miles beyond, and thirty miles from Jacksonville, is **Green Cove Springs,** which furnish sulphuretted water with a temperature of 78° F., gushing forth at the rate of three thousand gallons per minute. This spring has been recently improved, fitted up with plunge and swimming baths, and other improvements are in process; among which will be pools inclosed with glass, and all kinds of bathing-facilities. The Clarendon Hotel, which fronts the Spring Park, has accommodations for two hundred guests, and is said to be first-class in all its appointments. There are hot sulphur baths of the spring water in the hotel. Here also are the Hotel St. Elmo, the Oakland, St. Clair, and Green Cove Springs hotels, with accommodations at from $2.50 to $3 a day, and special rates by the week. Eighteen miles farther on is **Palatka,** a town of five thousand inhabitants, seventy-five miles from Jacksonville, occupying a fine, high plateau, with a wide-reaching view up and down the river. It has long been among the most favorite winter resorts in the State, and is well provided with good hotels at from $2 to $4 a day. Excellent boarding-houses are numerous at reasonable rates, and there is a great variety of social amusements. Palatka is the starting-point for the trip up the **Ocklawaha River,** the most tropical stream in North America. The journey is made in new and very comfortable boats for enjoying the scenery. Here, too, there is railway connection with Gainesville and Ocala *via* the Florida Southern Railroad for the Indian River. Moreover, Palatka is the usual and best point of departure for the hunting and fishing grounds of the upper St. John's and the Indian River region, and those who are not provided with hunting and fishing equipments can obtain them here.

The upper St. John's from Palatka southward increases in picturesque scenery with each succeeding hour. Instead of being a broad estuary, the river now becomes narrow and tortuous, and at night, when illuminated by the powerful searchlight of the steamer, to the traveller's first view it is a picture from fairyland. Yet, narrow as it is, every few miles it expands into lakes, some of which are large bodies of shallow water teeming with ducks and other wild fowl. **Lake George,** four miles wide and eighteen miles long, is the most beautiful sheet of water in the State, considered by many tourists equal in picturesqueness to its namesake in the State of New York. It is dotted with many lovely islands, like its namesake, but these, instead of being covered with groves of timber trees and bush, are for the most part the sites of orange groves. All along, the shores and clumps of tropical bush are alive with the sweet songs of Southern birds; and here and there, in striking contrast with anything that is ever seen along the lake shores of the North, cranes and flamingoes are seen stalking the water's edge, picking choice morsels from the ripple; while off shore great boat-like pelicans are cruising about and loading their pouches with delicate fish for the little ones at home. The next point of interest is Beresford, the landing-place for the flourishing district about Deland, Lake Helen, Orange City, etc. A few miles farther up the narrow and lazy stream brings the steamer to Lake Monroe and the conclusion of the voyage—the head of steamboat navigation—at Sanford and Enterprise.

Sanford is the metropolis of South Florida. It is the terminus of seven railroads, with a daily mail service north, south, east, and west. Its late rapid growth has exceeded all expectations and greatly inspired energy in public improvements. The sanitary condition is reported to be the best in the State. It has excellent water works, a good fire department, and other public works, fine churches, and social clubs. There are many fine orange groves in the vicinity and pleasant scenery abounds. Hunting and fishing are fruitful, and accommodations for tourists unlimited. *The Sanford House* has long been famous, and there are, besides, San Leon Hotel, Sirvine Hotel, and other good houses, at from $2 to $4 a day and reduced rates by the week, and many good boarding-houses at lower rates.

Enterprise is on the opposite side of the lake from Sanford. Brock House here is famous among tourists who have been privileged to enjoy it. It is beautifully situated on the north shore of Lake Monroe, and is provided with all modern improvements, gas, electric bells, baths, open fires, telegraph office, and is, in short, one of the most homelike and comfortable hotels in the south. Rates, $3.50 to $4 a day; weekly, $17.50 and upward; special rates to families.

The Indian River section is yearly becoming more and more attractive. The "river" itself is a long lagoon or arm of the sea, beginning near the lower end of Hillsborough Lagoon and extending along the east side of the peninsula for nearly one hundred and fifty miles. It is separated from the Atlantic by a narrow strip of land, through which it communicates with the open water by the Indian River Inlet and by Jupiter Inlet; and for more than thirty miles of its northern course it flows parallel with the St. John's River, at an average distance of about ten miles.

The favorite route to Indian River is by the Clyde St. John's River Line *via* Sanford or Enterprise to Titusville, thirty-seven miles. It is also accessible by the Jacksonville, St. Augustine, and Indian River Railroad, which runs one hundred and fifty-eight miles to Titusville. Here connections are made with the Florida East Coast Railway.

Titusville is a thriving town of about two thousand five hundred inhabitants, and is noted for its beautiful vegetable and fruit farms and its orange groves. **Merritt's Island,** almost opposite Titusville, is a long triangular island, comprising about fifty-eight thousand acres, mostly pine land, but noted for its pineapple plantations. The portion of the Indian River on the east side of the island is called Banana River, and is a great resort for fishermen.

Rockledge is a beautifully situated town on the west bank of the river, the trade centre for the superior quality of the oranges cultivated in its vicinity. Fishing and duck-shooting afford abundant recreation and amusement to sportsmen. Hotel Indian River here keeps sail and row boats and steam launches for the benefit of its guests; and daily excursions are made to Fairyland, City Point, Tropic, and other places of interest. Hotel rates, $4 and $5 a day; $22.50 to $25 and upward a week. The New Rockledge Hotel and The Plaza are good hotels, though less elaborate than the Hotel Indian River—at $2.50 and $3.50 a day.

Jupiter, at the mouth of Indian River, on Jupiter Inlet, the landing-place of the Indian River Steamboat Company, is an excellent winter resort for fishing and hunting. The climate is equable and enjoyable, the temperature ranging from 58° to 62° F. Carlin House and Miller House furnish accommodations at $2 a day, or $10 a week.

Palm Beach, on the eastern shore of Lake Worth, the terminus of the Jacksonville, St. Augustine, and Indian River Railroad, has recently been made one of the most attractive winter resorts of Southern Florida,

famed for its fishing and hunting advantages. It may be reached also *via* steamers of the Indian River Steamboat Company to Jupiter, thence by the Jacksonville and Lake Worth Railroad, and steamers on Lake Worth. The town is situated between the ocean and Lake Worth. The region around abounds in tropical fruits and flowers. The Royal Poinciana rivals the Ponce De Leon of St. Augustine in magnificence, elegance, and equipment. It has accommodations for one thousand guests. Rates, $5 a day and upward; special rates for the season. Cocoanut Grove House, Lake Worth Hotel, and Oak Lawn House are good hotels at from $2.50 to $4 a day, and special weekly rates; and there are boarding-houses at from $10 to $15 a week.

Miami, on Biscayne Bay, is the terminus of the Florida East Coast Railway, which skirts the east coast of Florida from Jacksonville south, and is the most southern of the well-equipped east-coast winter resorts. Semiweekly trips are made here by the Miami-Nassau Steamship Line during January; triweekly during February and March; and semiweekly during April, until the service terminates. The winter temperature here is equable and about 64° F. The vegetation is strikingly tropical, and the two excellent hotels, Hotel Royal Palm and Hotel Biscayne, display it to admirable advantage in their beautifully laid out and ornamented grounds. Biscayne Bay is a large sheet of salt water, so clear that its garden-like bottom and numberless fish can be plainly seen to a depth of twenty-five feet and more. It is separated from the ocean by the picturesque Florida Keys. There is open-air bathing in the bathing-pool in front of the Royal Palm at all times. Boating and canoeing on the rivers and into the Everglades, with steam-launch and sailboat excursions, are other attractions. Hotel rates, $3 a day and upward.

Winter Park, managed under the auspices of the Plant Railroad System, is situated at an altitude of over a hundred feet above sea level, in the midst of the lake and pine-forest region; about forty miles from the Atlantic coast, and eighty miles from the Gulf of Mexico, one hundred and thirty-three miles south of Jacksonville, and one hundred miles north of Tampa. The situation affords an excellent watershed and good soil drainage. The water of the lakes round about is said to flow from one to another. The average winter temperature is about 62° F.; the winter rainfall is slight, and the air relatively dry. The Seminole Hotel is an elegant establishment, equipped with all modern improvements; $3 to $4 a day. The bicycle and other roads are excellent, and the outdoor attractions enjoyable. *Ocala* is a flourishing business town of five thousand inhabitants, situated on the central ridge, about midway between Jacksonville and Tampa, on the Plant Railroad route to Key West. The high dry land is entirely free from malaria, and the refreshing breezes through the pines from the ocean and the Gulf combine to produce a mild and healthful climate—particularly commendable to consumptives, as is also Winter Park. The mean winter temperature is about 62° F., equable, and the air relatively dry—the rainfall during the winter months being small. The roads are good and the outings attractive. The Ocala House is commodious and well equipped with all modern appliances; rates, $3 to $4 a day.

Tampa Bay Hotel at Tampa, conducted by the Plant System, is an eminently luxurious house, with everything calculated to promote the enjoyment of the tourist. It is a fireproof structure, built upon the Tampa peninsula, open to the mild and equable climate of the Gulf, with spacious grounds ornamented with tropical verdure and flowers. The Casino, which adjoins the hotel park, fifty feet distant and midway between one of the hotel entrances and Hillsborough Bay, is a handsome addition to the means of enjoyment, provided as it is with a swimming-pool, fifty by seventy feet, with a depth of water varying from three to ten feet, surrounded by dressing-rooms, each with an outside window. A competent instructor in swimming, as well as ladies' maids, is in attendance during the season. The Theatrical Auditorium, one hundred and fifty-seven by eighty-eight feet floor space, with a seating capacity for an audience of two thousand, furnished with handsome opera chairs, is another Casino feature; and for this the proprietor announces that "a large number of the best theatrical companies are engaged and will appear at intervals during the season."

Alabama.

The winter climate of northern Alabama is both delightful and healthful. The temperature rarely falls so low as 32° F., the average temperature being about 50° F. **Huntsville** and **Florence,** on the Tennessee River, are justly favorite health resorts, with excellent accommodations at moderate prices.

Mobile, situated on a sandy soil on the western shore of Mobile Bay, with a thrifty growth of pine woods roundabout, through and by which the warm Gulf breeze is sifted of its excess of moisture, is also an excellent winter resort for people with tender lungs, and the better now by reason of the energetic sanitary measures recently practised on account of the fever, from which there is no longer any danger. Besides, on the eastern shore of the bay, from fifteen to twenty miles nearer the Gulf, **Alabama City, Williamsburg,** and **Point Clear** are well-appointed places, with good hotel accommodations, bathing and boating facilities, with cottages and orange groves roundabout, available for invalids or for pleasure seekers who would long sojourn and enjoy the attractions of fishing and hunting. The waters, fields, and forests are all alive with game.

Mississippi.

The bluff shore of the Gulf and Mississippi Sound, along which are situated Pass Christian, Ocean Springs, Bay St. Louis, Biloxi, Pascagoula, several smaller towns, and numerous villas, has long been deservedly noted for its healthfulness and is a favorite winter resort for invalids who would enjoy the warm and soft Gulf winds. Though these winds are sometimes loaded with moisture, the moisture is always *clean* and never liable to make people sick, like that which hovers over low and undrained soil. Their salutary effects on some of the more chronic forms of tuberculosis, particularly in aged persons, in nervous derangements and insomnia, are well attested by numerous cases. But it appears to have been the great misfortune of this locality recently that the authorities have neglected needful sanitary measures, insomuch as to have allowed opportunity for the epidemics of dengue and yellow fever. It may be said, however, as of Mobile and of New Orleans, that the condition has been greatly improved by reason of the energetic sanitary measures that have since been practised. There are good hotel and boarding-house accommodations in all the localities named, and other facilities for enjoyment.

Louisiana.

The northern and western sections of this State are generally healthful at all seasons; and the mild winter climate, which allows daily outdoor exposure, has long been recognized as being particularly beneficial to persons affected with or predisposed to pulmonary diseases.

New Orleans is one of the most enjoyable winter resorts in the country, and the more so by reason of the enforcement of sanitation on account of the fever. There is no day so cold and but very rarely

one so wet as to prevent open-air exposure, and there is no end to the attractions in and round about the city. Many of the old relics of Spanish and French rule still exist. Its French quarter and market are unique as objects of interest. Old Spanish Fort, on Lake Ponchartrain, five miles distant by electric cars, the originally undertaken site of the city—and now to New Orleans what Coney Island is to New York—is a daily novelty. Other places in the suburbs are the battleground of the famous victory of General Jackson over the British forces, January 8, 1815, and the still unfinished monument commemorative of the victory; Carolton, Gretna, Algiers, and many other localities of interest but a few miles distant, all accessible by excellent carriage roads, surface cars, or steamboat excursions. New Orleans has been so long famous for its opera, theatres, and, above all, for its "Mardi Gras," on Shrove Tuesday, when Rex, King of the Carnival, arrives, that to undertake a description of these enjoyments would be wholly superfluous as well as altogether inadequate. They should be seen and shared to be duly appreciated.

Arkansas Hot Springs.

These are situated in the town of Hot Springs, Ark., latitude 34° 5′ N., in the midst of a wild and picturesque mountain region, one thousand five hundred feet above the sea level, forty-five miles southwest of Little Rock, and six miles north of Wachita River. The town lies, principally, in the narrow valley of Hot Springs Creek, running north and south between the Ozark Mountains. It is embowered in trees and presents a very picturesque appearance. In the middle of the day it is sometimes very warm, even in winter, and the nights are cool; but the average winter temperature is about 50° F. The springs are in number seventy-one. They are chiefly chalybeate and sulphuretted. They vary in temperature from 76° to 157° F., and many of them have been improved. The waters are used internally and to a considerable extent externally; there is a large number of bathing-houses with vapor, douche, and plunge baths at various temperatures. The amount of hot water flowing from the springs into the creek renders it sufficiently warm for bathing in midwinter; the discharge into the creek is about five hundred and fifty gallons a minute. Their chief reputation rests upon their efficacy in the treatment of rheumatic and gouty affections, syphilitic and mercurial diseases, and certain forms of skin diseases. It is not a good resort for consumptives. Hotels are numerous and adequate, at from $2 to $5 a day, and $8 to $15 a week. Rates of travel: from New York, over the trunk lines, $32.40 to $35.40; from St. Louis by the St. Louis, Iron Mountain and Southern Railroad to Malvern, and thence by a branch road to the Springs (distance, four hundred and thirteen miles; time, about fifteen hours), excursion tickets, good for ninety days, $22.50.

"**Dry, warm air** is found in southwestern Texas, and the southern portions of New Mexico and Arizona." This was the deduction of Gen. A. W. Greely, chief signal officer, from a map illustrative of an article under the caption of "Where Shall We Spend our Winter?" contributed by him to *Scribner's Magazine*, for November, 1888.

Texas.

San Antonio, a city of over fifty thousand inhabitants, situated at an elevation of six hundred feet above sea level, between, or rather on, by reason of the recent expansion of the city, two rivers, the San Antonio and the San Pedro, latitude 29° 30′ N., possesses a mild, dry, and equable winter climate, commendable to consumptives. It is, however, subject to occasional high winds and dust, which should be avoided. It is a progressive city, and enjoyable because of its excellent hotels, churches, opera house, and other social attractions; a large preponderance of sunshiny days, good roads round about, and conditions inviting to outdoor life. It is two hundred and ten miles west of Houston by the Galveston, Harrisburg, and San Antonio Railroad, of the Southern Pacific system; one hundred and thirty-five miles from the Gulf of Mexico by the San Antonio and Aransas Pass Railroad; eighty-two miles from Austin by the International and Great Northern Railroad, and one hundred and fifty miles by rail from the Rio Grande at Laredo.

Boerne, a small town thirty miles northwest of San Antonio, on the San Antonio and Aransas Pass Railroad, at an elevation of one thousand five hundred and fifty feet above sea level, has a climate very similar to that of San Antonio; average winter temperature, 62.7° F.; mean relative humidity, 69. Severe "northers" sometimes occur during the winter, when there is a fall in the temperature of from five to twenty degrees, for a few hours, or for a day or two. There are no hotels of consequence here, but there are good boarding-houses at from $20 to 40 a month; and commonly, plainly furnished houses may be rented at from $10 to $20 a month. There are very few days during the winter which are prohibitive of outings. The roads are good, and there are many attractions in the way of driving, hunting, and fishing.

El Paso, a city of eleven thousand inhabitants, situated at an altitude of three thousand seven hundred and sixty-four feet above sea-level, in the extreme northwestern corner of the State, in latitude 30° 47′ N., has a mean winter temperature of about 46° F., but there is great variation in the day and night temperatures; at midday the temperature often rises to 60° F. and at night sinks to freezing. The winds are moderate and the atmosphere is cloudless. Mean winter rainfall, 0.65 inches; mean relative humidity, 56 per cent. There are several good hotels here and pleasant social attractions. Wheeling and driving on good roads, and mountain climbing are the out-door attractions.

New Mexico.

Las Cruces, a small town situated at an altitude of three thousand eight hundred feet above sea level, in the southern portion of the State, on the line of the Atchison, Topeka, and Santa Fé Railroad, has an average winter temperature of about 43° F., and a relatively dry atmosphere, with a large proportion of sunshiny days that admit daily outings. The attractions are interesting drives, shooting, and Mexican curios. There are no hotels of note here, but there are good boarding-houses, among them those of F. C. Baker, R. C. Halton, J. R. Schmidt, K. Livingston.

Arizona.

Phœnix, situated at an altitude of one thousand two hundred feet above sea level, in the Salt River Valley, with a branch connection with the Atchison, Topeka, and Santa Fé Railway, occupies about the same parallel of latitude as San Antonio, and possesses a similar climate, with the additional advantage of greater altitude, but greater liability to dust. The valley is about sixty miles long by twenty wide, protected by high mountains. The average winter temperature is about 60° F., and the atmosphere exceptionally dry. Phœnix is reported to be well equipped for the entertainment of visitors.

California.

The improved health resorts of California are almost wholly confined to the seacoast; and the winter resorts in Southern California are only those between Monterey and San Diego.

Monterey, situated on the southern extremity of a

bay of the same name, seventy-eight miles south of San Francisco by water, and two hours distant by rail, latitude 36° 37′ N., has an equable mean winter temperature of 52° F.; the atmosphere is humid.

The peninsula on which the town lies affords views of the bay and the ocean and beautiful scenery round about. The *Hotel del Monte* is one of the largest and most luxuriously furnished hotels in the State. The grounds consist of a beautifully ornamented park of one hundred and twenty-six acres, a mere corner of an area five times larger, containing groves of native trees and shrubbery. There are good roads for wheeling and driving, boating and fishing paraphernalia in short, everything calculated to promote the health and comfort of guests. The rates are $4 a day and upward. There are, besides, several other good hotels at $4 and less.

Santa Cruz, across the bay, opposite Monterey, and with a climate about the same, has the advantage of a beautiful bathing-beach, about a mile from the centre of the town. There are good bathhouses and everything necessary to the comfort and enjoyment of bathers. It is a beautiful town and the scenery round about is most enjoyable; and for this *Sea Beach Hotel* affords every facility. It is easily reached from all points by horse cars and electric cars from neighboring localities, and the Southern Pacific Railway station is only a short distance off. The rates are moderate.

San Jose, the New Haven of the Pacific, a town of twenty-two thousand inhabitants, is situated in the valley of Santa Clara, one hour and twenty minutes by express trains from San Francisco, and in close connection by frequent trains with Santa Cruz, Monterey, and Pacific Grove. The valley of Santa Clara, in which San José is located, is fourteen miles wide. To the east are the hills of the Coast Range, the highest summits rising to the height of five thousand feet above sea level; to the west the Santa Cruz ranges, four thousand feet high, showing through the blue haze dark green forests on a background of golden light. The sanitary works are excellent, and the records show a corresponding healthfulness of the town. *The Hotel Vendome* is a commodious and well-furnished house, only a few minutes' walk from the Southern Pacific Railway depot. The street cars pass the door at short intervals. It furnishes every facility for the enjoyment of the magnificent scenery with which the town is surrounded.

Pacific Congress Springs—so-called because of the alleged resemblance of the waters to those of Saratoga, N. Y.—are situated ten miles west of San José, near Saratoga, at an elevation of seven hundred feet above sea level, amid picturesque scenery. The chemical elements of the waters, as shown by analysis made by Dr. Winslow Anderson, are as follows:

The Pacific Congress water contains 304.07 grains of solid matter to the gallon, consisting of:

Sodium chloride	115.70
Sodium carbonate	120.42
Sodium sulphate	12.95
Potassium carbonate	2.06
Magnesium carbonate	26.34
Magnesium sulphate	4.19
Ferrous carbonate	13.87
Alumina	4.50
Silica	3.98
Total	304.07
Organic matter	trace.
Gases—free carbonic acid	14.17

The springs have been improved, and have the advantage of being a popular winter as well as summer resort.

Congress Hall consists of a spacious main building, with broad veranda, and a number of two-story cottages adjoining, grouped upon a plateau on the mountain side, and surrounded by shade trees, a beautiful lawn, and rare tropical plants and flowers. The surroundings make one feel that there are plenty of room and comfort everywhere. There are bathrooms convenient to the hotel, where hot and cold baths are served.

Good hunting and fishing, as well as romantic drives, add to the reputation of the springs. Board, $2.50 a day, $10 to $15 a week.

Santa Barbara is a town of eight thousand inhabitants, two hundred and seventy-five miles southeast of San Francisco, by steamer or by Southern Pacific Railway. Latitude, 35 N.; mean winter temperature, 54 F.; mean humidity, 73. But to compensate for its humidity it possesses the special advantage of altitudes ranging from almost sea level to thirty-five hundred feet above, with a corresponding change of atmospheric conditions. If the damp atmosphere of the coast is found to disagree, relief may be obtained by going back from two to six miles among the foothills, where there are numberless sheltered nooks, or a little farther into the cañons of the mountain side, where the air is warmer as well as drier. Few winter health resorts possess a better or a more deserved reputation as desirable localities for consumptives than does Santa Barbara. The hotel accommodations are adequate and excellent.

Moreover, about six miles northeast of the town are the *Santa Barbara Hot Springs*, picturesquely located at an altitude of fourteen hundred and fifty feet above sea level, amid the forest-covered mountains. There are about thirty of these springs—sulphurous, saline, and chalybeate—ranging in temperature from 99 to 122° F. Seven of the principal ones are used for drinking and bathing purposes. They have considerable reputation in the treatment of rheumatism, gout, Bright's disease, liver affections, and bladder irritation. There are hotel and bath accommodations.

Los Angeles, sixty miles south of Santa Barbara, a city of over one hundred thousand population, is situated on Los Angeles River, thirty miles from its mouth, at an altitude of three hundred and thirty feet above the sea. It is a beautiful and interesting city. Its proximity to the mountains insures an abundant supply of pure drinking-water, and the sanitary works are excellent. The mean winter temperature is about 53° F., with but a slight range. The percentages of cloudy and sunshiny days, and the number of clear days in winter, as recorded, are, respectively, 34, 66, and 49. The delightful climate, excellent roads, and beautiful scenery all lend their attraction to open-air enjoyments. It seems almost needless to say that the hotels are abundantly adequate and well equipped, and the rates are moderate.

Pasadena, situated at the base of the Sierra Madre Mountains, on the line of the Southern California Railroad, ten miles northeast of Los Angeles and five hundred feet higher, possesses a delightful climate. It is a flourishing town of about six thousand inhabitants, has steam and surface railroad connections for many miles round, and excellent roads besides; which, with the beauty of the scenery and many objects of interest round about, are constant incentives to open-air enjoyment. The *Raymond* and *Carleton* are both good hotels at moderate rates.

San Bernardino, a delightful inland resort, with about five thousand inhabitants, lies in a picturesque valley about sixty miles east of Los Angeles, in the mountains. It is reached from Los Angeles by the Southern California Railroad in two hours. It is embowered in fruit and ornamental trees, and the choicest of California fruits of all kinds are produced hereabout in great abundance. The air is much drier than that of places on the coast, and in so far is more commendable to some consumptives. Its delightful temperature, lovely weather, and the beauty of

the scenery are a perpetual inducement to open-air life. There are several excellent hotels at moderate rates.

San Diego, situated on the bay of the same name, four hundred and sixty miles southeast of San Francisco and fifteen miles north of the Mexican border, latitude 32° 44′ N., is a city of about twenty thousand inhabitants, and, next to that of San Francisco, has the best harbor on the California coast. The town is more than one hundred years old, but it is only during recent years that the sanitary works have been such as to render the town attractive as a winter resort, and recently much progress has been made. The soil in the higher portions of the town is sandy; the mesas or tablelands ascend from the bay until they reach the mountains, about forty miles distant. Hence the natural facilities for drainage are good, excepting for some low and marshy ground around the shores of the southern end of the bay, and have been turned to advantage. Some forty to fifty miles of sewerage pipes have been laid, and a pure water supply, brought from the mountains, has been introduced within the last ten years. The best residential portion of the town is Florence Heights, one hundred and eighty feet above sea level, where there are many beautiful houses with charming grounds.

The climate is remarkably equable and dry for a seacoast place, the annual range of temperature being but fifteen degrees; the mean winter temperature is about 54° F., from which it rarely varies more than five degrees. Relative humidity, 73 per cent. Frost is unknown here and the lowest temperature on record is 40° F. The average annual rainfall is ten inches—about one-third of it during the winter months. The breeze is almost constant but moderate, and a fog exceedingly rare.

Directly opposite San Diego, across the bay, one mile distant and with steam-ferry connection, is **Coronado Beach,** a crescent-shaped tongue of hard sand, six miles long, which separates the bay from the ocean, bearing some resemblance to Cape May.

These—San Diego and Coronado—are "Our Italy," of which Charles Dudley Warner wrote so admiringly, after spending a part of the winter there in 1889–90. "It lies there, our Mediterranean region, on a blue ocean protected by barriers of granite from the Northern influences, an infinite variety of plain, cañon, hills valleys, seacoast—our new Italy, without malaria and with every sort of fruit which we desire, except the tropical, which will be grown in perfection when our knowledge equals our ambition; and if you cannot find a winter home there, or pass some contented weeks in the months of Northern inclemency, you are weighing social advantages against those of the least objectionable climate within the Union. It is not yet proved that this equability and the daily outdoor life possible there will change character, but they are likely to improve the disposition and soften the asperities of common life. At any rate, there is a land where, from November to April, one has not to make a continual fight with the elements to keep alive."

The Hotel del Coronado, on Coronado Beach, is one of the most commodious and luxuriously equipped hotels in the Union. It covers seven and one-half acres, surrounded by a park of ornamental trees and flowers of unsurpassable beauty. Its chief rivals are the *Horton House*, *Florence Hotel*, and *Brewster House;* and *St. James Hotel*, at San Diego, on the other side of the bay, though less elaborate, is of equal elegance with the Coronado. The rates are from $3 to $5 a day.

Of attractions to outdoor life there is no end in the beautiful scenery and places of interest, accessible by wheel or carriage on good roads, steam and surface cars, and steamboat excursions—so versatile and so interesting as to be a constant inducement to healthful recreation in the open air.

San Diego is the western terminus of the Atchison, Topeka, and Santa Fé system. Its connection with San Francisco is by steamer or the Southern Pacific *via* Los Angeles.

Through tickets are on sale at San Francisco, Oakland, Alameda, and San José, reading to Lompoc, Santa Barbara, and Los Angeles, and other points; also at Los Angeles, Sant Barbara, and Lompoc, reading in the opposite direction. The rates are as follows: Between San Francisco and Lompoc, $10.90; between San Francisco and Santa Barbara, $15; between San Francisco and Los Angeles, $18.35. Between San José and Lompoc, $9.65; between San José and Santa Barbara, $15; between San José and Los Angeles, $18.35.

The Sandwich Islands.

With the geography of these islands in detail the tourist is supposed to have made himself acquainted from other sources. They lie in latitude 21° 18′ N., and longitude 157° 55′ W., twenty-one hundred miles from San Francisco. The Ocean Steamship Company's steamers make the voyage fortnightly; also those of the Pacific Mail Steamship Company, and the Occidental and Oriental Steamship Company. The usual time from San Francisco to Honolulu is six days. Fare, $75: round trip, good for four months, $125.

Though these islands are on the verge of the tropics and over two thousand miles distant from other land, the climate is virtually an exaggeration of that of the seacoast rather than oceanic. This is probably due to the nature and conformation of the soil, the enormous amount of vegetable *débris*, and the great rainfall.

There are twelve islands in the group, all of volcanic origin, differing in altitude from ocean level to fourteen thousand feet above. Besides the two peaks of the principal island, Hawaii, Mauna Kea and Mauna Loa, each of which is fourteen thousand feet high and one of them covered with perpetual snow, this island is traversed by many other rugged and craggy peaks and ridges, and presents a magnified view, as it were, of the same characteristics more or less common to the other islands of the group. Several of them, or at least large portions of several of them—particularly on the windward sides—are covered with dense forests. The rough crevices and culs-de-sac are literally stuffed with the *débris*. The annual rainfall is from one hundred and forty to one hundred and fifty inches, and in consequence of the obstructed surface drainage and the high temperature the accumulated *débris* is kept in a state of constant decay and the climate rendered malarious. Moreover, by reason of the elevated peaks and ridges and the thick forests on the windward sides of the islands, the circulation of the air is impeded and the benefit which otherwise would be derivable from the prevailing trade wind from the northeast is lacking. Hence the winter temperature of these islands, according to the records, instead of being oceanic and equable at about 80° F., is about 70° F. and *variable*—the diurnal variation in winter being from ten to fifteen degrees, and the annual range from 53° to 90° F. The sea voyage from San Francisco is commendable, but as a health resort Hawaii does not compare favorably with those on the seacoast of Southern California.

Intussusception.—Under anæsthesia a rectal tip was inserted, which controlled any escape of water from the rectum, and through it over two gallons of water was introduced into the bowel. There was a sudden violent gush of water from the patient's mouth, showing that the obstruction was overcome.—Pynchon, *Matheze's Medical Quarterly*, January.

Original Articles.

NASSAU AND THE BAHAMA ISLANDS.

BY OLIVER J. D. HUGHES, PH.D., M.D.,

[illegible], CONN.,

EX-VICE-PRESIDENT, CONNECTICUT MEDICAL SOCIETY; LATE [illegible], NEW HAVEN COUNTY MEDICAL ASSOCIATION; [illegible], MEDICAL [illegible] ASSOCIATION.

How often we tell a patient that a change of climate is necessary—is, in fact, imperative to save life—and then deliberately send him to some place which is in every way unfitted for his diseased condition! Now, after a thorough acquaintance with Nassau and the Bahama Islands since 1875—that is to say, some two-and-twenty years—I think I can with some knowledge and authority speak for what Nassau can do for a certain class of cases; or, in other words, what special diseases may be and are benefited by a longer or shorter sojourn there.

I might say, at the start, that I am no great believer in sending patients *in articulo mortis* to any place but their own home. Such patients will not improve anywhere; let them die in peace and comfort, at home among their friends and relatives.

The Bahama Islands lie a few hours' sail from the eastern shore of Florida, with the Gulf Stream winding its way among them, keeping up a dry, pleasant heat, which never becomes oppressive, owing to the ever-blowing trade winds—the average winter temperature being between 70° and 80° F. during the day, and at night everything is cool, with no mosquitoes or other members of the flying world to disturb pleasant or healthful dreams. Doors and windows nobody shuts either by day or night, as the air will do good, "and thieves do not break through nor steal."

But to come down to the cases benefited by residence in this group of islands:

1st. All cases of acute or semi-acute affections of the lungs.

2d. All cases of nervous afflictions, including most especially those of a diabetic character.

3d. Rheumatic cases in all their chronic and semi-chronic conditions.

4th. All classes of patients recovering from severe forms of any of the acute diseases.

5th. It is the only place in the world for a tired-out professional or business man to take it easy, and really do nothing but enjoy himself quietly and give nature a chance to build up and once more make a man able to do man's work.

6th. That class of stomach troubles found so often among business or professional men and women who bolt their meals and then rush off to work again; that class of cases in women who are so constipated that they never have a natural movement of the bowels.

In the first class mentioned—affections of the lungs—so long as they are not in the last stages, where can you find such a perfectly dry sea air, thoroughly loaded by nature with everything necessary to repair broken-down tissue and build it up anew, sound and healthful? The wife of one of America's greatest painters was kept alive for over twenty years by being brought down every winter. A great many times I have seen her carried aboard the steamer at New York on a Thursday afternoon, and on the next Monday morning seen her walk ashore at Nassau almost a new person.

Another case: the beautiful wife of a prominent New York lawyer, who if she stays in New York City during the winter at once develops a well-marked bronchitis which more than once has nearly carried her off, finds instant relief in the fair Isle of Irme.

A medical friend of mine, now enjoying a large practice in one of our Southern cities, came to me some years ago for advice as to what he should do. On examination I found his right lung very much broken down. He had previously seen nearly every prominent lung specialist in the country, and had been advised to go from Maine to California. He had done so, with the result that he had gotten steadily worse—to say nothing of a pocketbook nearly empty. He wanted advice as to what to do. His stomach had arrived at that point where food and medicine were almost rejected before being swallowed. I advised him to go and live on one of the out-islands of the Bahama group, to leave all medicine alone, and to feed on the flesh of the green turtle, with plenty of baked plantains in place of bread, and some good rye whiskey to take the place of all opiates. He did as I advised, lived strictly as ordered, was outdoors all day long, even sleeping at night with only a shed over him, bathing every day in the warm salt water. He gradually improved, until after living thus for eighteen months he came back to the United States a well man, hearty and able to do a good day's work, to enjoy three square meals a day without distressing his digestion in any way. He had been cod-liver oiled almost to death before starting for the Bahamas—with what result? His lungs steadily getting worse and his digestion ruined. Now mark the difference. Under a good liberal diet of fresh turtle flesh—which contains ten to one more nourishment and tonic properties than any bad-smelling and worse-tasting cod's-liver product—he picks up, is able to enjoy his food, and nature gets a chance to repair his diseased lung tissue. Oh! when will we learn to appreciate nature's rare gifts and to keep from doing harm just from force of habit and because our grandfathers blundered at the start! I can recall a great many other cases, but I think the above are enough.

In the second class—nervous affections—the climate seems to have a soothing, quieting effect, which, combined with the complete change in the ways and manners of life, helps to take the patients' thoughts away from themselves and thus improve their nervous system.

For the diabetic, where can he find a place so well suited for him? As near the sea level as he can get without walking directly into the sea; a climate such that he can be outdoors day and night; with the greatest variety of fish diet, with acid fruits in profusion, with the skin-baked banana food, as near a non-starchy substitute for flour as can be found.

Thirdly, that class of chronic rheumatic cases so often found in our Northern cities and villages. The crippled fingers and feet seem to improve and grow limber once more under the influence of the life-giving air and warm salt-water baths.

Fourthly, any one who has been flat on his back, after a severe attack of any kind of acute sickness during a Northern ice-bound winter, improves rapidly. What with the complete change of climate, food, habits of life, etc., two weeks out there will do more good than three months of tonics.

Fifthly, how often we are called to see a business man who is said to be suffering from "malaria," or "nervous prostration," or some other thing which means the same—"nothing." Why not use good, plain Anglo-Saxon and say that he is "played out" from overwork or something else? To this class a two or four weeks' trip to these beautiful isles, with their easy-going, happy-go-lucky ways, brings new life. One is able to see the funny side of life once more, to laugh, be merry, and grow fat and be happy. Can medicine alone do this? I think not.

Sixthly, we come to the man and woman who have arrived at that stage of life on earth when the pleasures of the table are a thing of the past, who can only

groan and look sour when they see anybody else enjoy a good meal, who travel around with a large and well-assorted case of every drug in the materia medica—to say nothing of half a dozen bottles of So-and-So's digestive fluids. To these people—who know more or think they do than all the medical profession in the world—I say: Throw away your patent medicines, go to "those blessed islands" of Columbus, drink of nature's greatest remedy—"pineapple juice," fresh and sweet—live temperately, avoid highly spiced foods, and be cured.

Just one word concerning the constipated woman, who has to take "physic" every day of her life. Try on her the effect of a trip to Nassau, and, instead of the usual amount of cathartic medication, just let her drink a quart of fresh pineapple juice during the day.

The people and government officials of Nassau will be found obliging and willing to serve strangers in every way. There is no formality; hospitality abounds on every hand, from the rich Nassau merchant to the poor humble "colored brother" at Grantstown. No pen can describe the quaint sights or funny sayings to be seen and heard among these primitive descendants of captured blacks liberated from Congo slave ships. I have never yet seen a person who has once been to these islands but wishes to return once more to them for just one more happy stay among these contented, happy islanders.

Living is cheap comparatively; the hotels and boarding-places are clean, neat, and pleasant. Outside expenses need not amount to very much.

How to get there is simple and easy. Take one of the handsome and well-equipped steamships of the New York and Cuba Mail Steamship Company (James E. Ward & Co., 113 Wall Street, New York, agents), some cold, sleety, disagreeable Thursday afternoon this winter, from Pier 17, East River, and after a pleasant life-giving sea voyage of four days—during which you have been fed like a nabob and lodged like a lord—you are landed at Nassau the following Monday morning; or, if you are a poor sailor, go *via* a "Florida special" to Miami, and take the Flagler Line steamer direct to Nassau. But whichever way you go, when you start to come back you will leave good, quaint, old Nassau with many regrets.

One word in closing for the medical profession as found in Nassau. Without any exception, they are well-read, busy, good fellows, always glad to welcome a visiting professional brother and to do anything to make his stay among them pleasant in every way.

THE ASHEVILLE PLATEAU IN THE MOUNTAINS OF WESTERN NORTH CAROLINA.

BY S. WESTRAY BATTLE, M.D., U.S.N.,

ASHEVILLE, N. C.

HAVING received so many inquiries for a brief outline of the climatic conditions which prevail upon what I have chosen to call the Asheville plateau, a summary of the advantages of the region may not be out of place.

It is a common thing in this life that the harder a thing is to acquire the more desirable it becomes. The same proposition obtains in the matter of climate: the more inaccessible a place, the more virtues it possesses. It seems to me that the profession has not given to this region the attention it merits—a most desirable and beautiful section of country, in close touch with the East and North, and most accessible from all points South and West.

Nestled in the heart of the Alleghanies, cradled by the Blue Ridge and Great Smokies, stretches the Asheville plateau, the great sanatorium of Western North Carolina and Eastern United States. It enjoys a climate *sui generis*, representing the golden mean of altitude and latitude and the several meteorological conditions which go to make up a wholesome and fascinating resort. Nowhere east of the Rocky Mountains is to be found anything approaching it for fall and winter, spring and summer—an all-the-year-round retreat. It is cool in summer, yet the winters, shorn of their harshness by reason of its southern latitude, induce almost daily outdoor exercise in the way of shooting, riding, driving, or short mountain excursions on foot. For lovers of golf it is ideal: and at Asheville, the centre of the plateau, are united the comforts of a city with the delights of the country.

The plateau is an elevated tableland, somewhat triangular in shape, embracing some six thousand square miles of Western North Carolina, with a general elevation of two thousand feet above the sea level, though altitudes up to six thousand feet may be had for the climbing any day in the year. Hills, valleys, rivers, and forests so diversify this intramontane expanse as to make it lovely and restful to the eye, beyond the power of my pen to portray.

The temperature is indicated by the following table: Mean temperature of spring, 53.49° F.; summer, 70.72° F.; autumn, 53.48° F.; winter, 38.87° F.; for the year, 54.14° F.; with a mean relative humidity of 65 per cent.

There can hardly be room for controversy that right here we are enjoying the golden mean of American climate. With medium altitude, dry, tonic, invigorating, and ozoniferous atmosphere, the region cannot fail to grow in popularity as meeting the indications in the cases of a large majority of health seekers, more especially those looking for the all-the-year-round residence; and it has occurred to the writer that it should particularly appeal to the retired of the army and the navy, and to him of modest independence, who wants to enjoy his *otium cum dig.* away from the busy whirl of the city and carking care. Nor is it amiss to mention that the finest private residence in America has been built here. With good roads and inviting inns, the shadows of which are now upon us, its attractions will vie with the now popular mountain regions of Europe.

In regard to the merits of the climate, or the climatotherapy of the plateau, let me briefly sum up its advantages without bestowing indiscreet or overzealous praise. It is pre-eminently a suitable one for the early stages of pulmonary phthisis, especially for such subjects as can and will get out in the air, and are determined to take the benefit of the dry, tonic, invigorating, bracing qualities thereof, and keep good hours. Conditions which seem to favor germ propagation and prolong the species of the genus bacterium do not exist here. Wounds heal kindly and operative procedures of the gravest character are rarely followed by septic infection.

The mortality from pulmonary phthisis is not large in any part of North Carolina, being, according to the mortality tables of the tenth census (1880), 13.4 for every 10,000 of population throughout the State. But it is interesting to note that the mountain counties show a mortality of only 10.6 in every 10,000 of population, as against 16.1 for every 10,000 of population of all the other counties of the State in the aggregate; or in other words, in a State where pulmonary phthisis does not figure prominently in the mortality tables the death rate is still fifty per cent. less in the mountain section than in the other lower-lying portions of the State.

Among other conditions indicating the advisability of a sojourn in this region may be mentioned asthma, hay fever, convalescence from malarial and other fevers (there are no lakes or swamps, and malaria is unknown), nervous prostration, and exhaustion from

overwork or long-continued summer heat; as also chronic congestion of the internal organs by reason of diminished atmospheric density causing a determination of blood to the surface—hence arises one of the benefits of altitude in incipient phthisis. Nervous energy and muscular vigor are usually increased, and the nutrition of the body and the general condition of the blood improved by a sojourn at moderate elevation; above six thousand feet the appetite for food is diminished and the digestive organs are frequently disordered, whereas a medium altitude usually increases the desire for food and quickens digestion. By reason of its medium altitude contraindications to a residence upon the plateau are few, though organic disease of the heart, in which the circulation is much disturbed, must not be lost sight of. Of course those who are in advanced phthisis, and are too feeble to breathe the outdoor air and take some sort of outdoor exercise, are better off at home with their friends, surrounded by comforts that cannot be supplied elsewhere.

Since the above was written, Surgeon John W. Ross, who retired from active service in the United States navy in 1894 on account of retinitis, has returned from a visit of inspection and careful study of certain of the veteran tuberculous sanatoria in Germany, particularly those at Falkenstein in the Taunus, and Reiboldsgrün in Saxony, where such admirable results have been and are still being obtained; as well as the more recently established institutions at Ruppertshain and Albertsberg for the cure of the poor afflicted with phthisis. Dr. Ross returns convinced that the climatic conditions of the Asheville plateau are the most favorable, all the year round, that he has ever experienced for the cure of patients afflicted with tuberculosis; and that a properly constructed, equipped, and conducted sanatorium here would give better results than those obtained in Germany.

The doctor's opinion is of value, for while in active service in the navy and since his retirement he has given special attention to the study of pulmonary tuberculosis with special reference to its climatic and hygienic treatment, having visited many of the best and most popular consumptive resorts in the United States, South America, and Sandwich Islands, besides those of the Old World; nor has this conclusion been reached hastily, as he had occasion to spend months here several years ago.

THE URGENT NEED OF SANATORIUMS FOR THE CONSUMPTIVE POOR OF OUR LARGE CITIES.*

By S. A. KNOPF, M.D. (Paris and Berl.), N. Y.

[illegible] NOSE HOSPITAL; FORMERLY ASSISTANT PHYSICIAN TO PROFESSOR DETTWEILER [illegible] ICAN ACADEMY OF MEDICINE; FELLOW OF THE NEW YORK ACADEMY OF MEDICINE, ETC.

THE question what to do with the thousands of tuberculous patients who inhabit the tenement districts of our large cities, unconsciously disseminating the germs of their diseases among their own kin, friends, and neighbors, or who crowd the wards of our general hospitals to the detriment and danger of the patients suffering from acute diseases, has become for the sanitarian one of the vital issues of the day.

In Europe such men as von Leyden, of Berlin;[1] von Schroetter, of Vienna;[2] Grancher[3] and Letulle, of Paris;[4] Weber, of London;[5] and in this country Biggs and Prudden, of New York;[6] Bowditch[7] and Otis,[8] of Boston; Flick,[9] Hinsdale,[10] and Lee,[11] of Philadelphia; Hamilton, of Chicago;[12] and many others[13] believe the only solution to be the erection of special sanatoriums,* preferably under municipal control. I myself have pleaded for sanatoriums for the consumptive poor on previous occasions,[14] and I now renew my plea before you, wishing to show again the urgent need for such institutions.

In Europe the pleadings of the profession for establishments of this kind have not been in vain; Germany alone can boast of over thirty sanatoriums for the consumptive poor, already in working order or in the course of construction, most of them under municipal control.[15] In the United States there are only two or three, partly supported by private charity, and not one institution which we may justly call a municipal sanatorium for the consumptive poor. Only recently we of New York and you of Pennsylvania have had the painful experience of seeing the chief officers of our respective States veto appropriations intended to create institutions which might have become the nucleus of more efficient work than has ever yet been accomplished in the United States in the extermination of this dread disease.†

Far be it from me to criticise the action of these distinguished governors, who thought to serve their State best by vetoing an appropriation which seemed to them unnecessary.

To convince them of their error, to convince the many of our fellow-practitioners who also deny as yet the need of special institutions for the consumptive poor, to show to the philanthropist a most practical and noble way to do good, not only to the consumptive individual but indirectly to the whole community—I will ask them all to accompany me for a moment on a little excursion to the crowded tenement district of one of our large cities. Let them visit there with me some of the consumptive poor who live in these houses, in all the various stages of the disease, from the incipient case of pulmonary tuberculosis to the last hectic stage of consumption, with all its pitiful manifestations of the slow ebbing away of human life.

Let us leave our comfortable homes, and enter the narrow streets of those districts, crowded with humanity. We make our way into a house through the little world in rags playing on the sidewalks. The hallways are dark, and the odor indicative of crowded and unclean rooms greets us. We ascend one or many flights of stairs, in the rear or in the front—it makes little difference. There lives Mr. So-and-So, with his wife and several children. They occupy two rooms, rarely three; but only one receives direct light and air. And in these few rooms live, cook, eat, sleep, and often work from eight to ten human beings.

We inquire after the patient, and find him lying on a couch or bed in a dark bedroom. We examine him, and find him suffering from pulmonary tuberculosis in the last stages. On examining the other members of the family, we find one or two of them already "touched" by the deadly germ.

In an audience of sanitarians there is no need to explain how the other members of the family have been infected. But I invited to my excursion some

* Read at the twenty-fifth annual meeting of the American Public Health Association, held in Philadelphia, Pa., October 26–29, 1897.

* Contrary to the custom of many English-speaking people, especially in the United States, I call these establishments *sanatoriums* and not *sanitariums*. The former, from *sanare*, to heal, gives a better equivalent to the German "Heilanstalt," the word used by the originator of this system (Brehmer). Secondly, the word sanitarium, from *sanitas*, health, is usually employed to designate a place considered simply as especially healthy, a favorite resort for convalescent patients.

† A decidedly different view must have been taken by the chief of a European State. At the recent twenty-fifth anniversary of King Oscar's accession to the throne of Sweden, a deputation presented him with the sum of 220,000 crowns, which amount had been raised among the people. He accepted the gift, but decided that the entire sum should be devoted to combat tuberculous diseases.

distinguished laymen, and to them I must briefly explain how one tuberculous individual is capable of transmitting his disease to whole families.

A consumptive expectorates at times as many as seven billions of bacilli in twenty-four hours. If the sputum containing these germs is not properly disposed of; if it has had a chance to dry on the floor, in a handkerchief, on the clothing, linen, or the beard of the patient—it will sooner or later become pulverized and be inhaled as dust by the other members of the family. If these are vigorous and well nourished they need not fear a contamination, for in health our nasal mucous membrane has a most marked bactericidal function. But, alas! very many of the inhabitants of these tenement districts are underfed, and their unhygienic surroundings are ill adapted to increase their power of resistance to disease. It seems also not improbable that at times the bacilli floating on particles of dust in the air are deposited on the food, and thus the germs are ingested.

Numerous experimenters, such as Falk,[16] Wesener,[17] Straus, and Wurtz,[18] have shown that the gastric juice has little power to destroy the bacillus of tuberculosis, and thus if the blood, which in health is phagocytic, is of poor quality, its corpuscles will not be able to swallow the ingested bacilli. If the victim be a child, these will find the best medium for multiplication in the delicate intestinal epithelium. If it be an adult, the bacillus will find an easy abiding-place in the apices of the lungs through the lymphatic and circulatory systems.

The weakest members of the family soonest fall victims to the disease. Fresh pure air and good healthy food, which are after all the best microbe killers, are lacking in the homes of most of these unfortunates, and thus the propagation of tuberculosis is most terrible in the tenement districts.

Compassion moves us, and through our efforts we procure a bed in one of the general municipal hospitals for the unfortunate sufferer. (Most of our hospitals supported by private charity refuse admission to consumptives.) He bids good-by to his loved ones. He is taken in an ambulance to the nearest municipal hospital. There are no special wards for consumptives, and the patient is placed in one of the general wards. His neighbor to the right may have typhoid fever; the one to the left a pleurisy *a frigore;* opposite him may be a rheumatic or a fellow-consumptive. If the physician in charge is in favor of medication, the patient will receive the latest remedies well spoken of in the treatment of tuberculosis. If the doctor is sceptical as to the value of medication in this disease, the patient may or may not receive the special diet, and the rest is left to nature. In the morning, before the arrival of the visiting physician, the poor consumptive inhales the dust, and with it countless numbers of pathogenic micobes, raised by the attendant sweeping the ward with an ordinary broom instead of wiping the floor with a moist mop. If the patient has not yet his mixed infection, he will soon get it. The consumptive in our general hospitals is almost as much deprived of fresh pure air as he has been in his home. Should he, day or night, ask to have a window open, his rheumatic neighbor would very strenuously object, for he could not stand the draught. Respiratory exercises are but rarely recommended, for the physician knows that they are useless in the ordinary hospital atmosphere. At meal times the consumptive patient eats but little. The frequent anorexia he cannot overcome, and even the special diet does not tempt him. The aerotherapeutic and hydrotherapeutic measures, so largely and beneficially resorted to in sanatoriums and special hospitals to overcome the loss of appetite, cannot be carried out in a general hospital. At night the patient sleeps but little. He is kept awake either by his own cough or by that of his neighbor. The stuffy night atmosphere of the ward furthers still more his hyperidrosis. Thus he passes weeks, sometimes months, until a fatal termination ends his sufferings.

We must leave our consumptive friend to his fate in the hospital, and return once more to his family at home. There we find most likely that they are in want, their supporter having been sick for months. In the majority of cases such a family is bound to become a public charge in the end.

This is the average condition of the consumptive poor in our large cities, and the general practitioners present will find that the picture I have drawn of the life of the tuberculous patient without means, at home and in the general hospital, has not been a fictitious one.

How can it be changed? There are in New York about ten thousand consumptives without means, and all other large cities of the union have an equal proportion.

What can the creation of sanatoriums do, in face of such appalling numbers? Seemingly little at the beginning, but much good in the long run.

Would the maintenance of a consumptive patient in a sanatorium or special hospital in or near a large city be more expensive than in a general hospital? I will answer this question by a few recent statistics which I have gathered for this purpose.

According to the last annual report of the board of commissioners of charity and correction of the city of New York, the highest daily expense per patient (in Fordham Hospital) was $2.06, the lowest daily expense per patient (in the City Hospital) was thirty-three cents, and the average expense per day per patient for all the municipal hospitals of New York is $1.16. The daily average expense in the most luxurious and most modernly equipped sanatorium for consumptives, the Loomis Sanatorium, under the able direction of Dr. Stubbert, is $1.43. The Adirondack Cottage Sanatorium, which, through the untiring effort of its distinguished director, Dr. Trudeau, has done so much good already and has saved so many lives, expends for each of its patient $1 per day. While in these two institutions patients with only incipient phthisis are admitted, at the Chestnut Hill (Philadelphia) Hospital for the Consumptive Poor, with Dr. J. Solis Cohen, the distinguished laryngologist, as visiting physician, and Dr. Bacon as house physician, consumptives are admitted even in the very advanced stages. Still this institution was able to obtain very satisfactory results indeed, as is shown by the latest report: Discharged as cured, 8 per cent.; improved, 11½ per cent.; unimproved, 6⅔ per cent.; died, 17⅓ per cent.; and the average daily expense was only between thirty and forty cents.

The value of isolation may best be shown by the work of St. Joseph Hospital for Consumptives of New York, where the most of the patients admitted are in the last stage of the disease. Dr. Cauldwell, the physician-in-chief, very kindly gave me the following information: This institution receives annually fifteen hundred consumptives, at an average daily expense of about fifty cents per patient. Dr. Cauldwell does not claim to be able to do more than care for them under existing circumstances, although a goodly number are discharged able to work again. But, leaving aside the curative results, St. Joseph Hospital, by taking care of fifteen hundred patients coming from among the poorest classes, suppresses annually fifteen hundred foci of infection. How many lives may not thus be saved indirectly?

Of course at Liberty, Saranac Lake, and Sharon, in view of the fact that these institutions are intended only for incipient cases, the curative results are

much more favorable. Thus Dr. Trudeau could report from thirty to thirty-five per cent. of cures with an average stay of eleven months ten days. This shows, as Dr. Trudeau well remarked in a recent letter to me, the very great importance of early diagnosis.

At the Liberty Sanatorium, of the patients who remained over three months in the institution fifty per cent. were improved, and about twenty-five per cent. cured. With those who stayed a shorter period the results were less favorable.

Dr. Vincent Y. Bowditch, of the Sharon Sanatorium, near Boston, reports twenty-five per cent. of "arrested cases" and a much larger percentage of improvements. Such results are remarkable indeed, considering that this latter institution is situated but a few miles from a large city and does not claim any special climatic advantages.

But aside from the considerable number of cures which can be effected in a sanatorium for consumptives, especially when the hygienic and dietetic treatment under constant medical supervision is strictly adhered to, there are other sanitary advantages of inestimable value which a community would derive from the creation of one or several sanatoriums for the consumptive poor. In a perfectly conducted sanatorium, where the curable cases are cured, and the hopeless cases cared for so that it is impossible for them to propagate the disease, all patients receive a hygienic education so that they may understand why they should expectorate only in a proper receptacle, why they should be careful with all other secretions, what they should do or not do to avoid new colds, why it would be unwise for them to marry as long as they are not perfectly cured, etc. When the patient who has passed through such a sanatorium returns to his home cured or only improved, he will become an educational factor in public hygiene. He will not only have learned to avoid the causes which may aggravate his condition, but he will still use his pocket spittoon and tell his friends that he uses it to protect them from any possibility of getting the disease through him, and at the same time he will know that through such precaution he also protects himself from reinfection.

By excluding all consumptive cases from our general hospitals and directing them to special institutions, we shall protect a patient with a pleurisy *a frigore* from the likelihood of developing a pleurisy of tuberculous nature. We shall protect the typhoid-fever patient, with his greatly reduced power of resistance, from becoming the prey of the bacillus of tuberculosis, which up to now has been an almost constant sojourner in our general hospitals, thanks to the lack of special establishments where patients afflicted with tuberculous diseases should have been cared for.

That there is never any danger from even the multiple creation of sanatoriums in the same locality, I have endeavored to demonstrate in several of my previous writings, by citing the statistics concerning the mortality from tuberculosis before and after the establishment of sanatoriums for consumptives in certain villages in Germany. These statistics were obtained from the official documents in these respective communities. In Goerbersdorf they cover a period of one hundred years; in Falkenstein a period of forty years.

Those desiring to read them in detail I must refer to my article in the New York MEDICAL RECORD of October 3, 1896, entitled "Are Sanatoriums for Consumptives a Danger to the Neighborhood?"

Here I can only summarize by saying that in these two villages, where five of the largest German sanatoriums are situated (Goerbersdorf and Falkenstein), the mortality from tuberculosis has actually decreased among the village people, being now one-third less than before the establishment of those institutions. This, no doubt, is due to the example set by the inmates of the sanatoriums, and it is also the best proof that well-conducted sanatoriums for consumptives are not centres of infection, but, on the contrary, places where one is safest from contagion. Still more, I venture to say that properly conducted sanatoriums for consumptives not only serve as hygienic educators of individuls, but as educators of communities as well.

From what has been said, it is evident that there can be no objection to the establishment of municipal sanatoriums or special hospitals for consumptives. The sanitary advantages derived therefrom for all communities, large or small, have been clearly demonstrated. It would remain only to show that through the multiple creation of such institutions the commonwealth would be the financial gainer as well, and that these establishments would not further the abuse of medical charity from which we all suffer at the present time.

When the worthy but poor consumptive is taken in time to an institution where his chances of recovery are still good, he will have little chance to infect the other members of the family, and he is likely to return, after a relatively short sojourn, restored to health and hygienically educated, ready to become again a breadwinner and supporter of his family. Now the maintenance of this patient in a municipal sanatorium for from three to six months or even longer, during the earlier stage of the disease, will cost the commonwealth no more than if he had been taken to the general hospital for perhaps the same period of time, but in a much farther advanced and more hopeless state of his disease. If the family were absolutely destitute the members would have to be supported by the municipality, whether the head of the family were in the sanatorium or general hospital. But since, when treated in time and in a special institution, he has twenty-five to thirty-five more chances of getting well, the likelihood of the community being obliged to support a widow and several orphans has thus also been reduced by nearly one-third.

Now let me develop to you a little ideal plan of how to proceed to select the proper cases for treatment in such institutions, how to avoid unnecessary expenditure on the part of city governments, and, lastly, how to avoid admitting to free treatment patients able to pay.

A large city desiring to treat its worthy consumptive poor must have a series of institutions.

(1) There should be a centrally located reception hospital.

(2) A city sanatorium, located in the outskirts and if possible in a somewhat elevated region, where the atmosphere is known to be pure. Here all patients should pass through a preparatory sojourn before being sent to the mountain sanatorium. The more advanced cases would all be retained here.

(3) A mountain sanatorium at no greater distance from the city than three or five hours by rail, at an altitude if possible of between one thousand and two thousand feet, on porous ground, with southern exposure, and as nearly as possible protected againt the coldest winds, preferably surrounded by a pine forest. To this place the selected incipient and the improved cases from the city sanatorium should be sent to complete their cure.

The central reception hospital receives all patients applying for admission or sent there by physicians or the sanitary inspectors. The patient is not sent to either the city or mountain sanatorium immediately after an examination. He has to remain in the reception hospital for a few days, to rest and receive some instructions as to his conduct in the city or mountain sanatorium. To lessen expense of the various institutions, he is expected to aid about the house wherever he may be and work as the doctor decrees. No one

else should have a voice in this matter. In the mean time proper inquiries are made, first of the patient's former physician, and then of the most reliable source, as to his financial standing. If the patient is able to pay something, he should not be refused admission, but this money should be used to help give the physician a salary for his service, to which he is as much entitled as the superintendent. For we must bear in mind that it is the constant medical supervision of the consumptive in a sanatorium which is the all-important factor in the hygienic and dietetic treatment. And I wish to state right here that I strongly disapprove of so-called homes for consumptives. These places are mostly always without a house physician, and as a consequence the hygienic and prophylactic measures are rarely carried out to the extent of making infection impossible.

The creation of municipal sanatoriums for consumptives requires a large staff of experienced physicians, who would have to devote a great deal of their time to such service. As I have demonstrated, the commonwealth would be the gainer thereby financially. It would be a great injustice should the physician alone be the loser.

The well-to-do or wealthy citizen can receive the hygienic and dietetic treatment in his private home or in a private institution. For the consumptive poor and those able to pay a moderate price, we need a large number of institutions under city-government control.

Our prophylactic measures, no matter how strict, will not suffice to do away with the centres of infection daily created anew in our tenement districts. To prevent the hopeless cases from communicating the disease to the large number of susceptible individuals with whom they will come in contact, to give the tuberculous patient yet in the early stages of the disease, but with little or no means, the best possible chance of becoming a well man and a useful citizen, we need municipal sanatoriums. Let physicians, statesmen, and philanthropists unite to further the creation of such institutions, for through them I think we shall not only alleviate much suffering, but may solve one of the most important and difficult problems in medical and social science.

26 Madison Avenue.

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TUBERCULOSIS—THE PINE BELT OF SOUTH ALABAMA VERSUS HIGH ALTITUDES.

By KIETH FONDE, M.D.,

Citronelle, Ala.

Is it not a fact that most physicians treating tuberculosis to-day are sending the vast majority of their patients to the high altitudes, without remembering the long list of contraindications? The fact that physicians of the mountains have furnished in this country almost all the literature on the subject of climatology is perhaps responsible for this. It is true, I think, that in any series of unselected cases a large majority would show positive contraindications to high altitudes. While I do not deny that high altitudes have a well-deserved place in therapeutics, it is only for a certain, or, I should say, one class of tuberculous patients. The writer believes, and proposes to offer some evidence to show, that sea air, if at sufficient elevation (three hundred to five hundred feet) and far enough inland (thirty to seventy-five miles, these figures being arbitrarily chosen), and preferably in a pine forest, with sandy soil and hills to insure perfect drainage, is far more beneficial to the majority of cases of tuberculosis than is the inland mountain air. As a type of such a location I select Citronelle, Ala., thirty-three miles north of Mobile, on the Mobile and Ohio Railroad, at an altitude of three hundred and sixty feet above the sea, the highest point within this distance of the coast between Boston and Galveston. Most parts of Florida are too low and moist; the deep sands make exercise unpleasant, and the glare and mosquitoes are disagreeable. Moreover, cottages are preferable to most of the hotels and large buildings. One patient then does not annoy others by coughing, etc. Patients are more separated, and the rooms of cottages are less likely to lack sunshine and ventilation than are those of large buildings. Citronelle, however, has the advantages of excellent waters, chalybeate and freestone from bold springs, and of being surrounded on all sides by high pine forests, and also of being easy of access from the north and east. A comparison of the available official reports, kindly furnished me by Dr. J. G. Michael, of Citronelle, observer of the United States weather bureau, shows that for each of the months of December, January, February, and March, from December, 1888, to March, 1894, inclusive, at Citronelle the minimum temperature averages fifteen degrees higher than at Asheville, N. C. The average maximum for the same period shows seven degrees warmer at Citronelle.

If we bear in mind that "chronic ulcerative phthisis includes the great majority of all cases of pulmonary tuberculosis, . . . and that a majority of all cases of pulmonary tuberculosis are combined infections," and the great importance of secondary infection, as emphasized by Prudden,[1] and that these cases are not suited to high altitudes, we shall use more discretion, prolong many lives, and gain a better record in the treatment of this disease. In Hayem's "Physical and Natural Therapeutics" (Paris), edited by Prof. H. A.

[1] New York Med. Jour., 1894, ii. Osler's "Practice of Medicine," 1896, 2d edition.

Hare, 1895, we find the many contraindications to high altitudes laid down by very high authority, and at the same time we learn something of sea air and coast climates[1] as follows: "The regularity in direction and time of the wind, the state of barometric pressure, the great intensity of the sunlight, the high proportion of ozone, the absence of dust, and the presence in the air of small particles of sodium chloride and traces of iodine and bromine. The physiological action of sea air has been investigated by a number of authoritities, especially by Beneke. It has been found to influence strongly the general nutrition, even in a more marked degree than sea baths. The surface of the body is cooled more quickly on the seacoast than in inland stations; the nutritive processes are active; the quantity of urine, the excretion of urea and of sulphuric acid are greatly increased, while that of phosphoric and uric acid is diminished. The body weight is also augmented. There is generally a fall in the number of respirations and pulsations; sleep improves, and the nervous system is slightly stimulated. The last effect may, however, be so marked that in impressionable persons it causes insomnia."

Let us see what further evidence there is at hand to support the proposition that the Southern coast climates do not obtain the medical patronage they deserve.

Dr. Solly, the able representative of the high-altitude advocates,[2] says: "Cold dry winds simply stimulate or else irritate the patient and hence improve relaxed catarrhal conditions, but make those which are inflammatory worse." On this point Hayem says: "A cold dry climate diminishes the cutaneous evaporation and increases the loss of heat; it predisposes to catarrhal, rheumatic, and renal affections." Dr. Solly proceeds: "Warm moist winds act as a tonic or increase irritability.[3] Apparently, humidity of the air, apart from other factors, does not in itself produce phthisis. The comparative immunity from consumption among the men of the British navy contrasted with those of the army, and the rarity of the disease in many islands, show this." Yet Dr. Solly collected a series of seven thousand seven hundred and ninety-five cases which he analyzed, and this led him to state that "an almost steady rise in the percentage of improvement toward the highlands" occurs. He says, however, of these cases: "It must, of course, be admitted that the material of which the cases are composed is too variable in quality to allow of any close comparison of results, but, as the number of cases and of reporters is so great, the law of average comes in to help us." And he closes the subject[4] by saying: "With regard to the elevation, high altitudes are of benefit to the majority of cases of phthisis, particularly those of a tuberculous type."

Ingals[5] says: "There is no climate to which consumptives may be sent indiscriminately, but suitable places should be selected for each patient. Some patients do better in cold weather, but the majority are better in summer. It will be found that those who feel best in winter are likely to be benefited by a comparatively cool climate, the others in a warm climate."

Without making further quotations I will venture the assertion that those subjects of pulmonary tuberculosis or chronic bronchitis, who are expectorating tough tenacious matter, especially those of irritable or of nervous temperament, will stand a far better chance of clearing their lungs of this infectious material in a climate virtually of pure sea air with its ozone and moisture. The latter, if not in excess, is more beneficial in these cases than the very dry atmosphere that tends to render the sputum more tough and tenacious, and more difficult to expectorate, the consequence being that many germs are retained that would be thrown off. The effect of moisture, I think, is demonstrated by the use of vapor inhalations under compressed air. Dr. Solly acknowledges the value of such inhalations:

"It is probable that the chief benefit is derived from the cleansing and stimulating of the bronchial tubes and from the deep-breathing exercises." This treatment, he continues, "should be carried out every day until the cough and expectoration become moderate." I believe it should be continued until there is no purulent expectoration, but Dr. Solly says: "It is probable that at sea level inhalations are more efficient when given in connection with treatment in the pneumatic cabinet."

In the treatment of secondary infections I prefer a McBride inhaler to the Globe. If the rubber tubing be made to fit closely, the vapor is inhaled under some pressure. A separate glass mouthpiece can be used for each patient, and these kept sterilized in separate glasses. The instrument can be thoroughly cleaned. If care is used in turning on air from the tank, a more or less perfect "aerial lavage"[1] is obtained, and I prefer a watery vapor like the following to balsamic vapor for most cases; the watery vapor liquefies the expectoration, so that coughing brings the matter up without great effort, and the lung is cleaned better: Carbolic acid, two to three per cent.; benzoate of sodium, five to ten per cent.; oil of eucalyptus or oil of cinnamon, one part to three or five hundred parts; glycerin, about ten per cent. In some cases lime water, fifty to seventy-five per cent., can be used instead of the benzoate. The decided alkaline reaction aids the solution of mucus, and the essential oils stimulate the glands of the bronchial membrane besides being measurably germicidal. This vapor is pleasant to inhale, and if the oils are alternated the patient does not tire of the taste. These drugs of course have been each used before, but, so far as I know, not in combination. Again, I think that in all incipient cases, and in those beginning to expectorate purulent matter, we should see that the tooth brush with an appropriate mouth wash is regularly used before each meal, for who can say how long a tuberculous focus may remain local?

In this way we may delay infection of the intestinal canal, for "in adults the lungs usually contain tubercle when it is present in the body (Louis' law)." A pure tuberculous infection, as a rule, is slow in its progress, and if those who come to you for their persistent cough, or after their first hemorrhage, were immediately removed from the impure atmosphere of a city (or from their trade) and their secondary infection, present in the vast majority of cases, carefully treated, you would prolong such lives and give them a far better opportunity of obtaining an arrest of the disease. You send such a patient more often to the cold dry atmosphere of the high altitude; he is usually restless, with rapid pulse and respiration, more or less fever, uncertain of rest after his arrival, and has an opiate cough mixture to help retain the germs he might otherwise throw off. I would suggest a different course, viz.: send him to an appropriately sedative climate, where he can go out almost every day of the year, and you have done the best. In selecting the point to which your patient shall go, the cold raw winds of the Atlantic coast region must not be lost sight of. It is for this reason that I have preferred the Pine Belt of Alabama.

[1] Pp. 56, 57.

[2] "System of Practical Therapeutics," edited by H. A. Hare, vol. iv., 1897, p. 68.

[3] Ibid., pp. 87.

[4] Ibid., p. 71.

[5] "Diseases of the Chest and Nasal Cavities," 1895, pp. 174, 175.

[1] Inhalation.—Examiner.

LOOKOUT MOUNTAIN AS A HEALTH RESORT.

BY W. A. DETTRICH, M.D.

DURING the spring of 1888, while practising my profession in northern Indiana, it was my misfortune to contract pulmonary tuberculosis, for which I consulted the late Dr. Joseph P. Ross, of Chicago, and through his advice I sought a residence on Lookout Mountain. A full description of my case was published in the *Journal of the American Medical Association* of August 16, 1890, but suffice it to say that I have entirely recovered my health.

Lookout Mountain has been known in history ever since Hooker fought his famous "battle above the clouds," but further than this scarcely anything has ever been said of it, and little is known of it as a health resort by our Northern brethren. The mountain rises abruptly from the Tennessee River until it attains a height of seventeen hundred feet above the river, and twenty-two hundred and eighty feet above sea level. Lookout stands alone in its majestic beauty, being separated from all other mountain ranges by a wide and fertile valley. The top, or plateau, is an undulating surface, beginning at a point at its northern extremity and gradually widening out as it runs southward until it reaches a width of a mile or more. It extends across the line into Georgia, but it is only of that portion of the mountain lying within the borders of Tennessee that I shall speak, as it is the only part that is of easy access. The greater part of this plateau comes to an abrupt end, where the rock seems to have broken off precipitately and left a perpendicular bluff several hundred feet high. The soil is light and sandy, absorbing moisture so rapidly that within a few hours after a rain a person can go out walking without fear of getting damp feet. A large part of this plateau was cultivated previous to our civil war, but since then it has grown up in primitive forests of pine and oak, with the former predominating.

It is impossible to give a pen picture of this grand old mountain by which any effort of the imagination can form an idea as to its beauty and grandeur. To say the view from its top is grand would not express it. It is not only grand, magnificent, sublime, but also very entrancing. The scenery is varied from every point of observation, and to the lover of nature are presented views of which he will never weary, and this of itself will urge invalids on to keep out of doors and ramble from place to place. From its lofty summit seven different States can be seen, and with the city of Chattanooga lying at its base, with its fifty thousand souls, and ten different trunk railroads centring there, it affords a scene not to be found elsewhere. Its beauty can be appreciated only by the eye of the beholder.

Unfortunately the meteorological records (except its temperature) have never been taken until within the last year, but, comparing what we have with the observations taken in the city of Chattanooga, we can form a fairly good estimate. The mean annual temperature is 54° F., with a mean annual range of seventeen degrees. During the winter the temperature seldom falls below freezing, and only once during the past five years has it fallen as low as 2° F., and that last winter, while only fifty miles north of us it registered — 12° F. During the summer the temperature has risen above 88° F. only five times, and that occurred the past summer. The snowfall has been almost *nil*, with the exception of once last winter, when there was a fall of about nine inches. The average number of clear and fair days during the entire year is twenty-four in each month. It is impossible to give the rainfall, as no exact data have been kept of it. The average relative humidity can only be estimated, from that of Chattanooga. The United States weather observer there says it is at least 5 per cent. less than that of the city, and, as it is 71 per cent. in Chattanooga, that of the mountain must be 66 per cent. or less. The air is relieved of a great deal of its moisture as it is wafted across the mountain ranges surrounding Lookout on all sides, thus giving us a dry atmosphere. It is free from all micro-organisms and impurities, and there is nothing here to contaminate it. Sunshine is abundant, and gentle breezes are always blowing; sultry days and wind storms are unknown. The air is invigorating, it having neither the debilitating heat of the Southern clime nor the severe storms and cold of the Northern to affect us.

Dr. Wight, after a thorough investigation, states that consumption has never been known to occur among the natives of the mountain. Malaria seldom if ever occurs; at least I have never seen an original case of malaria or consumption during my five years' residence here; but, on the contrary, I have carefully watched the progress of a great many consumptives who came to Lookout with the hope of improving their health, and if possible receiving a cure. With very few exceptions, those who sought a residence here were either benefited or cured. The most of those who received no relief were so far advanced with their disease that it was utterly impossible for them to be benefited anywhere. Those with an acute affection naturally found the quickest relief, while those with the so-called fibroid phthisis improved slowly; but with proper care, diet, and exercise, every one (unless too far advanced) would find almost immediate relief, and if they remained long enough a cure would result in the great majority of cases. Consumptives, after visiting some of the other health resorts, such as California, Colorado, Texas, and Florida, and receiving no benefit, have come to grand old Lookout, and their improvement has soon became apparent. I recall, for instance, the case of a young gentleman, a professional brother, with phthisis, who had spent some time in Colorado and New Mexico seeking relief, but, failing to find it, had returned home, as he thought, to die. While at home he was advised by Dr. Ross to try this place. He did so, arriving here about January, 1889, and remaining until the following August, when he again returned home, to all outward appearances a healthy man, but still having a slight induration in the lung. He then went to California to practise his profession, but, after residing there a year or two, his trouble had increased so far that he died. I could cite numerous other cases like this: some patients remained long enough to receive a complete cure; others, after receiving a partial cure, would return home, thinking they could not remain away from business any longer. The one great trouble with consumptives going to a health resort is that they will not remain long enough; as soon as they are on the fair road to recovery they become anxious to return to their families, friends, and business. When invalids are sent away from home and relatives to seek a new clime, they should be instructed to remain (providing they improve) until their attending physicians say their health is entirely restored.

Other diseases that are benefited by a residence on Lookout are insomnia, nervous prostration, asthma, bronchitis, and the enteritis of infants. Children are frequently brought to the mountain during the summer months with cholera infantum, so sick that physicians say they could not possibly live more than a day or two in the city; yet, as if by magic, they commence to improve almost immediately after reaching its summit, and that with very little medicine. Only a few weeks ago Dr. Bowen, of Paris, Ky., brought his baby suffering from enteritis to the mountain, carrying it upon a pillow, and not thinking that it could pos-

sibly live. The child soon began to brighten up and feel better, and a few days ago they left the mountain with a healthy baby, and feeling very enthusiastic concerning the climate of this place.

Lookout Mountain is accessible by rail from every point of the compass. It has an incline and standard-gauge railway connecting it with Chattanooga, thus giving quick and easy access to that thriving city. Dr. J. A. Robinson, of Chicago, says: "The ideal requirement for the treatment of consumptives is a combination of all the requisites of a perfect climate, and also the opportunity to enjoy city life with its attendant evidences of civilization." He further says that the only locality where there is a possibility of such a combination is Lookout Mountain, Tenn.

It is an all-the-year climatic resort, and has the advantage over the other resorts in being within easy reach of all Northern and Eastern cities. The water supply is abundant, and as pure as can be found, consisting entirely of mountain spring water, either free-stone or chalybeate.

The facilities for entertaining invalids and tourists are now everything that could be desired by the most fastidious tastes.

SOME MISCONCEPTIONS OF NEW MEXICO CORRECTED.

By WILLIAM CURTISS BAILEY, A.M., M.D.,

FORMERLY INSTRUCTOR IN CLINICAL MEDICINE, [illegible]

The peculiar location of Las Vegas Hot Springs, and the conditions prevailing here, are not always clearly understood by the profession. Situated in the northern portion of New Mexico, it becomes a part of the tablelands of that territory. A study of its climate and general surroundings necessarily includes a study of the climate and topography of New Mexico, yet it has conditions distinctly its own.

Nestled in a little valley at the entrance of a cañon, which at this point is broadened, Las Vegas Hot Springs is surrounded four-fifths of a circuit by foothills of the Rockies, sufficiently high to protect it from severe winds and modify its temperature. It is watered by a brisk mountain stream of considerable volume, named the Gallinas River, which originates as a series of springs a few miles up a cañon of the same name. In the immediate vicinity of Las Vegas Hot Springs are thirty or more thermal springs, varying in temperature from warm to 144° F. An analysis shows that saline elements mainly predominate, although in some lithia is found, in others sulphur, in others iron, and in all free carbonic-acid gas exists in abundance. In the same field with the spring is located a natural peat bed, of no inconsiderable value as a medicinal agent. Las Vegas Hot Springs is six miles from any considerable centre of population. The hills and mountains encircling it are covered with trees and verdure, the principal trees being piñon, pine, and cedar. The soil, thus held down by roots of various kinds, is not readily disturbed by winds: hence no sandstorms occur at this place. Besides its location at the entrance of a cañon, Las Vegas Hot Springs is situated upon the northern slope of the Canadian Valley. This valley is protected on the west by the true range of the Rockies, which extend north and south through the centre of the territory. A spur of the Rockies, projecting at right angles from the main range along the New Mexico and Colorado line, marks the northern protection. These two ranges form a barrier against most storms arising in the Great Northwest, and modify the extremes of climate in the valley to a considerable degree.

The latitude of Las Vegas Hot Springs is an interesting one. It is the same as is found in the northern part of Africa and Arabia, portions of the world known to be the driest. Its longitude bisects that dry area which, beginning in the northern part of Texas, extends in a northerly direction through New Mexico and into Colorado. Instead of the extreme heat supposed to prevail in northern New Mexico, because of its southern latitude, it is a fact that the weather is decidedly cool and bracing during the summer months. Oppressive days are never known. This is explained by the height above sea level, the altitude being 6,767 feet. While the altitude modifies the extremes of summer, the protection afforded by the Rockies on the west and the eastern spur along the Colorado border on the north modifies equally well the extremes of winter.

A study of the great storm centres is essential to an appreciation of the difference between the area of great precipitation and the high tablelands of New Mexico. Such study is essential in order to understand why these high tablelands have attracted the attention of the profession as a refuge for people seeking health. Such study will convey a clearer idea than generally prevails of what is actually found upon observation.

In the eastern section of the United States the area of the greatest precipitation is found around the great lakes and certain portions of New England. The precipitation lessens somewhat as one approaches the Atlantic coast. It lessens to a greater degree and with considerable uniformity as one travels westward from the section above mentioned. After one has passed the Mississippi, the rainfall is found to decrease with rapidity, especially after that portion of the country is reached where there is considerable elevation above sea level. In eastern Kansas, for example, the annual rainfall is recorded as thirty inches; western Kansas, as twenty inches. Passing west from this State the elevation is noticeably rapid, and the annual rainfall is soon found to be only fifteen inches. When one has reached Las Vegas Hot Springs the annual precipitation is reduced to 12.7 inches. If one draw a line in a northerly and southerly direction along the western boundary of this great area of precipitation, which line shall represent a monthly rainfall of one inch or more, such line will be seen to vary in location and contour according to the month for which it is drawn. For example, in January it will be found on the average between longitude 95° and 100° W. All of that section of the United States east of this line, to the Atlantic coast inclusive, has an average monthly precipitation of from one to six inches or more. West of this line to the western slope of the Rockies, the monthly precipitation does not average one inch. In February the line has travelled a little west, on an average about two or three degrees. In March it has reached longitude 100° W. In April, in its northerly portion, it has covered Colorado, and has met with the Pacific storm centre: but New Mexico is still exempt, except in its northeastern corner. By June New Mexico is mainly covered. The precipitation in New Mexico from this time until September has considerably increased. The storm line now must be drawn along the western border of Arizona, and the average precipitation in New Mexico has become two or three inches. By September the storm line begins to recede. By October it has reached the eastern portion of New Mexico. By December it is nearly back to the eastern extremity. It is thus observed that while all portions of the United States east of longitude 97° W. have a continuous monthly average of more than one inch, New Mexico is exempt during this portion of the year. But while it is true that New Mexico is thus exempt, there is no month in which

some precipitation is not recorded; there is no month in which there are no stormy days; there is no month in which there is not danger from exposure. The advantage is found in the difference in amount of precipitation, which gives New Mexico a far greater number of days of sunshine per year, with a minimum number of stormy days, together with all the benefits which naturally follow from such excess of sunshine and such diminution of precipitation.

The directions not infrequently given by physicians to patients sent to this territory are something like this: "Go to the tablelands of New Mexico, where are dryness, altitude, and excess of sunshine. Select a home, on ranch or in town, where you may obtain wholesome food. Live out of doors all you can. Seek medical advice when required. Depend upon climate and exercise to restore you to health." This is wholesale advice prescribed in a wholesale way, with evident unfamiliarity with the general results accruing therefrom. Patients should be more carefully selected to whom such advice is given. The prescription should be more explicit, and warnings more frequent. It should not be expected that invalids whose constitution is impaired by disease; whose vitality is reduced below the normal; who are surrounded with home comforts and luxuries; who have been more or less under close medical supervision; who are, as a rule, unfamiliar with the favorable or unfavorable conditions affecting the disease which compels their absence; who, since they are invalids, are in no wise proper persons to direct their own case—can safely exchange home life for ranch life, to "rough it" as best they may.

It is interesting and instructive to pass through any of the trains bound west, especially during the winter months, and note the type of people seeking health, particularly those of a tuberculous character. It is not an infrequent occurrence that some of these fail to reach their destination alive. It is not unusual to find some so far advanced in the disease as to be unable to sit up during the journey. Others, less advanced, may walk about, but display evidences of streptococcus fever. Others, again, can scarcely be recognized among the well. If we follow these people from the train, and observe their attempts to regain health, we find that on an average fifty-three per cent. fail. Nearly all advanced to the third stage of the disease, that stage which Koch says has ceased to be tuberculosis, but is pus fever, die within a brief period after arrival here. Among those less advanced, imbued with the spirit of exercise, the result is fatal in a considerable proportion. It is an error to presume that patients unfitted to conduct their own case at home without medical supervision can do so in New Mexico. It is an error to presume that invalids who have made no special study of climatotherapy shall know how intelligently to obtain favorable results, because removed to a location possessing improved climatic conditions. It is an error to presume that any of nature's remedies are exempt from the generally recognized law that intelligence and experience shall direct their use. Whereas it is true that in the tablelands of New Mexico are found excess of sunshine, increased dryness, higher altitude, a minimum of precipitation, and less variation of temperature than in other sections of the continent, yet it is not all sunshine. There are cloudy and there are stormy days. There are days that have considerable wind. There are times when it is dangerous to expose one's self. There is an intelligent way to take advantage of the conditions prevalent here, and there is an erroneous way. There is, perhaps, no section possessing so great a union of nature's forces favoring restoration to health, yet caution must be exercised if proper advantage be taken of it.

MEXICO—ITS CLIMATE AND HEALTH RESORTS.

By H. S. SQUIRES, M.D.,

[illegible] Mexican Central Railway.

The ordinary observer, looking at a map of the republic of Mexico and noting that the tropic of Cancer passes almost through the centre, probably infers that the climate is warm in the winter and insufferably hot in the summer months. He does not know, or fails to consider, that the principal cities are located on a plateau which varies from thirty-five hundred to eight thousand feet in elevation, and that this elevation so modifies the climate that his inference is wrong in nearly every particular. The fact is that from the snow-capped mountains which overshadow Mexico City to either coast, every variety of climate is to be found.

But to the physician seeking a place for his patients and for tourists and invalids the climate of the plateau from El Paso, Tex., to Mexico City will be of particular interest. After the Rio Grande is passed, the first city of any importance and one whose climate may be taken as a type of the first and lower plateau, is Chihuahua. It is at an elevation of about forty-five hundred feet above the sea. Here the different seasons are more marked than they are farther south. The coldest months are from November to February, and during this season the cold is sufficient at night to make a grate fire comfortable, but during the day the air is bracing and warm enough to make it pleasant to sit out of doors without extra wraps.

The summer climate of Chihuahua is very agreeable, and often, when the heat is oppressive on leaving El Paso, one finds on his arrival at Chihuahua that, although he is two hundred and twenty-five miles farther south, the increase in altitude of one thousand feet can be appreciated by the cool bracing air. As one goes farther south from Chihuahua to Mapimi, Lerdo, and Torreon, the cold of the winter months grows less and the climate becomes more equable all the year until as he continues south he reaches Zacatecas, at an elevation of eight thousand feet, which place may be said to be the gateway to the higher plateau, whose elevation ranges from five to eight thousand feet, and on which are located the cities of Aguas-Calientes, San Luis Potosi, Leon, Lagos, Silao, Queretaro, Guadalajara, and Mexico City. And on this plateau the health and pleasure seeker finds the ideal climate, both winter and summer.

December and January are the coldest months. Even then the thermometer rarely reaches the freezing-point. Stoves are unnecessary, although all the new hotels are supplied with means of heating the rooms, as invalids sometimes find it chilly at night from the light air of this altitude. But the most delicate constitution would not need artificial heat after nine o'clock in the morning, for by that time the sun is well up, and the last particle of chilliness is out of the air. The days are delightful. The blue cloudless sky day after day becomes almost monotonous. Every day is clear and bright, and although one knows that at this season snow and cold are holding the greater part of the people of the United States within doors it is hard to realize it, for here the public gardens (and every Mexican town has two or three) and flowers are in bloom and the natives are practically living out of doors.

If possible the summer climate on this plateau is superior to that of the winter. As a rule the rains begin in June and continue until October. When one speaks of the rainy season it seems to convey to the uninitiated the idea of one continual rain storm day and night for months. Such is not the case, for it

rarely rains more than two hours a day and for the remainder of the day it is clear and cloudless.

A day in Mexico during the rainy season might be described like this: One is awakened in the morning by the sunshine pouring into his room. The birds in the patio of the hotel as well as those in the gardens are singing. The fragrance of the moist ground and flowers comes into the open window with the sunshine, and aside from the clear moist air one would not realize that it had rained the day before and that this was a morning in the height of the rainy season. It seems too beautiful to remain longer in the house, and one is soon up and out into the bright sunlight. The sky is cloudless except for a little bunch of clouds near the horizon, and as the day wears on this grows larger, until by three or four o'clock in the afternoon the sun is hidden and the rain commences. Shower follows shower for two or three hours, and then the clouds disappear, and by seven in the evening the streets are dry, the moon shines out, and then the population of the town comes to take a walk and sit on the plaza, and listen to the music. One can stay there until midnight if he chooses, without fear of cold or catarrh.

At this season of the year the vegetation is luxuriant. The fields are green, the trees are dense with foliage, and every bush that bears a flower is in full bloom. The heat even at midday during the summer months is not oppressive and the nights are always cool, so cool in fact that one must sleep under at least one blanket.

The monthly summary of the Meteorological Observatory in Mexico for July shows what the climate actually is:

TEMPERATURE OF THE AIR (FAHR.).

Monthly mean in shade	62.96 degrees.
" " " sun	93.14 "
Maximum in shade	77.18 "
" " sun	88.34 "
Minimum in shade	53.60 "
" " open air	46.40 "
Total range in shade	23.58 "
" " " open air	41.94 "

While the inhabitants of New York, Chicago, and other cities of the temperate zone are dying of heat stroke, this is July weather in Mexico City.

When this fact becomes impressed on the travelling public, Mexico must become one of the great summer resorts, as it is now a popular winter resort. Aside from the climate of Mexico there are certain hot springs which for ages have been looked upon as curative in certain diseases, and the experience of the past few years has demonstrated beyond a doubt that they have all the virtues which have been credited to them.

As one comes into the country from El Paso the first of these hot springs is located at Santa Rosalia, a town of about eight thousand inhabitants, three hundred and twenty-five miles south of El Paso. The town is a short distance from the railway station and the baths are about two miles back to the west of it. Coaches are at the station to meet all trains to carry passengers either to the town or baths, where the hotel accommodations are good. The waters at the springs are highly charged with sulphur, as the following analysis will show:

ANALYSIS OF SANTA ROSALIA SPRINGS.

	Grains in Imperial Gallon.
Chlorine	.2084
Sulphur, hydrogen sulphide	.0274
" hyposulphite	.0014
Sulphuric-acid anhydrite	11.5395
Carbonic acid	.7700
Oxide of sodium	.9401
" " potassium	.0399
" " magnesium	1.5524
" " calcium (lime)	5.1629
Chloride of potassium	.0644
" " sodium	.2961
Carbonate of sodium	1.3335
Sulphate of magnesium	4.6875
" " calcium	13.3238

The diseases most benefited by these waters are acute rheumatism, chronic arthritis, gout, specific blood diseases, and chronic malarial poisoning. In this latter very marked benefits have been derived. Those who have lived on the coast and who suffer from repeated attacks of malaria, even after having left the malarial district, find that after a two-weeks' course of baths the germs are entirely eliminated from the blood.

Aguas-Calientes, as its name implies (hot water), is one of the best-known resorts in Mexico. The city has between thirty and forty thousand inhabitants. The climate is fine all the year. The hotels are exceptionally good. The plaza and the garden of San Marcus are both beautiful. Horse cars run from the main plaza to the baths and to the river, about a mile in the opposite direction to the west, and to the big silver smelter, offering easy facilities for seeing the town and enjoying outdoor exercise. The hot baths are the great attraction, and are patronized by sick and well alike. The springs are east of the town, about a mile from the main plaza. Here the hot water bubbles up through the sand in the bottom of the bathing-tanks, supplying an abundance of clean water. Some of these tanks are roofed over, allowing the full amount of heat to be retained, while others are open and the water is cooler. The bath named San Ramon is the hottest, and is considered of superior quality to the others. Midway between the plaza and the springs are other bathhouses. The water supplying these baths is brought in solid masonry-covered ditches from the hot springs above, and the water is practically the same in all. In these one finds solid masonry tubs, shower baths, and a large swimming-tank.

The analysis of the water is: Temperature, 30° to 40° C.; without reaction to litmus, except the bath San Ramon, which is slightly acid and has a small amount of sulphur. The following table shows the amount of solids in grams to the litre:

Sulphide of sodium	.020
Sulphate of sodium	.030
" " calcium	.070
Carbonate of calcium	.030
Chloride of sodium	.018
Acetate of potassium	.005
Sulphate of magnesium	.008
Residue	.005

These waters are recommended for rheumatism, skin and nervous diseases. To the south from Aguas-Calientes the elevation of the plateau is lower and the cities of Lagos, Leon, Silao, and Queretaro are considerably warmer; they are all of interest and all have fine climates. Near Silao there are very fine sulphur springs, one four and the other twelve miles from the city. The water is very hot and highly charged with sulphur, and I judge that the analysis would show a great similarity to that of Santa Rosalia, although no analysis has been made that I am aware of. The same class of diseases which find relief at Santa Rosalia are also benefited by these waters.

The whole State of Jalisco is dotted over with hot springs, but those near Guadalajara are of principal interest. The city of Guadalajara is situated a half-day's ride from the main line of the Mexican Central Railway, at an elevation of five thousand feet. There are several lakes near the city, and the river into which Lake Chapala, the largest of these, empties passes but a few miles from the city. On this are the falls of Juanactlan, which, besides being a great natural curiosity, furnish power in abundance for the elec-

tric lights and water; the result is that Guadalajara is one of the best-lighted and cleanest cities in Mexico. The buildings are all fine and the gardens remarkably beautiful, and the climate is so modified by the proximity of the lakes that it is undoubtedly the finest in the republic. A short distance from Guadalajara is Chapala, which is the watering-place of Mexico. Here wealthy residents of Mexico City and Guadalajara have their summer home, where they can enjoy the close proximity of the lake. A new modern hotel is in course of construction, and when finished will afford increased inducements to pleasure or health seekers. Horses and boats can be rented for pleasure trips. Here are found hot sulphur and iron springs, the waters being used both for drinking and bathing.

Near Mexico City are the noted springs of Guadalupe and The Peñon. Quoting from a recent report of these: "In the city of Guadalupe Hidalgo, four kilometres north of the City of Mexico, exists the famous 'Well,' whose waters are taken for every class of disease and to which are attributed miraculous therapeutic qualities, not only from their composition but from the special virtues ceded to it by the Virgin of Guadalupe." The analysis of the water, as made by Prof. Leopold Rio de la Loza, is as follows:

Temperature	21.5° C.
Density	1.00134

Chemical Composition.

Air	8.73
Carbonic acid	234.90
Nitrogen	8.00
Total c.c. per litre	251.63

Solids.

	In Solution.	Undissolved.
Sulphate of calcium	Trace.	
Carbonate of calcium	.00557	.20751
" " magnesium	.00557	.02086
" " sodium	.19275	.06035
Chloride of potassium	.10790	.06035
" " sodium	.10790	.01000
" " magnesium	.02825	.01000
Silicate of sodium	.06771	.01321
" " potassium	.03230	.00372
Iodide of potassium	Trace.	.00372
" " sodium	.07468	.00372
Silica	.07468	.00372
Aluminium	.06541	.00364
Iron	.06541	.00102
Magnesia	.06540	Trace.
Organic matters	.02907	.15978
Bituminous matters	.02907	.01800
Total grams per litre	.60264	.72618
Total		1.32882

Near the well, which is used for drinking only, are baths which are fed by artesian springs and whose composition is similar to that of the well. Pilgrimages are made from all over the republic every year to these springs, and the cures reported are indeed marvellous.

About four kilometres northeast of Mexico City are The Peñon baths. From the time of the Aztecs these baths have been renowned. Illustrious men from all parts of the world have analyzed them and decided that they compare favorably with Kissingen, Wiesbaden, Wildbad, and Ems. Recently a hotel has been built with modern conveniences and bathhouses complete in every particular, so that parties now wishing to take advantage of these springs can do so with every comfort. The analyses of the different springs vary some in detail, but one is a fair type of all. The physical characteristics are boiling water with evolution of gas, without odor or color; to the taste, slightly sharp and salt; to the touch, slightly oily.

Temperature	46° C.
Density	1.00203 at 18° C.
Reaction, slightly acid.	
Quantity of fixed matter obtained from evaporation of one litre of water	2.23 gm.

Chemical Composition.

Nitrogen	68 gm.
Oxygen	6 "
Carbonic acid	26 "
	100 gm.

Solids.

Sulphate of calcium	.0864 gm.
Phosphate of calcium	.0058 "
Bicarbonate of calcium	.2385 "
" " magnesium	.7892 "
" " sodium	.2002 "
" " potassium	.1250 "
" " iron	.0911 "
Chloride of sodium	.9875 "
Silica	.1620 "
Aluminium	.0599 "
Manganese, lithia, boric acid, and iodine	Trace.
	2.6556 gm.

Having given a general idea of the climate and resorts of Mexico, I will close with a brief *résumé* of the diseases which are most benefited by a visit or residence here.

Patients with organic heart trouble and those who suffer from advanced pulmonary disease should under no circumstance come to Mexico.

Those with incipient phthisis may get some relief, and the locality best suited to them is on the lower plateau from Chihuahua south to Torreon, or at Guadalajara. Many who seem to be in good physical condition but in whom the bacillus tuberculosis has been demonstrated in the sputum, will get but little relief in this climate. The air is so rare that for the first few days they feel better. They are stimulated and feel that they have reached exactly the suitable climate; but after this first sensation wears off the action of the heart becomes affected with the increased work, the lungs become congested, and the patient fails rapidly. Many people who have a family history of consumption, but in whom as yet the disease has not developed, find that a residence here improves their general health and the tendency to the disease disappears.

Asthmatics as a rule find relief in this climate.

Sufferers from Bright's disease, uncomplicated with cardiac disease, are much improved. In these cases pulque has been tried quite extensively. It is a mild laxative and diuretic. Much has been said for and against its use. To gorge one's self with pulque, as many of the lower classes do, practically live on it, could not fail to bring about disease of the kidneys and liver, but a glass of pulque, taken two or three times a day, has proved to me beyond a doubt to be of great therapeutic value.

Many cases of nervous prostration and insomnia have been completely cured. The warm baths, the outdoor life, with a moderate amount of pulque at dinner and at bedtime, will quiet the nerves and bring on a natural refreshing sleep, devoid of all bad after-effects.

Physicians recommending patients to visit Mexico should bear in mind that the change from the sea level to an altitude of from five to eight thousand feet should be made as gradually as possible, and that for several days after the high altitude is reached exercise of a violent nature, long walks, or horseback riding should be deferred until the constitution has become accustomed to the change and the circulation becomes equalized under the new conditions.

The Medical Society of the County of New York has framed a bill against the abuse of medical charities.

Therapeutic Hints.

To Avoid Iodism in Giving Iodide of Potassium.—

℞ [illegible] ..... gr. ij
Ammon. ferrocitr. 1
Tr. nuc. vom. 8
Aq. anet ..... ʒ j
Tinct. cinch ..... m x
M. S. Teaspoonful in half a glass of water after meals.

—Stern.

Infantile Diarrhœa.—To make up for the liquid lost in purging, especially in the algid type, inject subcutaneously thirty cubic centimetres of the following, from three to six times daily:

℞ Sod. chl. ..... 7 gm.
Aq. dest. steril. ..... 1 litre.

Or Hayem's artificial serum:

℞ Sod. sulph. ..... 10 gm.
Sod. chlor. ..... 5 gm.
Aq. dest. steril. ..... 1 litre

—Lesage.

Reichmann's Disease.—Contrary to the opinion of Hayem that gastro-succorrhœa, or the presence of large quantities of fluid in the stomach during fasting, can be cured only by surgical treatment, Robin claims good results from purely medical measures.—*La Rev. Méd.*, May 26th.

When Quinine Cannot be Given by the Mouth it may be administered in suppositories in half-gram or gram doses.—J. Dunbar-Brunton.

In Bronchial Asthma.—

℞ Tr. opii croc. 5
Eth. sulph. 10
M. S. Gtt. l. every half-hour until the attack is quieted.

—Clymer.

Nephritic Colic.—

℞ Morph. hydrochl. ..... 0.20 cgm.
Atrop. sulph. neutr. ..... 0.05 cgm.
Aq. laurocerasi ..... 20 gm.
M. S. A Pravaz syringeful or one cubic centimetre containing a centigram gr. [illegible] of morphine.

This should be the maximum initial dose when the patient's susceptibility is not known.—Mabboux.

Coryza.—A generous pinch of the following mixture is to be snuffed into the nostrils at the very onset of symptoms and repeated five or six times at intervals of an hour. The powder must be freshly prepared.

℞ Pulv. ac. boric ..... 3 gm.
Menthol ..... 0.30 cgm.

—*Gaz. de Hôp*, June 29th.

Benzoate of Bismuth.—Benzoic acid, being twice as soluble and seven times as antiseptic as salicylic acid, being readily eliminated and non-caustic, should cause the benzoate of bismuth to be preferred to the salicylate.—Pierre Vigier.

In Soft Chancre, syphilitic ulceration, ulcerating lupus, intertrigo, etc., europhen gives excellent results and is preferable to iodoform on account of the odor.—Fournier.

Puerperal Fever.—Salt injections diminish the gravity of the situation, give hope to the patient and opportunity to the physician to seek other means of relief. When large injections are desirable:

℞ Sodii chloridi ..... 7 to 10 gm.
Aq. dest. ster. ..... 1 litre.

The injection can be made into regions rich in cellular tissue, such as the hips, buttocks, or lumbar region, or the solution can be injected directly into a vein.—Laskine.

Gastritis.—In the hyperpeptic form with abundant secretion without dilatation, prescribe a course of Carlsbad water unless there be heart disease or phthisis or the subject be feeble or aged. A formula for an artificial Carlsbad, for home use, is the following:

℞ Sod. sulph. ..... 2.5 to 5 gm.
Sod. bicarb. ..... 2 to 2.5 gm.
Sod. chlor. ..... 1 gm.
Aq. dest. ..... 1 litre.

Sterilize or consume while fresh.—M. G. Hayem.

Amenorrhœa.

℞ Pulv. cascarillæ ..... ää 1 gm.
Pulv. saffron ..... ää 1 gm.
Ferri redacti ..... 0.50 cgm.
Aloes pulv. ..... 0.30 cgm.
M. ft. chart. No. x. One or two in honey or preserves after the evening meal.

—Dauchez.

Gastro-Enteritis of Infants.—

℞ Benzo-naphthol 0.50
Bism. salicylat. 1

Divide into three packages, to be taken during the twenty-four hours on an empty stomach. Over one year of age, one gram of the first and a gram and a half of the second are advised.—Carrière.

Cardiopathy with Vascular Calcification.—In a study of the administration and elimination of the lime salts, Dr. Rumpf (Berlin Congress, June 12th) believes his studies have taught him: 1st. That if we furnish lime salts in abundance to the organism, the latter takes up a notable quantity. 2d. That in cases of calcification of the vessels the quantity of lime eliminated may be inferior to that which is introduced. 3d. That the blood contains a quantity of lime salts which varies according as the subject is normal or pathological.

Laxative in Hepatic Subjects.—

℞ Aloes [illegible] ..... 0.05 cgm.
Ext. rhei,
Ext. cascaræ,
Podophylli ..... ää 0.02 cgm.
Ext. hyoscyami,
Ext. bellad ..... ää 0.01 cgm.
S. For one pill to be taken at the beginning of the evening meal.

—Valentin.

Pulmonary Tuberculosis.—

℞ Strychninæ sulph. ..... gr. ss.
Atropinæ sulph. ..... gr. ¼
Cinchonidinæ sulph. ..... ʒ ij.
Ext. gentianæ ..... ʒ ss.
M. bene. Fiat massa et in pilulas No. lx. dividenda. S. One pill night and morning.

Or:

℞ Ferri et quininæ citratis ..... ʒ i.
Strychninæ sulphatis ..... gr. ½
Aquæ puræ ..... ʒ i.
Syr. acidi citrici ..... q.s. ad ʒ iv.
M. [illegible] S. [illegible] of water after meals.

—J. Hobart Egbert.

Tuberculosis with Syphilis of the Larynx.—In a report of fifty of the cases studied during the past year, the following clinical facts have been brought out: 1. Tuberculous and syphilitic ulcerations are found side by side in the larynx. 2. The presence of a syphilitic ulcer by the side of a tuberculous ulcer in the anatomy exercises a moderating influence upon the tuberculous deposit, if the syphilis be treated, and prolongs the life of the patient. 3. Do not rely upon the report of the microscope in all these cases, as the

tubercle bacilli will be found if there be a phthisis, but the syphilitic element, if present, may be overlooked. 4. In the case of a mixed sore, the syphilitic ulcer will generally progress more quickly than the tuberculous, but can be easily controlled if the right diagnosis is rendered.—E. HARRISON GRIFFIN, *Laryngoscope*, April.

Neuralgia.—

℞ Menthol,
Guaiacol ..... ää ʒ i.
Alcohol, absolute ..... ʒ xviij.
M. S. ʒ i. of this mixture to be rubbed lightly into the affected part two or three times a day.

—SABBATINI.

Uræmic Headache.—

℞ Potass. citrat ..... ʒ ij.
Spts. juniperi ..... ʒ vi.
Æther. nitr. ..... ʒ ij.
Inf. scoparii ..... ʒ vi.
M. S. A wineglassful t.i.d.

—DAY.

Epilepsy.—

℞ Ammon. bromid ..... ʒ vi.
Antipyrin ..... ʒ i.
Liq. potass. arsen ..... ʒ i.
Aq. menth. pip ..... ʒ vi.
M. S. ʒ ss. in water night and morning.

—WOOD.

Hysteria.—

℞ Acid. arsen ..... gr. ss.
Ferri sulph.,
Ext. sumbul ..... ää gr. xx.
Asafetidæ ..... gr. xl.
M. ft. pil. No. xx. S. One t.i.d. p.c.

—GOODELL.

Neuralgia.—

℞ Aconitinæ ..... gr. iv.
Veratrinæ ..... gr. xv.
Glycerini ..... ʒ ij.
Cerati ..... ʒ vi.
M. S. To be rubbed over the painful parts.

Do not apply to any abraded surface.—DA COSTA.

Or:

℞ Quininæ sulph ..... ʒ i.
Morphin. sulph.,
Acid. arsen ..... ää gr. iss.
Ext. aconiti ..... gr. xv.
Strych. sulph ..... gr. i.
M. ft. pil. No. xxx. S. One thrice daily.

—S. D. GROSS.

Diabetes Mellitus.—

℞ Sodii salicylat ..... ʒ iij.
Liq. potass. arsen ..... ʒ i.
Glycerini ..... ℥ i.
Aq. cinnamomi ..... ad ʒ iij.
M. S. ʒ i.–ʒ ss. t.i.d.

—J. C. WILSON.

Diabetes Insipidus.—

℞ Pulv. opii ..... gr. iv.
Acidi gallici ..... ʒ ij.
M. ft. chart. No. xii. S. One, three or four times daily.

—H. C. WOOD.

Tuberculous Meningitis.—

℞ Moschi ..... gr. iij.
Camphoræ ..... gr. xv.
Chloral. hydrat ..... gr. viiss.
Vitelli ovi ..... No. i.
Aq. dest ..... ʒ iv.
M. S. Wash out the rectum with simple enema and inject two ounces.

—SIMON.

Pleuritis.—In the acute stage:

℞ Potass. acetatis ..... gr. xv.
Tr. aconiti rad ..... gtt. ij.
Codeinæ sulph ..... gr. ½.
Spt. Mindereri ..... ʒ ij.
M. S. This mixture to be given every three hours.

When the pleuritis is of the rheumatic type, add ten grains of salicylate of sodium to the mixture given above. To get rid of an effusion of serum, withhold liquids as much as possible and give saline purgatives and diuretics; the blood being thus deprived of its watery elements will frequently take up the effusion from the pleura. If it does not do so, the aspirator should be used and from ten to twelve ounces of liquid withdrawn; the remainder will usually promptly disappear. The character of the fluid in the pleural sac may easily be determined by withdrawing some with a hypodermic syringe. When pus is found neither the aspirator nor the trocar and cannula should be used, but a free incision should be made in the seventh or eighth intercostal space on a line with the posterior axillary fold; the pus and fibrinous clots can thus be thoroughly evacuated, after which a drainage tube guarded with a safety pin should be introduced and a dressing of sterile gauze and cotton applied. The tube may be shortened from time to time, and when the discharge is thin or serous may be withdrawn. The initial operation as well as all subsequent dressings must be done with strict aseptic methods; the danger of acute infection is great. It is necessary to excise a portion of rib when drainage cannot properly be secured by thoracotomy. This allows thorough exploration, pockets of pus can be broken up, drainage will be perfect. Irrigation of the pleural sac I believe is harmful; it irritates and delicate adhesions are broken up.—E. H. JAMES.

Diphtheria.—

℞ Hydrarg. chlor. mit ..... gr. i.
Sodii bicarb ..... gr. xxiv.
Pulv. aromat ..... gr. vi.
M. ft. chart No. xii. S. One powder every two hours.

—STARR.

Or:

℞ Menthol ..... ʒ iiss.
Toluol ..... q.s. ad ʒ x.
Solve et adde:
Alcohol abs ..... ʒ ij.
Liq. ferri chloridi ..... ʒ i.
M. S. Apply with a cotton swab.

—LOEFFLER.

Gout.—

℞ Vini sem. colchici ..... ℥ ss.
Potass. iodidi ..... ʒ ij.
Liq. potass ..... ℥ iss.
Tr. zingiberis ..... ʒ ij.
M. S. ʒ i. twice daily in warm water.

—HODGSON.

Or:

℞ Lithii benzoat ..... ʒ ij.
Aq. cinnamomi ..... ℥ iiss.
M. S. ʒ i. in a wineglass of water every four hours.

—JACCOUD.

Chronic Bronchitis.—

℞ Apomorph. hydrochlor ..... gr. ss.
Syr. pruni virg ..... ℥ ij.
Syr. picis liquidæ ..... ʒ iv.
M. S. Tablespoonful three times a day.

—MURRELL.

Or:

℞ Acid. carbol ..... gr. xxv.
Tr. opii camph ..... ℥ iij.
M. S. A drachm added to one-half pint of hot water in the inhaler; use three times a day.

—N. S. DAVIS.

Typhoid Fever.—The whole question of the treatment of typhoid fever might be summed up as follows: Keep the bowels thoroughly open. Keep the alimentary canal as aseptic as possible. Give good nourishing food—that which the patient will readily assimilate. Give plenty of water by both the mouth and the rectum. Use the best intestinal antiseptic known. Never give opium. Never give phenacetin or acetanilid. Give strychnine as indicated. If this plan is followed you will rarely have a death from typhoid fever.—DR. MCCORMICK, *Journal of the American Medical Association*, July 10th.

Surgical Suggestions.

Sudden Death in the Puerperium.—1. Pulmonary embolism is the cause of death in most of these cases. 2. It is rare, but so shocks a community when it occurs that it is advisable to take every precaution to guard against it. 3. Phlebitis, varicose veins, prolonged labor, hemorrhage, anæmia, sepsis, cancer, syphilis, etc., predispose to its production. 4. In the presence of peripheral thrombosis, etc., absolute rest must be enjoined, especially between the second and third weeks of the puerperium, as this is the disintegrating period of the clots. The danger should also be explicitly pointed out to both patient and attendants, thus insuring to some extent a healthy co-operation. 5. The extreme changes in the blood usually ascribed to pregnancy and the puerperium are erroneous, and not corroborated by modern investigation. 6. Sudden death from air embolism in the puerperium is doubtful from physiological, pathological, and rational standpoints. 7. Shock is both a direct and indirect cause of death in the puerperium, and should be guarded against. 8. Organic heart affections, kidney trouble, etc., are capable of producing death at any time, and should not be overlooked in the puerperium. —Gallman.

Operative Treatment of Cancer of the Rectum.—In a very exhaustive paper on the operative treatment of cancer of the rectum, published in the *Annals of Surgery*, April number, Dr. Edward H. Taylor, of Dublin, summarizes his most important points as follows: 1. Great care should be exercised in the selection of cases for operation. Cancers which have exceeded the limits of the bowel and have acquired adhesions to neighboring parts do better if left alone. 2. The preparatory treatment deserves our utmost attention, having as its object the improvement of the patient's general condition, and as great a degree of intestinal asepsis as it is possible to obtain. 3. Free purgation, intestinal antiseptics, and rectal irrigation cannot have a really useful effect so long as there exists an ulcerating cancerous surface swarming with virulent micro-organisms. The use of the curette whenever possible, followed by irrigation, should accompany the other measures. 4. A preliminary colotomy can scarcely be recommended as a matter of routine. It appears to be chiefly indicated when attempts to empty the intestine and cleanse it have been either impossible or attended with difficulty. 5. We should consider a certain number of types of rectal cancer, both as regards their site and extent, with a view to determine the methods best suited for their removal. 6. Three cardinal rules may be suggested as applicable to all cases: (*a*) Control bleeding as much as possible. (*b*) Let the principles of aseptic surgery be as strictly observed as the field of operation will admit. (*c*) Avoid rough manipulations in the separation of the diseased tissues; let it be effected for the most part by a process of careful dissection. 7. The perineal operation is best employed for ano-rectal cancers; that is, for cancers which involve the sphincteric zone and extend for some distance above it. 8. If possible the rectum should not be split in its removal, nor should the finger be introduced to serve as a guide in its separation. Elastic ligatures should be applied and sterilized gauze placed beneath before it is cut. 9. Cancers situated in the suprasphincteric region are better removed by the sacral method. As contrasted with the perineal, it gives more room, bleeding is more easily controlled, separation of the disease is more readily effected, and it gives the best functional results. 10. Temporary sacral resection should not be entirely disregarded, owing to its manifest advantages over the more extensive mutilation of Kraske and Bardenheuer. 11. If, when the cancer is excised, it is found that the upper healthy segment descends easily, it is worth while making an attempt to suture it to the anal margin, having previously removed the mucous membrane from the lower segment. 12. In cases in which the ends of the bowel have been united after removal of the cancerous segment, it is well not to close the sacral wound completely, for fear of accidents. 13. For cancers situated high up, as well as for those of wide extent in the rectum, the formation of a sacral anus is often the only means at our disposal. 14. In such cases it appears advisable to follow the advice of Gersuny, and give the bowel a twist on its long axis before attaching it to the skin, the object being to establish a modified sphincteric apparatus. 15. The perineo-abdominal and sacro-abdominal operations are grave; they involve serious risks, and can be required only in very exceptional cases. However, we must encourage attempts which help to extend more widely the indications for complete removal of the disease and such as are suitable for those desperate cases in which the palliative treatment afforded by an artificial anus has hitherto been our only resource.

Intestinal Anastomosis.—Dr. T. Myles (*The Medical Press and Circular*, April 7, p. 350) draws attention to a fact that is too often lost sight of. The intestinal canal is a tube of living tissue, not merely a passive channel; its contents are propelled through it by muscular action, and it is not sufficient for us merely to be able to seal up an aperture in its wall. We want much more than this; we want to preserve or retain its normal peristaltic action, and to attain this object should be our ideal. Imagine what happens as the result of almost every method yet devised in an end-to-end anastomosis. The living contractile muscular wall at one spot is replaced by an inert cicatrix, in which the longitudinal muscular fibres end. Such cicatrix may be only a few lines in length or it may be more, but it exists, and exists as an obstruction, the contents of the bowel being forced through it by mechanical pressure from above, not, as it should be, by the contraction of its wall. Moreover, the expansile character of the gut is lost here also, the bowel at the seat of union cannot enlarge like the rest of the gut, and with a sudden constriction of the lumen and an inert area of bowel we have all the requisites for the production of an intussusception. Until we can restore the direct continuity of the muscular fibres (and this seems almost hopeless at present) we have not attained our ideal. Nevertheless, the more nearly we approach this condition—or, in other words, the smaller the cicatrix consistent with safety—the better and safer will be our results. It is for this reason I give my personal adhesion to the simple unaided suture in the great majority of cases. Whenever it is practicable, I believe it will give better results than any other method. But it is not always practicable.

Hypodermic Treatment of Syphilis.—

℞ Hydrarg. bichlorid.,
Ammon. chlorid. ..... āā ℈i.
Sod. chlorid. ..... gr. lxij.
Aquæ dest. ..... gr. xx.

Mix and filter. Add white of one egg dissolved in distilled water, ℥ivss. S. [illegible] superficially.

This is the equivalent of one-sixth grain of bichloride. Objections raised against this method are: Unnecessary pain, subcutaneous infiltration, large indurated and painful swelling, inflammation, abscesses, stomatitis, ptyalism, disturbances of circulation and respiration. The advantages claimed are: 1, Accuracy of dose; 2, exactness in intervals between doses; 3, rapidity of action of medicine; 4, small amount of mer-

cury and the short time needed to effect a cure; 5, the constant, never-ceasing effect of the mercury day and night; 6, the personal supervision of the physician; 7, the certainty of the patient's getting the right medicine, of its being properly administered at regular stated intervals, and of his inability to get your prescription refilled or to give your knowledge to a friend or sell it to some charlatan; 8, profit to the physician and economy to the patient on account of the saving of the drug bill of four years. The doctor with this method is sure of two very important things, his fee and his patient's gratitude for his speedy cure—quick delivery, so to speak; 9, absence of gastro-intestinal disturbances; 10, last, though not least, quick diagnosis in questionable cases.—Dr. Dabney, *New Orleans Medical and Surgical Journal*, April, 1897.

Erysipelas.—

℞ Tannin . . . . . 2 parts.
Camphor 5
Sulphuric ether 15

Paint the erysipelatous area every hour or two, proceeding from the healthy skin toward the centre of the patch. There is some burning at first, due to the evaporation of the ether. In a short time a crust forms, the swelling goes down, and in a few days the cure is complete.—*Gaz. degli Osped.*

When Shall We Use the Forceps?—1. The indication for the use of forceps rarely or never arises during the first stage of labor, before the membranes have been ruptured. 2. It may be necessary to employ the forceps during the first stage, when the waters have escaped on account of the increasing exhaustion of mother or child. 3. It is proper during the first stage of labor to apply the forceps for accidents, whenever they may arise, notably in certain cases of convulsions, placenta prævia, and prolapse of the cord. 4. In the second stage it is proper to apply the forceps one-half hour after the head ceases to advance, when there is no disproportion between the passage and passenger. 5. When, however, there is a tight fit between the child and the birth canal, the use of the forceps may be delayed. This delay should rarely exceed two hours after the head ceases to advance. 6. If the head is engaged, and neither advances with the pain nor recedes after the pain, the forceps should be applied promptly.—Dr. Park, *American Gynecological and Obstetrical Journal*, February, 1897.

Hydatid Cysts.—According to Australian writers, the aspiration of hydatid cysts is directly fatal in at least eighteen per cent. Of the rest, at least fifty per cent. are not cured. Owing to improvements in the methods of operation, the treatment by incision is most successful in all early and uncomplicated cases. Only a small wound is required, through which the parasitic cyst is most easily removed, and the thin-walled adventitous cyst falls together and is united without drainage whenever possible. The longer the hydatid cyst remains, the more adherent becomes the parasitic cyst and the thicker the wall of the adventitious cyst, so that the former is removed with difficulty, the latter does not collapse readily, and hence prolonged drainage is necessary with all its attendant troubles. The suppuration or rupture of the hydatid immediately puts the patient's life in grave danger. —Spencer, *The Hospital*, April 17th, p. 43.

Fatty Embolism.—Dr. Groube (*La Settimana Medica*, No. 22, 1896) concludes: 1. Though rare, cerebral fatty embolism may assume a dangerous grade, and should be considered in grave traumatism of the bones and soft parts. 2. The urine should be examined daily for three weeks for the presence of fat. 3. The quantity found in the urinary secretion will be a relative guide, inversely, as to the quantity circulating in the blood, for probably these two stand in inverse order. A slight quantity in the urine with increase of dyspnœa indicates a retention of fat in the blood and imminent danger. 4. The dyspnœa and lowering of temperature merit special attention. 5. Absolute rest of the injured part is necessary and rational; in complicated fractures change the dressings only when absolutely necessary. Massage is contraindicated. In contusions of the soft parts massage is allowable only later when the blood does not show a tendency to be absorbed. 6. Contusions often give rise to large cavities filled with fluid blood and fat. In these cases opening the cavity hastens healing and is devoid of danger. 7. If amputation be considered, the danger of fatty embolism should be kept in mind. 8. As to treatment, the kidneys and heart should be stimulated; for the latter digitalis being especially useful.

Diseases of the Gall Bladder and Bile Ducts.—Dr. A. W. Mayo Robson (*Medical Press and Circular*, April 7th), speaking on the above subject, said: "The presence of healthy bile in the peritoneum, such as might occur from an injury such as a stab, a bullet wound, or a blow, in a healthy individual may be tolerated for some time without serious damage, as in a case recorded by Thiersch, who successfully removed over forty pints of bile from the abdominal cavity after the gall bladder had been ruptured by a blow. The experiments of Schuppel and Bosbrom apparently prove that the peritoneum can absorb extravasated bile without serious trouble, and there have also been several cases reported in which extravasated bile has been successfully evacuated, either by tapping or by incision and drainage. Such a fortunate result cannot, however, always be looked for, as is shown by the specimens in some of the college and hospital museums. In all the cases in which the history is appended, the fact of the long survival after so serious an accident is at once borne home, and the lesson is manifest that operations would in each case have given good hopes of success. Mr. Lane has also published a case of rupture of the gall bladder in which the patient recovered after having a considerable amount of bile free in the peritoneal cavity for five weeks. This case confirms the views previously held, that when surgeons are dealing with the bile passages the entrance of a little bile into the peritoneum need not cause anxiety if only the bile be healthy."

Mustard as an Antiseptic.—One never goes into a house, or at least a locality, in which mustard cannot easily be procured, and my custom is thoroughly to rub and scrub my hands with a mixture of green or other soap, corn meal, and mustard flour, for about five minutes. After rubbing thoroughly into all the crevices and creases of the hands and nails by aid of a nailbrush, one may be absolutely certain that his hands are sterilized, no matter what he may have been doing previously. I have no hesitation in proceeding from an autopsy to the operating-room, if I may thus protect my hands. Used as indicated, the mustard leaves no unpleasant sensation; and one may feel that by the time it produces unpleasant tingling or rubefaction of the skin its essential oil has done its desired work as an antiseptic. I have discarded all other means of preparing the hands, and in several years' use of mustard in this way have never been disappointed or had the slightest reason to question its effectiveness. I might add also that it is an admirable deodorizing agent, and will take away from the hands all offensive odor of dead or dying tissues and all redolence of iodoform.—Dr. Roswell Park, *Buffalo Medical Journal*.

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PHTHISIS AND RACIAL DETERIORATION.

THE theory of the relationship of phthisis to insanity is no new one, although now that most of the ills to which man is subject are put down to heredity, more notice is taken of the matter than formerly. Clouston observed, as long ago as 1863, the hereditary kinship of insanity and tuberculosis, as did also McKinnon and Van der Kolk. The belief that consumption is a form of neurosis is gaining ground and is held by many of those best able to speak with authority; at all events, it is on all sides conceded that persons of a neurotic tendency are much more liable to become infected with the phthisical taint than those who are in a state of sound bodily health. This question is now being regarded and discussed from every point of view. Mr. Lawrence Irwell, a member of the neo-Darwinian school of biology, has lately published in pamphlet form a paper on "Racial Deterioration and the Relation between Phthisis and Insanity," which he read at the meeting of the American Health Association in 1896. In this paper most of the up-to-date views in connection with consumption are set forth, and many of the most prominent experts on the subject are cited in support of the opinions expressed. The term diathesis is well defined as "an exaggerated temperament, signifying a proclivity toward some particular disorder." The first point touched upon is the risk attending the marriage of persons of phthisical tendencies. That this is a real and growing danger is a fact only too self-evident, and that there is need of much more caution than is at the present time observed in choosing a husband or wife from the physiological standpoint is as equally evident. But the spread of consumption is not the sole danger to be dreaded in such marriages. It has been proved that marriage into a family tainted with tuberculosis is often productive not only of phthisical but also of mentally deficient offspring. The blend of neurotic and tuberculous heredity appears to be specially harmful. Statistics collected in various parts of the world show that a phthisical family history is a preponderating factor in the etiology of idiocy and imbecility (being found in 28.31 per cent. of the cases tabulated by Shuttleworth and Beach). Naturally an increase of suicide moves hand in hand with an increase of insanity. It has been remarked that the farther a race advances in civilization, the more are its members given to self-destruction. In the history of the ancient world the suicidal mania was most rampant when civilization was at its acme. In Rome at one period suicide was almost an epidemic. Nations advance and deteriorate at one and the same time. Among the primitive races suicide is almost unknown. One of the saddest and most impressive signs of the time is the growing prevalence of self-destruction among the young. Child suicide is increasing both in this country and in most of the countries of the old world. Recently the number of youthful suicides in England alone has averaged over ten annually, and in America this average is very considerably higher.

In connection with suicide there are some curious points to be observed. One of these is that everywhere self-destruction is more common with men than with women. This may be explained partly by the fact that up to the present day woman has taken a less harassing share in the fight for existence, partly by the purer life which she usually leads, and partly by her natural repugnance to mutilation of the body. Another somewhat peculiar point is the time of the year in which the tendency to self-destruction is most marked. One would imagine that in the dreary months of winter and early spring, when all the surroundings are of a depressing character, to a person in an overstrung mental condition such a time would appear most fitting for ending life. However, this is not the case, and statistics demonstrate that suicides are most numerous in the months of May and June.

While allowing that heredity plays a very prominent part in disseminating the seeds of tuberculosis and insanity, it should not be forgotten that environment exerts no small degree of influence toward bringing about the same results. Unfavorable environment also tends to originate and call into activity latent forms of neurosis and produces mental as well as physical degeneracy. This truth is exemplified in the case of dwellers in the Alpine valleys, who have deteriorated from a stout and healthy race into cretins, both mentally and physically deficient. Therefore individuals predisposed by inheritance to neurosis should live amid bright and healthy surroundings and in as cheerful a mental atmosphere as possible. By these means the development of the taint may be kept in check. This treatment is, however, after all, but a palliative one, and it is argued that steps should be taken to strike at the root of the evil and endeavor to stamp it out. The only feasible remedy as yet suggested is that the question of marriage should be regarded in a much more serious light, and that parents should consult a physician before allowing their children to wed. Consumption is a matter of more than national—it is of universal import, and if any workable plan can be devised to eradicate its sources or even to lessen its dangers, such a plan should be adopted. Possibly in the course of time it will be found necessary in the interests of the health of the community at large to enforce laws restricting the reproduction of morbid taints. The time is not yet ripe, and until it arrives the only path to pursue is to educate the public in regard to the gravity of the situation.

THE EFFECT OF SMOKING ON THE HEALTH OF THE YOUNG.

In the *Journal of the Russian National Health Society* for September last, Dr. Mendelssohn contributes an account of the results of some observations made by him a few years ago, in regard to the effect of smoking on the health of students. In view of the great interest taken now by medical men in the question, these deductions should prove instructive. In 1890 a circular was sent to every student of the Army Medical Academy in St. Petersburg and in the Technological Institute, containing several questions which the students were asked to answer, and 1,071 replies were received. Among the medical students 54.66 were found to be habitual smokers, and among technological students only 47.18. Judging from these statistics, smoking appears to be very common among the young in Russia. Two began the habit at the extremely tender age of six, 3 at the age of nine, 11 at the age of ten, 5 at the age of eleven, 27 at the age of twelve, and so on, the maximum being reached at the age of seventeen. The average number of cigarettes smoked daily by a medical student was 19.64, and by a technological student 22.88. (The fact should be borne in mind that Russian cigarettes are very small.)

The tabulated figures relating to the effect of smoking on the health are very interesting, and if accurate go further to emphasize the fact that smoking is detrimental to the health of the young. Of the smokers 16.09 per cent. were found to have some affection of the respiratory tract, while only 10.69 of the non-smokers were thus affected. In respect to diseases of the alimentary tract, the figures were respectively 11.88 and 9.92 per cent.; and of both tracts combined, 8.77 and 3.22 per cent. Turning to the effect of the age at which the habit was begun, it was found that those who had acquired the habit before the age of sixteen years gave higher percentages of illness than those who began at or after that age. Another table illustrates the harmfulness of inhaling the smoke.

It has long been agreed that with the young smoking is not conducive to good health. To the ordinary adult it is probable that smoking in moderation is by no means hurtful; in fact, many distinguished medical men have held that to some persons it is even beneficial.

CONSUMPTION IN ITS RELATION TO THE WAGE-EARNING PERIOD OF LIFE.

The prevention of tuberculosis is a question of so surpassing an importance that any information bearing on the subject is always eagerly listened to. According to the vital statistics of the State of Massachusetts, the death rate in regard to the age of the victims to consumption has within recent years completely altered. Up to about fifteen years ago the highest death rate from tuberculosis was found among those between the ages of seventy and eighty. At the present time the highest death rate from consumption at any age is that which prevails at the age period twenty to thirty. The figures for the twenty-five years 1863–87 were: at the age period twenty-five to thirty—49.4 per 10,000 of the living at that age, and 62.1 of the living at the age seventy to eighty. This excess at advanced ages has disappeared in recent years. It would be interesting to learn whether the statistics from the various civilized countries of the world would afford the same results as those of Massachusetts. If so, the situation is indeed a serious one. Some comfort, however, can be extracted from the fact that not only in Massachusetts, but in America generally and in Europe, the death rate from consumption at all ages has decreased and is still decreasing.

THE DISCOVERER OF ANÆSTHESIA.

Once again the question as to who discovered anæsthesia has cropped up. It is not likely now that the disputed point will ever be really decided to the satisfaction of every one, although the mass of evidence would appear to be in favor of Morton's claim. In the last number of *The Johns Hopkins Hospital Bulletin* is published a portion of a paper read by Dr. Hugh Young, in support of the contention that Dr. Crawford Long was the true discoverer. Dr. Young certainly presents a strong case for Dr. Long, and provides some very interesting reading. It is explained that the reason why Dr. Long did not put his claims forward more energetically was on account of his modest and retiring disposition. The irony of fate was never more plainly exemplified than in the lives and deaths of the three claimants to the honor of the discovery which of all others was surely of the greatest benefit to mankind.

CLINICAL STUDY IN MOSCOW.

All the visitors to the International Congress in Moscow appear to have been greatly impressed by the facilities for pursuing clinical observation to be found in that city. The hospital there is said to be the most perfect in the world. It is situated at some distance from the town and consists of a dozen blocks, each one of which is devoted to a special branch of medicine or surgery. The erection of this building was partly due to private munificence. The government and municipality supplemented this gift with a grant.

THE ARTICLES ON HEALTH RESORTS.

The articles on health resorts printed semi-annually in this journal make no pretension to completeness; they are suggestive only, and are intended simply as pointers for physicians who may need hints in this direction for their own use or for the use of their patients. That these articles have been appreciated has been amply demonstrated to us, since they were begun in June, 1896, by the very numerous communications we have received from members of the profession in all parts of the country requesting further information. The transportation department of the

MEDICAL RECORD, inaugurated at the same time, has been the means of aiding hundreds of physicians since that time in carrying out their plans for travel and sojourn. Circulars, booklets, and timetables of all lines and places are on application sent without charge to any subscriber to the MEDICAL RECORD.

News of the Week.

One Way to Prevent the Abuse of Medical Charity.—The New York Cancer Hospital (One Hundred and Sixth Street and Central Park, West) will hereafter send the following notice to the physician of every patient who applies for treatment at that institution:

"NEW YORK CANCER HOSPITAL,
"106th Street and Central Park, West.

".....189

"..... M.D.

"DEAR DOCTOR: M.....
has applied to enter this hospital. We understand that.....has recently been under your care; kindly let us know if you consider.....
a proper case for free medical treatment.

"An answer will oblige,

"Yours very truly,

"_____

"*Superintendent.*"

This is an example worthily set for every other hospital in this or any other city.

Society for Medical Progress.—The following officers were elected for the ensuing year: *President*, Dr. Louis Fischer; *First Vice-President*, Dr. M. T. Sime; *Second Vice-President*, Dr. Thomas Buckley; *Treasurer*, Dr. Harold Lesser; *Secretary*, Dr. F. P. Lowenstein.

Bayonne Hospital, N. J.—Dr. Charles W. Allen has been appointed consulting dermatologist to the above institution.

Dr. Martin Roche, president of the Pennsylvania College of Pharmacy and of the Polytechnic University, died at Philadelphia on November 15th, in consequence of an apoplectic attack, at the age of seventy-one years. He began the study of medicine at the naval hospital in Portsmouth, Va., and was graduated from the medical department of the University of Pennsylvania in 1852.

Northern Medical Association of Philadelphia.—A stated meeting of the Northern Medical Association was held on November 12th. An informal discussion was held on the subject of "The Ethical Standard of Membership in the Northern Medical Association," in the course of which reference was made to the participation by members in benefit and other public associations. Dr. I. P. Stritmatter presented a number of specimens, illustrative of the treatment of endometritis by means of irrigation with solutions of mercuric chloride and the employment of the stem pessary. Dr. Samuel Wolfe read a paper entitled "Physiological and Pathological Observations Connected with Disease and Injury of the Cervical Cord," relating two cases in which death resulted from fracture of cervical vertebræ.

Health Protective Hospital for Contagious Diseases in Philadelphia.—The agitation that has been going on in Philadelphia for the last three years has finally culminated in the purchase of a site for a pay hospital for the treatment of contagious diseases, in contiguity with the Municipal Hospital. A considerable sum of money has already been collected, and a corporation, including representatives of the Women's Health Protective Association and the Philadelphia County Medical Society, formed, which held its first meeting on November 15th. The object of the new institution is to furnish accommodation for those attacked with contagious diseases in boarding-houses, hotels, or apartment houses, or in their own homes, and who will desire some such means of isolation, for which they will be glad to pay.

Dr. C. B. Meding, of this city, has been elected executive surgeon of the Harlem Eye, Ear, and Throat Infirmary, in place of Dr. R. E. Swinburne, deceased.

"The American Practitioner and News," of Louisville, will be changed at the beginning of the year from a biweekly to a semimonthly.

The Spitting-Nuisance in Germany.—The spitting-nuisance, which in Germany is almost as bad as in our own land, has begun to receive attention from medical men. At a recent meeting of the German Public Health Association there was a discussion on the spread of infectious diseases at health resorts and on railways, and it was generally agreed that one of the most effective means of spreading disease was the habit of promiscuous expectoration on the floors of railway carriages and in public streets. Professor Esmarch recommended that the government be requested to forbid the practice.

American Dentists in Italy.—The Italian government has apparently had enough of tourists, for it is doing its best to keep them away by its crusade against non-Italian physicians and dentists. Recently, according to the Rome correspondent of *The Lancet*, a circular has been addressed by the minister of the interior to the prefects throughout the kingdom. It is neither more nor less than a mandate charging these functionaries to invite all non-Italian dentists to furnish proof that in addition to their home qualifications they possess one from a recognized qualifying body in Italy, failing which these gentlemen are to be held as practising illegally, are therefore to be called upon to desist from practice, and in the event of their being contumacious to be denounced to the judiciary authority.

Vaccination against Typhoid Fever.—The experiments recently made at Maidstone in antityphoid inoculation were unsatisfactory, as they were begun at a time when the epidemic was waning. Now Professor Wright, of Netley, proposes, with the permission of the military authorities, to inoculate all the British

troops, especially those sent to India, in order to render them immune to the typhoid fever which always prevails there to such an alarming extent.

The Tri-State Medical Association.—The annual meeting of this society was postponed by reason of the yellow fever, to Wednesday and Thursday, December 15th and 16th. The meeting will be held in Memphis.

Dr. John N. Mackenzie, of Baltimore, has resigned the chair of laryngology in the University of Maryland.

Typewritten Prescriptions.—Mr. Labouchere proposes, in *Truth*, that a law be passed making it obligatory to typewrite all prescriptions, so that they may be filled with safety and accuracy. He says that he is led to make this suggestion by the confession of a druggist, who said that he always did the best he could with an illegible prescription, and when he could not read it at all put up what he thought best.

A Ruling on a Question of Ethics.—At a recent meeting of the Medical Society of Santa Clara County (Cal.) a resolution was adopted to the effect that the code of ethics does not preclude the members of the society "from freely rendering most prompt and efficient assistance to the sick, the injured, or the suffering, and obtaining the history of such cases from all available sources, whether previously attended by homœopathic or eclectic practitioners, or unlicensed fraudulent pretenders—the right to change physicians being unquestionable; or from receiving in emergencies needed assistance and advice from persons, whatever their titles or pretensions; nor do such codes of ethics preclude regular physicians from seeing or visiting the sick or injured while attended by homœopaths or eclectics or unlicensed persons, and freely stating their opinions about diagnosis and treatment, and doing all else required by humanity and friendship; but they do preclude their representing or regarding such visits and attendance as professional consultations or agreements, or personally receiving professional pay therefor, as lowering the character and standing of the medical profession and misleading the sick and their friends and the community."

Dr. Howard A. Kelly.—A reception was tendered to Dr. Howard A. Kelly, of the Johns Hopkins University, Baltimore, by the Medical Club of Philadelphia in the parlors of The Aldine one evening last week.

Insuring Students against Mishap.—An arrangement has been made by the authorities of Heidelberg University with an accident insurance company, whereby a student who may be disabled by an accident in the chemical and physical laboratories receives $500, or a proportionate sum if the accident causes temporary disability only.

A Cystoscopic Controversy. — Drs. Casper and Nitze quarrelled so long and so loud over the question of priority in the invention of a cystoscope, which the former had exhibited as of his own devising, that they finally appealed to the law. Many of the prominent surgeons of Berlin were called as experts, and differed as widely in their sworn testimony as if they were expert witnesses in a murder case. Finally Casper won the suit, and Nitze was adjudged to have no well-founded claim to priority. He not only lost his case, but had to pay a fine for saying what was not.

Dr. Guiteras, who was sent to Texas by the Marine Hospital service to investigate certain cases of supposed yellow fever, has been the object of much intemperate abuse by certain medical men in that State because he diagnosed the cases as yellow fever.

The Temerity of Old Age.—A man aged one hundred years and one month was married in St. Joseph, Mo., on November 18th, to a widow aged seventy-seven years. Both bride and groom are said to have been in excellent health up to that time.

Suicide of a Physician.—A medical practitioner in Birkenhead, England, was recently sentenced in a Liverpool police court to two months' imprisonment for neglecting to comply with a maintenance order obtained by his wife. Before the judge had finished speaking the man swallowed an ounce of hydrocyanic acid with a promptly fatal result.

Football in Georgia.—The Georgia senate passed the anti-football bill on November 18th by a vote of thirty-one to four. The prohibitive bill had already passed the house by a vote of ninety-six to two. It is currently believed that the governor is opposed to the bill, but his veto would be ineffective against such numbers. The bill prohibits the playing of a game of football in any place in the State where admission is charged.

Perils from Electricity.—A man was killed in Philadelphia last week by a shock of electricity while he was looking in a shop window. It was raining and he was holding an umbrella with a steel rod in it over his head. Above him was an electric arc light. The end of the umbrella rod touched the iron frame of the lamp and a current of electricity passed through his body to the iron covering of a coal shaft in the sidewalk, killing him instantly. A man was killed in a similar way on Eighth Avenue in this city about three years ago.

Alleged Spread of Diphtheria by Means of Pencils.—An inquiry has just been concluded in Indianapolis concerning an unusual increase in diphtheria among public-school children since the opening of the fall session. As a result of this inquiry the sanitary authorities have concluded that the disease has spread through the distribution of lead pencils and penholders. Under the system in vogue in the schools each child is required to take its pencil and penholder to the teacher's desk in the afternoon. These are placed in a box, and the next day are redistributed. It is proposed to sterilize the pencils hereafter previous to their distribution each morning.

Repressing Flirtation.—A telegram from Louisville to the daily papers says that it has been found

necessary to place two policemen on guard before the Louisville School of Medicine every day at the time the girls' high school is dismissed, in order to prevent the medical students from flirting with the young women of the high school, which adjoins the medical college. The students deny that they have ever so much as glanced at the high-school girls, and say that the charge was brought merely to induce the city authorities to build a new schoolhouse in another locality.

The Lane Lectures.—The announcement is made that the third course of Lane lectures before the students of Cooper Medical College of San Francisco will be delivered by Dr. T. Clifford Allbutt, of Cambridge, England. The subject of the course will be the diseases of the heart.

Damages for Injuries Resulting in Death.—About two years ago a constitutional amendment was passed in this State, providing that the amount of damages recoverable for injuries (railway or other) resulting in death should not be subject to any statutory limitation. It was formerly limited to $5,000. One of the results of this amendment was seen recently in a verdict of $30,000 damages against the New York, New Haven, and Hartford Railroad Company for injuries which resulted in the death of Dr. Mixsell.

Police Surgeoncies in Brooklyn.—Two hundred and seven medical men, young and old, veterans and recent graduates, came up for examination last week for appointment on the board of police surgeons. The salary of a police surgeon will be $3,000 a year. There will be two hundred and three disappointed ones, as there were but four vacancies to be filled.

Objections to the Providence Hospital.—A resident of Washington has brought suit in the district court for an injunction to restrain Treasurer Roberts from paying any money to the Providence Hospital, upon an agreement between the surgeon-general of the army and the directors of the hospital. This agreement provided for the support and medical treatment of ninety-five medical and surgical patients who are destitute. There is also another agreement between the district commissioners and the directors of the hospital, wherein it is provided that the commissioners "will erect on the grounds of the hospital an isolated building or ward for the treatment of minor contagious diseases." The petitioner alleges that the hospital is a Catholic institution, that the contract referred to is unauthorized by law, and that the appropriation of funds of the United States for the use and support of religious societies is unconstitutional.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending November 20, 1897. November 17th.—Surgeon C. G. Herndon detached from the bureau of medicine and surgery and placed on waiting orders; Assistant Surgeon J. C. Thompson detached from the naval laboratory, Brooklyn, and ordered to the naval hospital, Mare Island, Cal.; Assistant Surgeon W. B. Grove detached from the naval hospital, Mare Island, Cal., on reporting of relief, and ordered to the *Oregon*. November 19th.—Passed Assistant Surgeon T. B. Bailey detached from the *Yorktown* and ordered home with two months' leave.

Work of the Food Inspectors.—During the past summer the food inspectors of the New York board of health seized and destroyed 2,578,448 pounds of fruit, meat, fish, and other food stuffs. Of these there were 1,012,145 pounds of bananas, 39,905 pounds of apples, 2,120 pounds of eggs, 320,105 pounds of watermelons, 50 pounds of onions, 275,285 pounds of fish, 437,850 pounds of meat, 7,730 pounds of cucumbers, and 1,850 pounds of pickles.

No More Forced Charity for Private Institutions.—The board of estimate has been informed by Corporation Counsel Scott that chapter 754 of the laws of 1895 rendered discretionary all mandatory laws, passed prior to that time, compelling the board to insert certain estimates in the annual budget to provide money for private charitable, correctional, and reformatory institutions. Hitherto these institutions have demanded certain sums as a matter of right under the provisions of these laws. The corporation counsel says that the board of estimate may now consider the applications for relief from the institutions on their merits, and appropriate such sums as in its judgment it deems just. Comptroller Fitch was directed to notify the heads of the institutions interested of the opinion of the corporation counsel, and advise them that they must press their claims on their merits upon the consideration of the final estimates. The aggregate amount which the city has been compelled to raise annually by these mandatory laws has been in the neighborhood of $1,000,000. A committee has been appointed from the County Medical Society to look after the matter.

The Health Board and the County Society.—"It may well be asked by what right in law or equity does the health department or its physicians presume to treat disease in public institutions or elsewhere, and in some instances attempt to dictate or to discredit the diagnosis of the condition or the treatment of patients under the care of a licensed practitioner, not only in private life, but in public institutions also. If the afflicted persons are poor and in need of hospital care, they should be treated like other poor patients, by the physicians of the various public institutions under the care of the commissioners of charities. If they are well-to-do, then they should be treated at home by the private practitioner, or in a secluded public or private hospital if need be, and pay for the services rendered."—*Dr. A. M. Jacobus, in Annual Address before the Society.*

Election of Officers of the Woman's Hospital Society.—The following officers have been elected by the Woman's Hospital Society to serve for the ensuing year: *President*, Dr. Paul F. Mundé; *Vice-President*, Dr. Leroy Broun; *Secretary and Treasurer*, Dr. James N. West; *Executive Committee*, Drs. Nathan C. Bozeman, E. L. H. McGinnis, J. Dougal Bissel, and George H. Mallett.

Clinical Department.

SERUM IN TUBERCULOSIS.

By CHARLES C. BROWNING, M.D.,

A BRIEF report of cases treated by me with tubercle antitoxin is submitted. Since May, 1895, I have treated ten patients, with the following results, to wit: two deaths, four recoveries, and four under treatment.

The two who died commenced treatment when the disease was far advanced, but obtained so much relief from the distressing symptoms incident to this stage of the disease that the treatment was continued to the end. When the serum was discontinued for a short time, these symptoms returned, to be relieved when the serum was resumed.

Of the four patients reported cured, all are still under observation. Three are adults, and were suffering from pulmonary tuberculosis in the second stage. There have been no symptoms of the disease for periods varying from eighteen months to two years, the time since treatment was discontinued in the several cases. The fourth case was that of a child, five years of age, who had suffered from Pott's disease of the spine and was suffering at the time of the beginning of treatment with hip-joint disease. The serum was administered for four months, per rectum, with results which were alike surprising and satisfactory. There is no indication of a return, although six months have elapsed.

Of the four patients under treatment, all have improved. Two are far advanced and will probably obtain only temporary relief. The other two are progressing rapidly, with good prospect for final recovery. One of the latter is taking the serum per rectum.

The diagnosis in all these cases was verified by the microscope.

REPORT OF OPERATIONS IN THREE CASES OF UMBILICAL HERNIA IN ELDERLY WOMEN.

BY PATRICK CASSIDY, M.D.,

[illegible] SURGEON [illegible] W. W. [illegible] HOSPITAL, NORWICH, CONN.

IN comparison with the number of operations for inguinal and femoral herniæ, the reported operations upon umbilical herniæ are small in number; in fact, surprisingly small. This rarity of such operations is not in all probability due to the great comparative rarity of umbilical hernia, but to the fact that in a majority of cases trusses and other appliances act very well in keeping back the hernial contents. On this account the individual is not troubled by the hernia; therefore the surgeon is not called upon for interference. To tell the truth, a great many persons having herniæ which give them at times great trouble do not even then consult a surgeon, but prefer to hurry to the instrument maker and have a truss fitted. Of course, in cases of enormous hernia or strangulation, the surgeon is consulted and operation is often advised. The three cases to be reported bear out my statements. In one of these cases the hernia had been of only one year's standing, but in the other two cases several years had elapsed since the beginning of the trouble. These cases also testify as to the rarity of this form of hernia, for they are the only cases of umbilical hernia which have been operated upon in this hospital during its four years of existence.

CASE I.—Mrs. G——, aged sixty-three, is a farmer's wife, living in Ledyard. For twenty years she had an umbilical hernia. During these years she had worn trusses of various forms with poor results. Yet, in spite of the fact of hernia, she had borne eight children. She reported that the hernia had been "strangulated" twice, and for two weeks before coming to the hospital she had suffered almost intolerable pain and much inconvenience otherwise. On account of this great pain she decided to come to the hospital. Upon examination the ring was found to be about one inch in diameter and the abdominal walls were very lax. She was operated upon May 17, 1897. After the sac had been exposed, it was opened and was found to be filled with omentum. This was ligated and cut off. The sac, being adherent everywhere to the ring, was cut off at a short distance, about 0.5 cm., from the ring. The ring was closed by a row of chromicized catgut sutures in such a way as to bring the serous surfaces of the sac together. The bellies of the rectus were dissected for, and after being found were brought together with the fascia in apposition above the ring and stitched with the gut sutures. Next the skin incision was closed with interrupted silk sutures. The patient made an uninterrupted recovery, the wound healing by first intention. She has been, since her discharge, attending to her duties as housewife on a farm.

CASE II.—Mrs. McB——, aged forty-nine, residing in Wauregan, has had several children. During the past five years she has had an umbilical hernia. This had never given her any trouble until May 17, 1897, four days before coming to the hospital. On this day, after a fit of coughing, the tumor became much enlarged and caused pain. There was vomiting but no constipation. She was admitted to the hospital, May 21, 1897. On examination an irreducible hernia was found at the umbilicus. The percussion note was dull over the tumor. It was decided to operate. At operation, after cutting down on the sac, this was found to be adherent to the ring and was cut away at a short distance from the ring. The contents of the sac consisted chiefly of omentum, but there was also included a portion of intestine, making a partial enterocele. A large portion of the omentum was ligated and cut off, and the residue of the hernial contents was returned to the abdomen. The wound was closed in the manner described. A rapid recovery followed, the wound healing by first intention.

CASE III.—Mrs. W——, aged sixty, resides in Norwich. She had been troubled by an umbilical hernia for about a year. Occasionally, she said, it would become "strangulated." On these occasions she got relief by assuming a recumbent position and applying heat to the tumor. It would at times diminish in size, but never disappeared. On the evening of March 23, 1897, she was taken with a severe attack of vomiting, coincident with which the tumor became full, hard, and painful to the touch. Dr. L. S. Paddock was called in. He attempted taxis, but failed to reduce and had her removed to the hospital at once. She arrived there at 4 A.M., and sodium bromide was given and ice applications were tried. She had no pyrexia. At the operation an incision was made in the middle line, over what appeared from percussion to be omentum. The sac, after it was opened, was found to be chiefly filled with omentum, which was adherent to the abdominal walls. After dissecting through this, several knuckles of congested and gangrenous-looking colon were found. The ring, which was tense and constricted, was enlarged by incision. This enlargement was followed by recovery of circulation in the greater part of the intestine and the disappearance of the œdema of the whole mass. The tenseness was also relieved. The incision was now enlarged and the sac opened in all directions. The sac was cut off as in the other two operations. The intestines were washed in saline solution and then returned to the abdominal cavity. The sutures inclosing the incision were made as in the

other operations, but in this case a gauze drain was introduced. The patient rallied nicely from the anæsthetic, but the pulse was very weak. Stimulants were freely administered, but her condition grew gradually worse and she died at 4 A.M. of the morning after. At the necropsy the small intestine was found to be filled with blood from internal oozing. During the last few hours of life several ounces of blood were passed per rectum.

Of course, too short a time has elapsed since operation in Cases I. and II. to give good grounds for claiming a cure, but up to the present the patients have been able to attend to their duties, which are by no means light, without any recurrence and with no discomfort.

ONE-SIDED SPASTIC SPINAL PARALYSIS (PRIMARY LATERAL SCLEROSIS).

By HAROLD N. MOYER, M.D.,

CHICAGO.

It is hardly necessary to discuss the question as to whether there can be a primary lateral sclerosis. Some authors, notably Oppenheim, are of the opinion that it may occur, while Dana discards the term altogether. Our recent acquisitions regarding the neuron have altered our conception of the system diseases of the cord and their relation to the brain. Regarding the nerve cell and fibres as practically the same structure in a pathological sense, there can, I think, be little doubt that motor fibres may degenerate at the beginning in the cortex, or the degeneration may have its beginning at any point along the course of the fibres. Without doubt there are well-marked cases that can be explained by no other hypothesis than that of primary involvement of the crossed pyramidal tracts. Oppenheim and Dana claim that no case of this kind has yet come to autopsy. In view of these uncertainties, I have concluded to retain the older designation of spastic spinal paralysis.

The patient was a male, thirty-eight years of age, a farmer by occupation, and had always resided in the country. The family history was excellent, presenting no cases of nervous trouble or tuberculosis. The patient had always had excellent health, and denied all venereal infection. Four years before coming under observation he had a severe attack of influenza in the early spring months. From this illness he made a slow convalescence, and as the season advanced and the weather became warmer he noticed that the left side of his face did not sweat as did the right side. He is not positive that the dryness of the surface included the entire left half of the body, but does recollect that the left hand was always drier than the right. During the summer this symptom gradually disappeared. As autumn approached he observed an increasing weakness of the left arm and leg. He is not positive, but thinks this loss of strength began first in the arm. With this weakness there was an increasing stiffness of the left leg and arm. The paralysis has gradually increased ever since it began, though the progress of the disorder was more marked during the first two years.

As the patient enters the room his walk is distinctly of a hemiplegic type, and at first glance a diagnosis of cerebral hemorrhage would be made. On interrogating the patient it was learned that the disease came on gradually, that at no time was there "a stroke" or impairment of consciousness. The side of the face is not involved and there is no disturbance of speech, nor are the eyes involved.

The muscular system is well developed and he has every appearance of being in perfect health. He stands with eyes closed and feet close together, without swaying. In neither hand is there inco-ordination. The knee jerk is greatly increased on the left side, as is the elbow jerk. Myotatic irritability is exaggerated. A slight tap on the quadriceps is sufficient to throw the left leg nearly straight. There is no distinct quadriceps clonus. Ankle clonus is marked and will continue for several minutes. On the right side there is an increase in the knee jerk, though no ankle clonus is present. The patient says that in walking the ankle jerk often occurs in the left foot, and it is necessary for him to stop and press the foot firmly to the ground. It is apparent that the right side is involved to a slight extent, but it is not sufficient to attract the attention of the patient. Movements of the right arm and leg are clumsy and difficult of execution. The grasp of the left hand is nearly abolished; that of the right is especially strong and vigorous. The superficial reflexes are not altered.

Electrical reactions are normal on the paralyzed side. As compared with the opposite side, the same amount of current is required. There is no tendency to polar inversion. Sensation is not altered or diminished anywhere, nor are there any trophic disturbances. The muscles are everywhere as full and rounded on the paralyzed as on the healthy side. The pupils and eyegrounds are normal. The visual fields for white and colors are normal in both eyes. All of the cranial nerves are intact and there is no increase in the jaw jerk. Speech is not disturbed. The functions of the bladder and rectum are normal. There is no impairment of the sexual centre.

This is the first case that has come under my personal observation in which primary lateral sclerosis was practically limited to one side. I say practically limited, for it is apparent that there is a very slight involvement of the right side, though it is not sufficient to attract the attention of the patient. I regard this unilateral grouping of the symptoms in this disorder as exceedingly rare, and one to which many late writers do not refer. Bastian ("Paralyses, Cerebral, Bulbar, and Spinal," 1886) states that in rare cases the disease is limited to one side of the body, beginning, for instance, in one leg and then extending to the arm on the same side, so as to present a kind of hemiplegic distribution. In equally rare cases the upper extremities may be affected first, the disease later involving the trunk and legs.

Recently Dr. Charles K. Mills described to me a similar case which had come under his observation but had never been published. In this case the disease was of a distinctly "hemiplegic" type.

A CASE OF COMPLETE SPONTANEOUS VERSION.

By K. N. DALEY, M.D.,

BOSTON, MASS.

On May 27th, I was called to attend Mrs. C——, a secundipara, aged about twenty-eight years. No word having been left at the office as to the nature of the case, it was some few hours after I was summoned that the visit was made. The patient's house was reached at about 2 P.M., and it was learned that she had been in labor since early the previous evening. While cleaning up I had occasion to observe the character and duration of her pains, which at this time were recurring at about five-minute intervals. It seemed to me that she had not reached the second stage, and an examination made shortly after confirmed the inference, the os being of but the size of a five-cent piece; head presenting. The result of examination was made known to the patient, and she was encouraged and instructed how to work with her pains.

Soon the case seemed to progress nicely, the pains increasing in frequency and intensity. After an interval of an hour or more a second examination was made. I was somewhat surprised to find that there was scarcely any perceptible change in the size of the os, which was exceedingly rigid and felt like a tense ring of cartilage. However, the pains being strong, regular, and frequent, she was allowed to continue for another couple of hours, in the hope that with the increasing force and frequency of the contractions dilatation would eventually ensue. At the third examination (made about two hours after the second) the os had increased to about the size of a silver dollar, but still presented the tense, rigid character. Position was made out, it being a normal O.L.A.

Moral suasion was again resorted to, but by this time the patient had begun to tire and grow weak. Vomiting soon supervened and it required constant effort to keep her mind on her work. The pains also now lost their frequency, but seemed to make up for this loss by increased intensity, with, however, but little effect on the size of the os.

Manual dilatation was tried, but owing to the cartilaginous character of the os but little headway was made. There were now signs of complete inertia, and it was decided to etherize, apply forceps after complete dilatation, and then deliver. Mr. C—— was dispatched for ether, the writer meanwhile continuing the dilatation. Just at this time the membranes were accidentally ruptured and quite a rush of waters came down, but version did not occur immediately, for the head could easily be felt with the dilating hand for some few minutes later, when Mr. C—— returned with the ether.

Dilatation was suspended at this point. The head was presenting, position O.L.A., head not engaged. This was the position just previous to etherization, the os just admitting the hand. Ether was given and soon the woman was completely under its effects.

The cone was now intrusted to an attendant, it being my intention to complete the dilatation and deliver as soon as possible. The interval between my last examination and this moment could certainly not have been more than fifteen minutes, yet on introducing the hand to enlarge the os still more I was completely dumfounded to find not the head but the breast. At first I could scarcely believe my own senses, but yet there it was! I had informed the attendants of my intention, and in fact had my forceps by my side in lysol solution, all ready for instant application.

There was now but one thing to do—complete the dilatation, go up for a foot and bring it down, which was soon accomplished, and after some further slight difficulty delivery was happily completed.

Such cases are explained by Lusk thus: The amniotic fluid having escaped, the fœtus is seized by the uterine muscular walls, which now labor under a mechanical disadvantage. The pains force the head into contact with the os internum. There is absence of a distending bag of waters; the contractions at the fundus become more powerful, the os refuses to dilate, the presenting part is displaced laterally, and the part previously occupying the fundus is forced into the pelvis.

[illegible]

Laryngismus Stridulus.—

R Pot. cit.	gm. 7
Sydenham's laudanum	gtt. 20
Pulv. ipecac,	
Syr. simp.	āā gm. 15
Aq. q.s. ad	gm. 120

M. S. For a child a tablespoonful every two hours.

—Douglas.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

TYPHOID EPIDEMICS—OPHTHALMIA AND SCHOOLS—DR. BARNARDO—DR. SIMS WOODHEAD—CLINICAL SOCIETY—NURSES' DISPUTES—DEATHS OF DR. HAUGHTON, SIR WILLIAM MACKINNON, AND SIR RUTHERFORD ALCOCK.

London, November 5, 1897.

THE typhoid scourge continues. At Maidstone the medical officer of health reported on Wednesday 35 new cases for the week, an average of 5 a day. The next day there were 10, bringing the total up to 1,795. He did not consider any well in Maidstone safe, and the conduit water was in constant danger of pollution. The corporation has spent about £6,000 in temporary hospitals, laundries, nursing, and such like. More than £6,000 has been subscribed to help the sick and the orphans.

At Lynn also the epidemic is unchecked. On Wednesday 17 fresh cases raised the total to 316 with 12 deaths. Yesterday 14 new cases were added. At Clifton the number of cases had risen yesterday to 120, and it was said all had been traced to one milk supply from a distant farm.

Dr. Sydney Stephenson, who, as I informed you, was appointed to examine the school children as to the prevalence of ophthalmia, has completed his report, which is now printed as an appendix to the annual report of the local government board. Among 1,702 children examined, he found 973 cases of chronic trachoma, but acute ophthalmia was rare except among pauper children. Dr. Stephenson says trachoma is certainly more common in poor-law institutions than in outside schools, but the difference is not so great as many supposed. Actual injury to eyes or to sight from trachoma occurred in 439 eyes in 277 children, and this he says is "due to a malady that is preventable and ought to be prevented." During the last twenty years great improvement has been effected in the ophthalmic condition of the children. In 1874 Mr. Nettleship found in 8,798 children trachoma affecting 42 per cent. Now Dr. Stephenson finds the percentage reduced to 4.91. Similar improvement is noted in other respects. Dr. Stephenson traces the primary cause of trachoma in the schools to importation of diseased children, and asserts that aggregation cannot be shown to exert an appreciable effect on its spread. The remedies propounded are structural adaptations and careful administration and supervision, particularly in regard to washing-arrangements and other sources of infection, together with probation of thirty days for new comers and frequent skilled inspection; medical officers to be specially trained to examine and record the condition of the eyes of every new comer, and a central hospital to intercept diseased children and detain them until cured. Seaside sanatoria and other provisions are also recommended.

I am sorry to see that Dr. Barnardo's homes do not come out well as to the prevalence of trachoma. In one of them 5.51 per cent. were affected. Of course the class of cases in these institutions must be taken into consideration as specially difficult to deal with, but I should think that Dr. Barnardo will carefully study this report and direct his best efforts to the matter. Probably most of your readers are acquainted with the great good he has accomplished. Dr. Barnardo was a student of the London Hospital. He gave up the profession for the purpose of rescuing the children who were destitute and outcasts. The work grew rapidly, and has attained such dimensions that he is now able to offer to receive and provide for the one hundred or

more orphans of the Maidstone epidemic. He found himself early in his work rather hampered by not being qualified. He therefore took his diplomas, and he has been fellow of the Edinburgh College of Surgeons since 1879.

When Sir B. W. Richardson died many people wondered whether another medical man could be found to follow up his temperance work. His successor as president of the Medical Temperance Association is Dr. Sims Woodhead, whose scientific reputation you are well acquainted with. Last week a complimentary breakfast was given to Dr. Woodhead in Dublin, by the several Irish societies engaged in temperance work. The College of Surgeons lent its hall for the occasion, and Sir William Thompson presided and said he was very glad to take part in the proceedings, and as president of the college he assured a gratified audience that the council had willingly given what facility it could to honor their distinguished guest.

There was an interesting show at the last meeting of the Clinical Society, and next week there is to be a series of cases of forcible rectification of curvature of the spine, as practised by Dr. Calot. The cases are to be brought forward by Mr. Tubby and Mr. Robert Jones. It is anticipated that M. Calot will be present and defend his method, which will no doubt be critically discussed.

The Royal British Nurses' Association has its troubles, and is hardly a bed of roses for those doctors who have devoted much time and energy to its assistance. Last week there was a meeting of its "members' rights defence committee" at St. Martin's Hall, convened by certain malcontents for the purpose of condemning the management and demanding a public inquiry into the grave charges made against the managers. Mrs. Bedford Fenwick moved a resolution to the effect that, "in view of the great public and professional interests involved, inquiry is imperatively needed," and calling on Parliament to appoint a select committee next session. In support of this she accused five medical men of controlling the association and mismanaging the finances. The meeting was not a large one—perhaps over a hundred persons were present, but they were not all nurses; in fact the uniform was not at all conspicuous. Two of the speakers who followed said they were not nurses or members, but came to support Mrs. Fenwick, in whom a subsequent speaker said she knew many nurses had confidence. A late secretary remarked on the few nurses present, and said Mrs. Bedford Fenwick did not represent either the association or the nurses and had called this meeting only because she had been omitted from the council. Hereupon storms of hisses and applause conspired to interrupt the proceedings, and the resolution was declared to be carried. Sir C. Browne, Dr. Bezley Thorne, and Messrs. Pick, Langton, and Fardon are the gentlemen who are accused of mismanagement by Mrs. Bedford Fenwick and her husband, but what the association would gain by transferring to the latter the confidence felt in the former requires explanation.

The foremost professor of Dublin University, the Rev. Samuel Haughton, M.D., D.D., died on Sunday, and will be missed by an immense number of graduates who can hardly realize Trinity College without Haughton as the most prominent figure. He entered the university in 1839, and crowned his brilliant student career by winning the fellowship the very year he took his B.A. (1844). Ever since he has been closely connected, I may say identified with the university, in which he has held every important office. He took the M.D. in 1862 in order to qualify himself for the registrarship of the School of Physic, and no sooner was he installed than he began a series of reforms which gave new life to the school and in fact set the tone of medical education in Dublin. He was a great mathematician, a naturalist of a high order, and possessed most remarkable mental gifts, so that any subject to which he gave attention was at once mastered by him and not seldom advanced. With all this he was an eloquent exponent of science, a public speaker of such power as always to attract an audience and always please—a born orator in fact, with a full dash of rare Irish humor. For several years he represented his university in the General Medical Council, where his wit and humor enlivened the usual deadly dull proceedings, and where if he met his equals in intellect there were certainly none who excelled him. Honorary degrees of Oxford, Cambridge, Edinburgh, and foreign universities were conferred upon him. Among his works his "Principles of Animal Mechanics," published in 1873, is perhaps best known to the profession.

Sir William Mackinnon, K.C.B., formerly director-general of the army medical department, died on the 28th ult., aged sixty-seven years. He was F.R.C.S. Edin., 1873, licentiate of 1851. The Irish College conferred upon him an honorary fellowship. Sir William Russell in *The Times* says: "He was one of the best and bravest soldiers that ever wore the uniform of the Queen, but it conveyed no idea of the man himself, who was an embodiment of some of the finest traits of the Celtic Highlanders."

Sir Rutherford Alcock, K.C.B., D.C.L., F.R.C.S., died on Wednesday morning, aged eighty-eight years. He had left the profession so long ago and had become so notable in the diplomatic service that many were unaware that he ever belonged to us. He was on the medical staff of the British forces in the peninsula, and received honors and decorations from Spain and Portugal. Afterward he was consul in China, and subsequently plenipotentiary to Japan and our first minister to that country. Still later (1865) he had the same position at Pekin, and six years later retired. He had been president of the Royal Geographical Society. He took an interest in hospital work, in the course of which I came into contact with him. His help was specially valuable and highly appreciated at the Westminster Hospital. He published "Notes on the Medical History of the British Legion in Spain" and other works, among which I may mention those on "Japanese Art and Industries," and a Japanese grammar and dialogues in that language.

OUR BERLIN LETTER.

THE LEPRA CONFERENCE—SOME NEW DATA CONCERNING THE HUMAN PANCREAS—PARASITIC SKIN DISEASES.

THE International Lepra Conference began its sittings on the 11th of October at the imperial health department's building in Berlin. About one hundred and fifty physicians and representatives of almost all cultured nations were present. Virchow was chosen president; and Lassar (Berlin), Hansen (Norway), and Ehlers (Denmark) were named as an advisory committee. The session was addressed by Minister Posadowsky, who said that the government took a deep interest in this much-contended question.

Of the many congresses held this summer in Berlin, the lepra conference awakens perhaps the most interest, because of the practical results for our battle with this horrible scourge which will result from the conference of so many authorities. Hence the deep interest of all governments. We Germans are concerned in preventing that little epidemic which, as

mentioned in a previous letter, exists in the eastern part of Prussia, from spreading over the entire empire. The government has ordered the building of a lepra home, and that all sufferers be brought to this isolation station and there treated in the most humane manner. Without these precautions, Armauer Hansen, the celebrated discoverer of the lepra bacillus, declares nothing can be attained.

Representing France, Besnier (Paris) spoke of the danger of the spread of the pest through the nasal secretion, for multitudes of bacilli are to be found in this secretion, and it is to be easily understood how dangerous an unclean person is for his neighors. In agreement with this fact, we often find the first manifestations of leprosy on the nose, or rather some part of the face.

Armauer Hansen (Norway) pleaded for a humane but strict isolation of the lepers. The majority must not be placed in danger because of the benefit thereby resulting to the minority; and even the greatest pity we may feel toward these unfortunates must not influence us to endanger the welfare of an entire nation. The speaker then showed how the extra expenditures for the care and provision of lepra cases had repaid, for under this system the number of cases diminished year by year.

England's delegate advocated the theory that in the habitual eating of fish was to be found the main factor in the etiology of leprosy; an opinion not shared, however, any longer by other lepra authorities.

A number of other purely scientific questions and problems took up the time of the conferrees. A most friendly spirit prevailed all the time.

The Berlin Dermatological Society held a festive session at the Langenbeck-Haus, in honor of the conference. The hall was prettily decorated, and every seat taken. In the front rows, in addition to the delegates, were among others of prominence the Kultus Minister Bosse, Professors Virchow, Jolly, and v. Bergmann. Professor Lassar opened the session with an address of welcome in the German, French, and English languages, closing with a German cheer for the Emperor. He followed with a paper on "Venereal Diseases and Public Health." This concluded, he ascended the platform and announced that the Dermatological Society had elected Rudolph Virchow an honorary member of that body. Here followed projected pictures on the screen, illustrating many cases of interest of leprosy and lupus. This closed the session, which was followed by a supper.

At the close of the conference the members and delegates were invited to a banquet given by the Kaiser. A special train brought them to Wild Park, where the royal coaches conveyed them to the New Palace. The Kaiser presided at the table. His wife and all the children were present. He conversed frequently, especially with Virchow; likewise the Empress. Minister Bosse and Professor Lassar introduced the gentlemen. The Emperor passed from one foreign delegate to the other, saying a word or two to each one. He assured them that his interest in the question had led him to become well acquainted with it. Meanwhile refreshments were served, and every body felt at ease; time passed quickly, so that the original time set (one hour) was long passed when the imperial couple withdrew. Thus closed the conference.

At the first autumnal session of the Verein für innere Medicin, v. Leyden, addressing the meeting, paid his respects to three great men who had passed away during the vacation. Fresenius, Heidenhain, and Oertel are men whose fame extends farther than do Germany's borders; the entire world recognizes their merit and labors. v. Leyden also spoke of the active interest of Germany in the international congress at Moscow. He believed the German scientists could with complacency regard the laurels they had plucked there.

Stadelman spoke about the lumbar puncture and his experience with one hundred cases. These included meningitis tuberculosa, meningitis purulenta, abscessus cerebri, brain tumors, and cerebral hemorrhages, etc. He summed up as follows: For diagnostic purposes, a positive result only is to be considered; a negative one is of no value. As regards therapy, lumbar puncture is of no benefit; on the contrary, its employment is often contraindicated, especially in cerebral hemorrhage, as it tends to make the condition worse.

At the first meeting of the Berliner medicinische Gesellschaft, Blascko presented a case of leprosy.

An improvement of the Roentgen photography was reported by Levy-Dorn. It consists in the placing of a fluorescing screen made up of a layer of fine granules of tungstate of calcium. By means of this improvement the exposure is diminished and at the same time the pictures are made sharper.

The greatest interest was awakened by the reading of Buschke's article, "Yeast Fungi of the Human Skin and the Disorders Caused by Pathogenic Fungi." Buschke observed a woman with ulcerating tumors of the skin. He discovered, by means of cultures and inoculation, the cause to be a yeast fungus. This is the first case of blastomycosis positively recognized in man. This case led Buschke to further investigation, to ascertain if variola, syphilis, and carcinoma were not caused by fungi. There are yeast plants which grow upon the exterior and penetrate into the tissues and blood. This variety Buschke studied experimentally. A yeast plant obtained from a cervical discharge was cultivated. If from this culture a portion was brought into the conjunctiva of animals, sarcoma-like swellings were produced and then universal blastomycosis. On the other hand, Buschke could not produce any blastomycosis from malignant growths of man. The peculiar round bodies seen and described by some authors in this condition (blastomycosis) are certainly not yeast growths. Buschke's investigations have yielded a negative result as regards the etiology of carcinoma; still they open to our view a new perspective of the pathological new growths.

ONE OF THE CAUSES OF THE ABUSE OF CHARITY AT OUR DISPENSARIES.

For the Medical Record.

SIR: Much as has been said and written on the subject of the abuse of charity at our dispensaries, one very important factor in its causation has been quite overlooked. I refer to the part the family physician has taken in the past, and is still taking, in greatly increasing the number of persons who apply for gratuitous treatment. Most of our dispensaries are devoted to the specialties. The family physician has, for instance, a patient who, he thinks, should be treated by a specialist. The patient, although in moderate circumstances, is able and in many cases perfectly willing to pay for treatment. Instead of being sent by the family physician to the office of a specialist with a note asking consideration for the patient in the matter of fee, he is told to go to a dispensary (the physician generally designating the one on which he confers the privilege) and receive free treatment.

I have been engaged in dispensary practice in New York for twenty-five years, and I do not hesitate to assert that in my opinion the family physician is largely responsible for the abuse which is now acting as a boomerang against himself.

It is not an uncommon occurrence at my clinic to

have well-dressed persons apply for treatment. After ascertaining residence, occupation, etc., I inquire: "Do your circumstances compel you to apply for treatment at this place, which is intended for the poor only?" The answer almost invariably is: "I am able to pay something, but my family physician told me to come here and I would receive free treatment." Sometimes they coolly inform me that they have been sent to the dispensary for opinion only, and that the family physician merely wanted to feel assured that his own diagnosis was correct. It goes without saying that such cases are refused treatment at my clinic. New York has no lack of specialists, many of whom are young men who would gladly, if such cases were referred to them at their offices, give them treatment at prices they could well afford to pay. If this were done, the clinics at many of our dispensaries would soon rapidly decrease in the number of unworthy persons applying for treatment.

CLINTON WAGNER, M.D.

19 EAST THIRTY-EIGHTH STREET.

EPISTAXIS IN TYPHOID FEVER.

To the Editor of the MEDICAL RECORD:

SIR: Some recent remarks in the MEDICAL RECORD upon certain symptoms in typhoid fever lead me to call attention to an important symptom, clinically and practically, to wit, epistaxis.

About ten years ago I observed that in this disease perforation of the nasal septum near its facial border sometimes occurs. This led to the examination of every case of hemorrhage, and uniformly it was discovered to be from the same point, situated about one-quarter or one-third of an inch from the outer margin of the septum on one or both sides. Observance of this fact will give the attendant immediate control of the hemorrhage by placing and holding the finger over the bleeding point. A few moments' pressure over the alæ, continued, will often be sufficient. While I have not verified it, my impression is that hemorrhages occurring in low states of the system are from the same region.

R. W. ERWIN, M.D.

[illegible]

A NEW OPERATION FOR MALIGNANT DISEASE OF THE TESTICLE.

To the Editor of the MEDICAL RECORD:

SIR: In referring to Dr. J. Coplin Stinson's article with the above title in the MEDICAL RECORD of October 30, 1897, I would suggest that many practitioners have seen many cases of large and painless induration of the testicle and scrotum disappear quite readily under the proper administration of the iodides, or iodides and mercury. A painless carcinoma is so rare that it may be said practically not to exist at all.

As Dr. Stinson did not do the entire radical operation suggested, owing to the fact that the inguinal glands had been previously removed, it opens a doubt as to the mortality rate being "about *nil*." It shortened and simplified his one operation to leave out the extensive dissection necessary to remove the inguinal glands. Dr. Stinson's operation is novel, but the principle of removing all possible source of infection when operating for malignant disease in any part of the body accessible to operation is just as old as ever.

Dr. Stinson does not state whether or not a microscopic confirmation of the diagnosis was made by preparing slides from the tissues removed.

E. H. SMITH, M.D.

[illegible]

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 20, 1897:

	Cases.	Deaths.
Tuberculosis	240	93
Typhoid fever	21	4
Scarlet fever	153	10
Cerebro-spinal meningitis	6	3
Measles	255	16
Diphtheria	151	10
Laryngeal diphtheria (croup)	1	4
Chicken-pox	17	

Opium Eating among the Kaffirs.—It is reported that opium eating has become a habit with the Kaffirs. The Chinese are said to be the chief purveyors, though the trade is by no means restricted to them.—*Hospital.*

The Alleged Heredity of Consumption.—There is no doctrine more firmly impressed on the mind of the average director of a life insurance company than the hereditary transmission of consumption. Yet, like all cherished beliefs, this doctrine is being attacked on all sides, and if it is to remain as one of the fundamental principles of life insurance, fresh statistics must be collected, so as to confute the statements confidently made by its opponents. There can be little doubt that in many of the so-called cases of transmitted phthisis the patient acquired the disease by contagion, his powers of resistance to the bacillus being enfeebled by the same conditions of environment as led to his father or mother being affected. In order therefore to prove that consumption is inherited, it will be necessary to show that the children of consumptive parents, when removed from the influence of the parental environment, succumb to the disease to a greater extent than do the general population.—*British Medical Journal.*

Self-Sacrifice.—A recent issue of a Western eclectic journal contains a page of editorial notes. The first note is headed "Be Good to Yourself." Further down the page is another, entitled "Consultations." It reads: "Our physicians are isolated, and find it difficult to get aid in consultations and surgical operations; but we are determined to give all the assistance in that direction that is possible. We travel a good deal by rail for consultations, and sometimes remuneration is hardly what we would have made by staying at home; nevertheless we are desirous of giving strength to our cause."

Even in Old Roman Days!—

> Wise Arruns, asked "How long will Caius live?"
> Replied, "Three days the fatal sisters give;"
> And Arruns knew the prophet's art. But lo!
> Stronger than gods above or gods below,
> Euschemon comes; his healing arts he tries,
> And in a single day poor Caius dies.
>
> —*Spectator*, August 28, 1897.

Astigmatism in German Schools.—In the majority of instances of weak-sightedness, as well as in structural disease, and in some instances of accommodation error, the origin has been in astigmatism which has passed unnoticed. In examinations of twelve hundred eyes, over sixty per cent. were found more or less astigmatic, while one hundred and five were myopic and one hundred and eighty-eight hypermetropic. —STEIGER, *Correspondenzblatt für Schweizer Aerzte*, May 15, 1897.

Appendicitis has been simulated and operation performed in a case observed by Picque (*Le Bul. Méd.*), in which a pus collection in the diverticulum of Meckel had been the origin of the symptoms.

Infantile and Hereditary Multiple Sclerosis.—Eichhorst (*Virchow's Archiv*, Bd. 146, Hft. 1–3) claims that previously reported instances of infantile multiple sclerosis will not bear the closest critical scrutiny, and that most of them are to be regarded as diffuse sclerosis of the brain. He relates two instances of multiple sclerosis in mother and son confirmed by autopsy, the son having died at the age of eight years. Anatomical changes were found in both instances only in the spinal cord, although nystagmus, disturbances of speech, and pronounced psychical changes were present. This is, however, not so much to be wondered at, since the typical picture of multiple sclerosis may be present without organic lesion.

Quackery.—To gain some idea of the profits of quackery, consider the fact that in one year, 1890, the manufactories of patent medicines in the United States sold their products for $32,622,123. Now if the retailers doubled the price to consumers, as is more than probable, then the people of this country paid for their patent medicines, which very surely do much more harm than good, money enough to have paid every one of the 104,805 "physicians and surgeons" of the United States an annual income exceeding $600.—Dr. Chaillé, *New Orleans Medical and Surgical Journal*, May, 1897.

To Determine Age of Fœtus in Miscarriages.—Dr. Lambinon gives the following figures, obtained at the Liège Maternity, bearing upon the weight of the placenta in cases of miscarriage. The average weight of the placenta at 6 weeks was 20 gr.; at 90 days, 67 gr.; 120 days, 111 gr.; 165 days, 262 gr.; and at 235 days, 330 gr.

The Prevention of Tuberculosis.—At the Twelfth International Medical Congress, held in Moscow, Dr. V. C. Vaughan concluded a paper with the following propositions: All milkmen should be provided with a license from the municipality; such a license not being granted until the cattle have been inspected by a competent veterinarian, who should apply the tuberculin test in every instance, and any animal found suffering from tuberculosis should be immediately destroyed. Cattle killed for food should also be subject to skilled inspection. The disinfection of sputum from consumptive individuals is absolutely necessary, and such persons should not be allowed to expectorate in the streets or public vehicles. Houses and rooms which have been inhabited by consumptives should be disinfected. The government should construct, equip, and maintain hospitals for paupers suffering from tuberculosis; such hospitals should be divided into two classes—one for incurables and the other for those who may recover. Tuberculosis in its early stage is a comparatively curable disease; therefore persons yet in this stage should be examined once or twice a year by a physician, and the government should furnish physicians to make such examinations for the poor.

Anti-Football. — The most weighty deliverance that this fall's discussion of football has called forth is the article from the Medical Record, which we reprint in "The Revolt against Football" column. The Medical Record is a conservative medical journal of the highest standing, which speaks with authority on the subject of physical training, and its words must have great influence with people who keep their heads steady in the whirl of excitement that comes with the ending of the season. The Medical Record holds that the game as now played ought not to be allowed, on the ground that it can no longer be viewed in the light of innocent recreative amusement, with harmless and healthful athletics as its object; but that, even with "slugging" ruled out, it is "productive of the greatest variety of surgical injuries to every part of the body," and that the effect of such injuries is lifelong in a large proportion of cases. This is a phase of the subject which is seldom regarded, except by the medical profession. Unless a player is so badly hurt that he cannot enter the field again during the season, the injury is generally dismissed by both the young man himself and the public as a mere trifle, while really he may suffer the effects always, and more severely as he passes on from middle life into old age. —*New York Evening Post.*

Health Reports.—The following statistics concerning yellow fever and small-pox have been received in the office of the supervising surgeon-general of the United States Marine Hospital service, during the week ended November 20, 1897:

		Cases.	Deaths.
Yellow Fever—United States.			
Alabama, Flomaton	November 17th	1	
Mobile	November 13th to 19th	13	1
Louisiana, New Orleans	November 14th to 19th	49	12
Mississippi, Biloxi	November 14th to 19th	6	1
Clinton	November 13th to 19th	3	
Edwards	November 13th to 19th	5	1
Scranton	November 13th to 19th	11	1
Yellow Fever—Foreign.			
Cuba, Manzanillo	October 17th to 31st		5
Matanzas	November 3d to 10th		2
Jamaica, Port au Prince	November 10th		1
Small-Pox—United States.			
Georgia, Atlanta	November 14th to 17th		1

Books Received.

While the Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Handbook of Therapeutics. By Dr. S. Ringer and Dr. H. Sainsbury. Thirteenth Edition. 8vo, 746 pages. William Wood and Company, New York.

Ophthalmological Therapeutics. By Dr. Landolt and Dr. Gygax. 12mo, 138 pages. J. B. Lippincott Company, Philadelphia. Price, $1.00.

The Principles of Bacteriology. By Dr. A. C. Abbott. Fourth Edition. 8vo, 543 pages. Illustrated. Lea Brothers & Co., New York.

Handbook of Materia Medica; Pharmacy and Therapeutics. By Dr. Samuel Potter. 8vo, 900 pages. P. Blakiston, Son & Co., Philadelphia. Price, $4.50.

Practical Therapeutics. By Dr. H. A. Hare. Sixth Edition. 8vo, 758 pages. Lea Brothers & Co., New York.

Diseases of Women. By Dr. H. J. Garrigues. Second Edition. 8vo, 728 pages. Illustrated. W. B. Saunders, Philadelphia. Price, $4.00. net.

Practice of Midwifery. By H. Brown, L.R.C.P., L.R.C.S. 12mo, 103 pages. J. and A. Churchill, London. Price, $1.00.

Clinical Methods. By Dr. R. Hutchison and H. Rainy, M.A. 12mo, 552 pages. Illustrated. Lea Brothers & Co., Philadelphia.

Mastoid Abscesses. By Dr. A. Broca and Dr. F. Lubet-Barbon. Translated by Dr. H. J. Curtis. 12mo, 268 pages. Illustrated. H. K. Lewis, London. Price, 6s.

Surgical Pathology. By J. J. Clarke, M.B. 8vo, 440 pages. Illustrated. Longmans, Green & Co., New York. Price, $3.00.

Diseases of the Skin. By Dr. J. V. Shoemaker. Third Edition. 8vo, 894 pages. Illustrated. D. Appleton and Company, New York.

Skin Diseases of Children. By Dr. George H. Fox. 8vo, 190 pages. Illustrated. William Wood and Company, New York.

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Original Articles.

ACUTE SEROUS MENINGITIS (ALCOHOLIC MENINGITIS, WET-BRAIN).[1]

BY CHARLES L. DANA, M.D.,

NEW YORK,

PROFESSOR OF NERVOUS DISEASES, BELLEVUE HOSPITAL MEDICAL COLLEGE; VISITING PHYSICIAN TO BELLEVUE HOSPITAL

THE description I am about to give of so-called alcoholic meningitis is based upon twenty cases observed during life and examined after death macroscopically and in most cases microscopically. The observations were controlled by clinical and autopsical studies of a case each of pernicious anæmia, suicide, purulent meningitis, cerebral tumor, uræmia, cancer of the pylorus, and morphine poisoning. Most of these patients died in terminal conditions suggestive of the last days of alcoholics. I have also had careful notes taken by Dr. A. J. Brown, Dr. Gardner, and Dr. Daley, of cases of "alcoholic meningitis" which ended in recovery. Out of this material I have constructed a picture of what is known in the hospitals as "wet-brain," or "alcoholic meningitis," and what I have termed serous meningitis. This term is not strictly correct, as I shall show; for the process is not so much an inflammation as it is a toxæmia leading to congestion, then to an œdema both of the brain and its membranes, with a moderate serous effusion into the ventricles and decided disorganization of the brain elements. But the clinical picture is strikingly like that of true meningitis.

Etiology.—The disease occurs oftenest in men simply because of the more frequent indulgence of the male sex in alcohol. It rarely develops until a person has been drinking eight or ten years, and consequently affects people oftenest between the ages of thirty and forty. The exciting cause is commonly alcohol, and in this country whiskey or what are known as "hard drinks," but beer and ale will accomplish the same result. I have rarely seen the disease in wine drinkers. The persistent use of morphine, cocaine, and chloral may lead to much the same condition. The patients often have some tuberculosis, or sclerotic changes in the arteries, and perhaps cirrhotic liver and kidneys. The exciting cause is usually a continuous drinking-bout of two or three weeks, ending in delirium tremens. The delirium tremens, however, is not by any means always present. The patient may pass directly from a condition of prolonged intoxication into the condition of alcoholic meningitis or "wet-brain."

Symptoms.—In case delirium tremens has occurred, the patient after two or three days of prolonged delirious excitement gradually sinks into a semicoma. This is accompanied by a muttering delirium. The patient is sufficiently conscious to have flitting delusions and hallucinations of sight and hearing. At this time he is able to drink and take food; the pulse is rather rapid, the temperature is usually normal or may be raised one-half or one degree. The skin is hyperæsthetic, and pressure upon the muscles of the arms or legs or abdomen causes pain. The patient rarely complains of headache, as in acute meningitis, and he has no explosive vomiting. The pupils are usually rather small. Often at this time conjunctivitis and keratitis appear.

After a few days the patient's stupor becomes deeper and he can be aroused only with difficulty. The arms and legs are now somewhat stiff, the reflexes are exaggerated, the neck is stiff and slightly retracted, and attempts to move the head bring out expressions of pain. Indeed, the stiffness is in a measure voluntary, the patient resisting directly attempts to move and bend the limbs. There are no jerking, jumping, or convulsive movements. The abdomen is retracted and the skin and muscles are still very hyperæsthetic. The lids are nearly closed; the pupils are small and do not react well to light. The tongue is coated and usually dry, and urine and fæces may be passed involuntarily. The patient may linger this way for several days more. The pulse becomes rapid and feeble, the extremities are stiff and cold. The skin is dry and loses its elasticity, so that when pulled up between the fingers it stays in folds. "Putty skin" is a good name for this. The coma deepens, the temperature may rise to 103° or 104° F., and symptoms of pneumonia may appear as the scene closes, the duration of the attack being about ten days. On the other hand, in some cases the patient does not pass into the worst stage, the mind becomes clearer, the hyperæsthesia lessens, food is taken better, and the bowels are moved voluntarily. Improvement continues, and in three or four weeks the convalescence begins.

Some special clinical observations were made for me by Dr. A. J. Brown. In ten cases the blood was examined. He found in all a diminution of red blood cells, the average being about four million per cubic millimetre. The hæmoglobin was also diminished, the average being seventy per cent. Evidence of degeneration of the red blood cells and of poikilocytosis and leucocytosis was often noted.

The urine noted in two cases showed excess of urea and earthy phosphates. Albumin was found once, and this was due to an old nephritis.

Electrical tests of the muscles showed uniformly a lessened irritability to the faradic current. The deep and superficial reflexes were usually exaggerated until the latest stage, when they were diminished.

Careful examination of the eyes was made in a number of cases by Dr. A. E. Davis, who reported his results in *The Post-Graduate*. He never found optic neuritis; in the early stages there was congestion of the fundus.

Pathological Anatomy.—Besides autopsies made under my own direction, I have a number of careful reports from Dr. H. Brooks, of the Carnegie Laboratory.

In cases of short duration in which the delirium has hardly abated or in which a pneumonic fever has complicated the course, the meninges are congested; but in the typical prolonged cases this congestion is only moderate. The dura is often thickened; rarely it is

[1] Read at the meeting of the Practitioners' Society, October 15, 1897.

adherent in places to the pia. The pia is thickened and opaque just about in proportion to the age of the patient and duration of the alcoholic habits. It sometimes shows hemorrhagic patches. There is considerable serous fluid in the subdural sac and in the subarachnoid spaces. The ventricles are usually found dilated and contain an excess of fluid, but are not often extremely distended. The brain when cut into is rather pale, soft, and shows punctate hemorrhages, especially in the deeper parts and in the pons. Occasionally one finds points of hemorrhagic softening, similar to those described as hemorrhagic encephalitis.

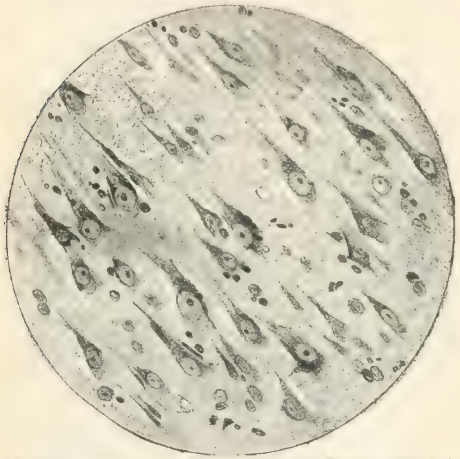

Fig. 1.—Male, Thirty-four. Alcoholic "meningitis," seven days, mid-central convolution. × 1/2 in. Pericellular dilatation and infiltration.

Microscopic examination shows in the uncomplicated cases that there is no true inflammatory process. There is often congestion, but not always; the commoner condition is an œdema of the brain tissue, the perivascular and pericellular spaces being dilated. The nerve cells show conditions of degeneration such as one might expect if they were attacked by an irritative and destructive agent, which agent had not markedly affected the vascular conditions of the part. The cortex may even be somewhat pale, and often shows the evidence of œdema in the dilated perivascular and pericellular spaces. The cell bodies themselves show, in very acute and febrile cases, a great degree of pigmentation, and in some cases the masses of pigment occupy more than half of the body of the cell. In the pyramids these deposits are usually at the base, in the region of the axis-cylinder process; in some of the spindle-shaped cells of the deeper layers the pigment is seen deposited between the nucleus and the apex of the cell. But in the ordinary types of wet-brain I found but little abnormal pigmentation. The cytoplasm shows a loss of the distinct chromophilic markings, and looks as though these bodies had been broken up into granular masses. The body of the cell sometimes looks as though it were made up of minute fatty granules. Sometimes the granular masses have dropped out of the cell into the perivascular space. The pigmentary changes are always most striking in the large cells. The changes are by no means uniform, but appear to affect certain areas, and are much oftener seen in a typical fashion in the cortex of the central convolutions than in the occipital or frontal lobes. The cell processes are still fairly perfect, at least many of them, and at times the chromophilic granules can be well seen at the roots of the cell processes, especially the axis-cylinder and the apical process, though the cell body may be in a very damaged condition. Nothing is so striking throughout the whole of the brain cortex as the preservation and great integrity of the nuclei and nucleoli. In the smaller pyramids, in which the body subtance is relatively less in amount, these nuclei are often stripped almost entirely of the surrounding cytoplasm; but the nucleus itself usually remains unchanged in form and size. The chromatic network is not easily made out, however. The nucleolus loses its sharp outline, and shows ragged edges, becoming star shaped, and sometimes being thinned out into a line. As the cell body degenerates and is dropped off, the nucleus becomes more and more nearly free, and the nucleolus can be seen approaching the line near the periphery of the nucleus. A vacuole is sometimes seen in the nucleolus, but never in the cell body in good specimens. It is a pretty well-established fact that in the nucleus, with its nuclein or nucleic-acid compounds, takes place the constructive metabolism of the cell. When this part is destroyed, the cell may live for some time, but it cannot regenerate or longer perform its functions. On the other hand, if the nucleus still remains intact, the capacity of the cell to throw out a new body and reconstruct itself is still present.

In the brains of alcoholics which I have examined, there is throughout the transverse section a striking integrity of the nucleus, and I attribute to this the fact that, despite the most severe intoxication with alcohol poisons, the individual may still recover perfectly his former mental powers.

The smaller blood-vessels sometimes show thickened walls and the evidence of a general arterial sclerosis.

Pathology.—Persons suffering from acute alcoholism, and who have afterward died in that condition, have come to the hospital with this history: First, that they have been hard drinkers for a good many years, or else moderate drinkers with periodical sprees; next, that they have been drinking very hard for two or three weeks previous to admission; third, that they have practically eaten nothing for a number of days, having sustained life by copious libations of beer and whiskey, intermixed with gin, a little beef tea, milk, and vichy, and occasionally some soft food. Finally, these patients, for some days before death, are lying in a condition of coma, with a little fever, or else are in active delirium, with a considerable degree of fever.

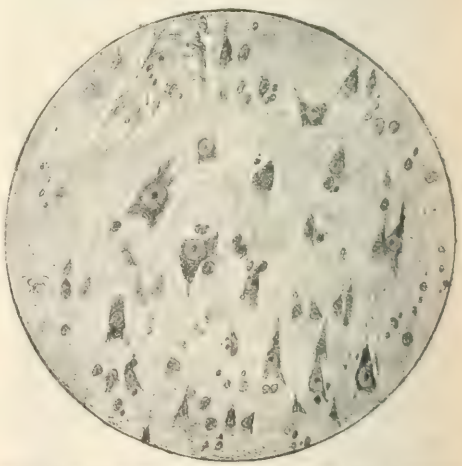

Fig. 2.—Male, Thirty-six. Alcoholic "meningitis," ten days, mid-central convolution. × 1/2 in. Pericellular dilatation and infiltration, cytoplasmic degeneration.

The conclusion that I draw from these conditions is that death in such cases is not caused in any large degree by direct poison from alcohol, but is due much

more to exhaustion and starvation, which probably lead to the development of leucomains or toxic products of some sort, the result of the disturbed metabolism. The pictures, therefore, of cell degeneration in persons who die of acute alcoholism do not represent the same things that one would get in producing acute and excessive alcoholic poisoning in animals by the injection of massive doses of the drug.

It is probable that the injured cells, losing their vitality, throw off products of acute degeneration. These morbid chemical products lead to a vascular relaxation or other morbid state of vessel walls; serum is poured out for the purpose of dissolving and carrying away the products of cell degeneration. This process is a serous exudation, which, being a reaction to an irritant, is protective to the organism, and may therefore be classed as inflammatory, using that word in its broadest sense. If this serous exudate could be rapidly withdrawn, so much poison would be taken from the system, and the parts would heal just as when the pleural effusion is removed. This furnishes a certain rational basis for the treatment to be referred to later.

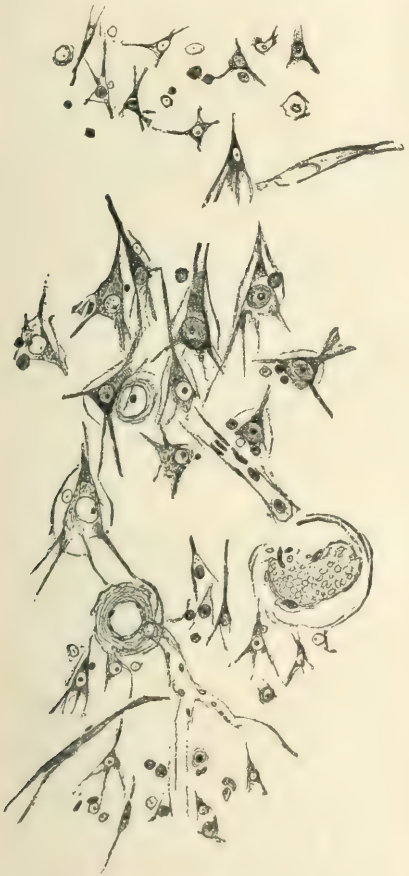

FIG. 3.—Male, Forty. Delirium tremens, followed by "meningitis," four days. Cells of three layers of mid-central convolutions. × 1/10. Granular degeneration of cell bodies, pericellular infiltration, arteriosclerosis.

Diagnosis.—The diagnosis of the disease is to be made from ordinary suppurative meningitis, from acute serous meningitis due to infection, and from acute encephalitis. In most cases the history of the patient is quite sufficient to establish the diagnosis. The symptoms of themselves are almost identical with those of ordinary acute suppurative meningitis. The only distinctions which I have been able to observe are that in suppurative meningitis there is more fever, there is less of the low delirium, hallucinations are rare, and there is an earlier and more profound coma. In other words, it is an acuter and more severe malady than alcoholic meningitis. The absence of convulsions and paralysis and the presence of hyperæsthesia, rigidity, and contracted pupils, as well as the absence of pyrexia, are usually sufficient to distinguish the disorder from encephalitis or encephalitis complicated by alcoholic meningitis.

Prognosis.—The prognosis is bad when the disease has become well developed with fever and when decided coma and rigidity have set in. Most cases not seriously complicated with other diseases get well. A prognostic criterium which I have long used and which is fairly accurate is this: if the patient has not a stiff neck he will get well, but when stiff neck comes on the patient dies in the majority of cases.

Treatment.—The treatment of the disorder should be instituted at the very beginning. If there are still any relics of the debauch, as shown in the condition of the stomach or intestinal tract, the stomach should be washed out, and at all events a thorough purge should be given. The patient should then be fed most liberally with hot milk given every two hours; beef tea and an egg beaten up in milk may also be given, and the condition of practical starvation should always be borne in mind. Stimulants in the shape of whiskey should not be administered if it is possible to avoid them, but strychnine in doses of one-sixtieth of a grain every two hours is often useful. An ice cap should be applied to the head, and at times leeches or large blisters seem to be useful applied to the back of the neck. The patient, however, should not be much depleted. When he becomes comatose it means that the ventricles and arachnoid cavities are becoming filled with water. At this time tapping the spinal cord may be tried. I have done this in about fifteen cases, and have at times removed two or three ounces of fluid with some amelioration of the symptoms and never any bad results. In one case the patient improved at once, and finally recovered. In the others improvement was only temporary.

REPORT OF THE PROGRESS MADE IN THE TREATMENT OF LARYNGEAL TUBERCULOSIS SINCE THE LAST INTERNATIONAL CONGRESS.*

BY J. W. GLEITSMANN, M.D.,

NEW YORK CITY,

VICE-PRESIDENT OF THE LARYNGOLOGICAL SECTION OF THE INTERNATIONAL MEDICAL CONGRESS; PROFESSOR OF LARYNGOLOGY AND RHINOLOGY, NEW YORK POLYCLINIC; CHAIRMAN OF THE SECTION OF LARYNGOLOGY OF THE NEW YORK ACADEMY OF MEDICINE; LARYNGOLOGIST TO THE GERMAN HOSPITAL AND DISPENSARY, ETC.

WHEN I was honored by the committee of our section with the request to open jointly with Dr. Ruault the discussion on the progress in the treatment of laryngeal tuberculosis, I was of the opinion that it would facilitate our work and enhance the value of our contribution, if, with the magnitude of the subject before us, a division of the different topics could be arranged, as in this case each of us could devote himself entirely to the task assumed, and unavoidable repetitions would be obviated. As Dr. Ruault has expressed the desire to treat the subject in its entirety, I apologize

* Paper read by invitation to open the stated discussion on laryngeal tuberculosis in the section on laryngology and rhinology of the Twelfth International Medical Congress, Moscow, August 20, 1897.

beforehand if I should tread upon ground already covered in his discourse.

It is my intention to give in this report a critical review of the development of the treatment of laryngeal tuberculosis, to mention in this connection the remedial agents introduced since the last international congress, and to conclude with remarks on the surgical treatment, to which I have paid attention for several years. In this manner I hope to keep my paper within reasonable limits, to avoid repeating what has already been said, and to be able to present one or two new contributions to the treatment, which I shall submit to your consideration and criticism.

The time is certainly within the memory of several of us when laryngeal tuberculosis was considered a *noli me tangere*, and was best left alone. Fortunately this period has passed by, never to return, although the results obtained and our power to effect a cure are still more limited than the exertion and the devotion of many of our best men to this special subject would merit. But if our earnest efforts fail sometimes, we must not forget, as Semon[1] very appropriately says, when speaking of the prognosis of laryngeal tuberculosis, that it is merely a local manifestation of a general infectious process, and that we cannot promise to cure the latter, even when successful in arresting for a time the laryngeal complication. On the other hand, we have learned; and we feel justified to subject to treatment, and if necessary to use energetic means, patients in whom we know beforehand that a cure is impossible, but whose sufferings we feel called upon to relieve. The fact that we are now able to give relief, even when we cannot cure, is certainly in a great measure due to our modern methods of treating laryngeal tuberculosis. When I make this statement I do not mean to underrate in the least the brilliant results, obtained by many of us, which terminated in a permanent cure of the larynx in a number of cases by employment of different means. But the proportion of cases cured to the vast number of sufferers is very small, and many whose larynges ultimately healed succumbed to the concomitant pulmonary disease. Let us hope that the efforts made now in all parts of the globe to master the latter may before long be crowned with success, when we can expect that the number of hopeless laryngeal cases will decrease and our work be less subjected to criticism than it is at the present time.

The treatment of laryngeal tuberculosis can in my opinion be very properly divided into three chapters: the medicinal, the local, and the surgical, although a combination of two or of all three methods is often advisable and necessary.

As to the employment of medicinal agents. I always endeavored to improve the general and the pulmonary conditions, thereby influencing favorably the laryngeal lesion. I cannot share the absolute negation of the utility of the creosote preparations, as stated by Stoerk,[2] but prefer to give the carbonate combinations. I have seen improvement follow after the use of carbonate of guaiacol and, still more, benzozol, especially at the beginning of the disease. Leaving the other well-known drugs out of consideration, I have also tried to treat a number of my patients with injections of tuberculin and its products, and with serum. The tuberculin injections made years ago did not satisfy me, although I am not prepared to deny their value in pulmonary affections if properly used. I have no experience with Maragliano's serum, and the new tuberculin of Koch is of too recent a date to allow of any report on its definite value.

Under local or topical treatment I understand atomization, inhalation, insufflation, injections, and pigments. The three agents named first will always retain their place in the therapeutics of laryngeal tuberculosis; and inhalations and insufflations have been for some time and are even now employed as curative agents, although Hajeck[3] says that he has never seen an ulcer of undoubted tuberculous nature heal from the application of antiseptics alone. You will spare me their enumeration, the more so because I have no new drug to add to the list. Rosenberg's injections of menthol in olive oil are known to all of us. Recently Botey,[4] who began experimenting as early as 1890, claims to have seen improvement from tracheal injections of creosote and guaiacol in laryngeal and pulmonary tuberculosis. He injects a one to two per cent. solution in olive oil, with a suitable syringe, in doses gradually increasing from three to twenty grams. His statement of the results obtained is as follows, viz.: That in more than half the number of patients the pulmonary symptoms had remained stationary, the expectoration and the cough had lessened, and the general nutrition had improved. About half the number of patients he claims to have cured by two months' treatment. Similar data are given by Barton,[5] who gave intratracheal injections of benzoinol, europhen, and menthol to ten patients, three of whom had pulmonary phthisis, with considerable improvement. I have also used these injections, with agreeable results, in chronic bronchitis and tracheitis, but confined myself to atomization of these compounds in laryngeal tuberculosis, considering these remedies less effective for a cure than for an amelioration of distressing symptoms, which purpose they fulfilled.

Of all the remedies applied locally in the larynx, and we might almost say of all the means employed in the treatment of laryngeal tuberculosis, none enjoys such universal consensus of opinions as to its efficacy as the application of lactic acid, introduced by Krause in 1885; and it is gratifying to note that there is an equal harmony in regard to the manner of its application, as well as to the indications for it. Scepticism is for once subdued, and as much as one may feel disappointed in the value of a remedy, and criticise its indications, which has proved useful in another's hand, Krause's discovery has, to my knowledge, no opponents at present.

Similar results have been observed from the use of sulphoricinate of phenol, which has found an ardent advocate in my honorable confrère, Dr. Ruault,[6] whose report, based on extensive and painstaking studies, is before you. I have nothing to add to his remark, except that his statements are supported by others, among them Heryng,[7] who also found that it promotes not only healing of tuberculous ulcerations, but also absorption of infiltrations.

Another remedy, which has been tested by a number of colleagues, has been recommended by Simanowsky[8] and Spengler,[9] of St. Petersburg, viz., parachlorphenol. The former says that superficial nodules and ulcerations disappear quickly after a few applications, and that deeper ulcers and large infiltrations require treatment of several months. The solutions he employs are from five to twenty per cent. parachlorphenol in glycerin, and he claims that they exert their beneficial influence by penetrating into the depth of the tissues themselves. His views are corroborated by Spengler, Zinn,[10] Hedderich,[11] and others. Zinn praises the remedy very highly and considers it an important addition to our therapeutic means. It has also a long-lasting anæsthetic effect after the first pain from the application has subsided. In the discussion following Hedderich's paper, divergent views were brought forward by Lublinski and Seifert, who found the remedy too painful and of no better effect than creosote or chloride of zinc. From a limited experience I can testify to the efficiency of parachlorphenol, but in a few cases the infiltrations would not yield and I had to have recurrence to curettage.

In a paper read before the American Laryngologi-

cal Association at Washington, last May, Dr. Murray spoke of a new preparation, called enzymol, as a most valuable auxiliary to the curette and lactic acid. In his remarks he said that it was non-irritating, and possessed in a high degree the quality of digesting necrosed tissue. He applied it to a large ulcer upon the ventricular band, and in twenty-four hours the detritus with which the ulceration was covered had entirely disappeared, leaving a perfectly clean surface, upon the face of which were two nodular projections, apparently tuberculous deposits which had not yet undergone the process of ulceration.

The last part of our subject, the surgical treatment, is the most modern and radical measure, and consequently more a subject for criticism than are the previous ones. It comprises different procedures, viz.: 1, Incision; 2, curettage; 3, submucous injections; 4, electrolysis; 5, galvano-cautery; 6, laryngotomy; 7, laryngectomy; 8, tracheotomy; and 9, intubation. The endolaryngeal measures, and of these the curettage, are naturally of the greatest interest to us, and although with one exception—which will be stated later on—no important new discoveries have been reported, as far as my knowledge goes the number of opponents has lessened, the indications are more clearly defined, and a better judgment as to the results obtainable prevails.

Curettage, which was favorably spoken of by fifteen members of the laryngological section of the International Congress at Rome, has since made many converts, and it is a source of great pleasure for me to be able to say that it has also been more frequently employed in the United States within the last few years. Two years ago a general discussion on laryngeal tuberculosis took place at the meeting of the American Laryngological Association in May,[12] when the reader was assigned to speak about the surgical treatment; and later, in July, he was allowed to contribute his mite on the same subject before the British Laryngological Association,[13] after listening to the excellent essays of Krause and Heryng. From this time dates the greater familiarity of the American profession with surgical treatment, and although its adoption is but slowly progressing, I know, from personal and other communications with medical men and instrument makers who supply the instruments in increasing numbers, that curettage has taken a firm foothold also in the Western hemisphere.

The reasons why curettage is slow to find general recognition in suitable cases are in my opinion twofold: 1st, we are only too often confronted with the impossibility of eliminating the almost always concomitant pulmonary disease to which ultimately the majority of sufferers succumb; 2d, the difficulty of removing all the tissue which is diseased and of preventing relapses.

As to the first objection, the laryngologist is in the same position as the surgeon in similar cases. The latter does not hesitate now to excise a tuberculous articulation without hoping to cure thereby the tuberculous diathesis, but he removes by his operation a constantly threatening focus of infection. He makes gastrotomy in cancer of the pylorus without expecting to influence the malignant growth, but with the assurance that by the introduction of nourishment the tortures of starvation will be avoided and the patient's life prolonged. Operations with such an object in view are not only justifiable, but also imperative for the surgeon as well as for the laryngologist.

The second objection, as to the difficulty of removing all the diseased tissue, cannot be sustained if the cases are properly selected. It is true that we often labor under the disadvantage of not being able to excise the tuberculous infiltrations until we reach healthy tissue. But I believe that Pieniazek,[14] in his excellent monograph on laryngotomy, goes too far when he limits curettage, 1st, to cases in which there are no or only small infiltrations of the lungs; 2d, to those in which the laryngeal lesions are so circumscript that they can be easily and thoroughly removed, at the same time a part of the neighboring healthy tissue being taken away. We know that one curettage is seldom sufficient in a given case, and we should feel encouraged by the successful efforts of Hajeck,[15] who ultimately cured the larynx of a patient after having operated endolaryngeally twelve times before the granulations of the vocal cords and intra-arytenoid region were completely removed. In his paper he also emphasizes a point to which I attribute great importance, viz., to individualize and to discriminate in each particular case before curettage is decided upon. Some patients, he says, bear cocaine badly, lose their appetite; with others it is followed by fever and general depression. Rethi[16] is of the same opinion; he writes about a patient with a moderate infiltration of the intra-arytenoid fold and right vocal band, who became aphonic two days after curettage; severe dysphagia set in, the wound did not heal, and perichondritis developed with subsequent exitus. I had a similar case this spring, in which I considered curettage eminently in place, and in which it was also indicated on account of dysphagia. The excision of the intra-arytenoid region was easily accomplished, but the wound covered itself with a tenacious grayish deposit, which would not yield to local applications; the sufferings of the patient were increased rather than lessened, and his death was possibly accelerated by the well-meant operative interference. It is extremely doubtful if we shall ever be able to foretell in each individual case the accidents that may befall a patient whom we conscientiously believed a fit subject for curettage; but by following the indications to be stated we shall be guarded in the majority of cases against mishaps which may otherwise occur.

As to relapses, we shall not be able to forestall them by curettage, but, if it is rightly adopted and properly executed, they will not be more but rather less frequent than with other methods of treatment. We have at present no remedy which is an absolute safeguard against relapses in so treacherous and misleading a disease; but we are entitled to hope that the remedies which have promoted absorption of tuberculous infiltration so successfully without operative interference will also materially assist in the elimination of diseased tissue unavoidably left after curettage, as well as prevent too frequent relapses.

I crave your indulgence for the lengthy remarks just made, which contain nothing new to a body of men such as I have the honor to address. But curettage has more adversaries at large than we may perhaps believe, and I thought it only right that a positive declaration of its propriety and utility should be made on this occasion, which, with the discussion following, will have more weight and find more recognition than when made in a smaller circle.

Through the efforts of many of our best men, whose number is too large to permit naming them, the indications for curettage are now more clearly defined than they used to be. Theodor Heryng, your countryman, whom we can well call the father of surgical treatment, and who by his numerous publications and indefatigable efforts has probably contributed more than any of us to destroy the fallacy of the incurability of laryngeal tuberculosis, has in two recent publications[17] written fully about the indications and contraindications for curettage, the precaution we have to use in its execution, and the results we are entitled to expect. His views are the same as I expressed in my paper heretofore mentioned, with the only exception that I do approve of curettage as a measure for

relief in advanced phthisis, when the dysphagia is so severe as to prevent the patient from taking nourishment—a view which also Krause corroborated in his remark before the British Laryngological Association, 1895, giving at the same time a very good illustration of its benefit in a case of this nature. I therefore consider curettage indicated:

1. In cases of primary tuberculous affections without pulmonary complications, in one of which at least I prevented the infection from extending to the lower air passages and restored the patient to health after a severe and prolonged struggle, over eight years ago.[18]

2. In cases with circumscribed ulcerations and infiltrations of the larynx.

3. In cases with dense hard infiltrations of the arytenoid region of the posterior wall, also of the ventricular bands, tuberculous tumors of the epiglottis.

4. In the incipient stage of pulmonary disease with but little fever and no hectic symptoms.

5. In advanced pulmonary disease with distressing dysphagia resulting from infiltration of the arytenoids, as the quickest means of giving relief.

As the last indication noted may possibly incur more opposition than the others, I feel constrained to state that it was always a great source of satisfaction to me when I was able to relieve a sufferer, though I knew his days were numbered, from the tortures he had to endure. In such cases I know of no procedure which acts so rapidly and so effectually as curettage, and it is surprising how well such patients bear the operation and how quickly the wound heals, even in an advanced stage of the disease.

The contraindications for curettage are:

1. Advanced pulmonary disease and hectic.

2. Disseminated tuberculosis of the larynx.

3. Extensive infiltrations producing severe stenosis, when tracheotomy is indicated, or laryngotomy can be taken into consideration.

I fully agree with Heryng not to advise the operation in timid, distrustful patients lacking the necessary nerve power, and, like him, prefer to operate on the patient in a hospital, where he is under absolute control and the after-treatment can be carried out more satisfactorily.

The technique of the operation has been greatly facilitated by Heryng's rotary double curette, which, although published before the last international congress,[19] ought not to be left unmentioned in a treatise on this subject. Dr. Gougenheim constructed an instrument which he called "*emporte pièce*," which, being larger than Krause's curettes, enables him to remove a greater amount of tissue. The instrument is mentioned in his report at the last congress.

Two years ago, at London, Heryng spoke at length about the details of the technique of curettage, and showed elaborate drawings, which by his permission I present to the section. They are so well executed and so plain in their conception that I deem further remarks unnecessary.

Of the other surgical measures there are only a few about which I shall make some comment. Submucous injections of lactic acid gave me satisfactory results in a number of cases in which curettage was either objected to or considered inappropriate. Only two months ago I was spared, in all probability, a disagreeable experience by a submucous injection while preparing a patient for curettage. I intended to use the double curette and to excise both arytenoid regions, of which the right one was slightly ulcerated and felt softer to the touch of the cotton carrier when applying cocaine than the left one. As a number of applications did not produce the desired local anæsthesia, I injected cocaine with a laryngeal syringe into the right arytenoid swelling, when a continuous and prolonged hemorrhage followed. I naturally desisted from curettage, and injected in both sides a fifty-per-cent. solution of lactic acid. The result was that the hard dense left portion sloughed away almost completely after a week, leaving a healthy surface, and the right arytenoid meanwhile became smaller and firmer and allowed curettage without any untoward accident, greatly to the relief of the patient, who had not swallowed solid food for several weeks previously.

Dr. Chappell, of New York, has used the creosote treatment in his clinic during the last two years in the form of sprays, pigments, and submucous injections. For the latter he uses wintergreen and castor oil as a vehicle, in the proportion of one drachm of creosote to the ounce, which he injects with an automatic syringe devised by himself, and which I present for your inspection. His results are embodied in two reports,[20] which he supplemented by a verbal communication as follows: Of the first series of seven patients, four are alive; of the second series of thirty-two patients, eight are alive; including the four of the first series, ten had relapses, five died, and nine were lost sight of. Of twelve patients seen after publication of his reports, one had a considerable ulceration of the larynx which healed entirely, five showed marked improvement, of two he has no further information, and five lost the improvement previously gained. As I have not practised the local creosote treatment, I have no personal experience and must confine myself to reporting what has been communicated to me.

To the subject of electrolysis belongs cataphoresis, which I have to offer as a new contribution to the treatment of laryngeal tuberculosis, by Dr. Scheppegrell,[21] of New Orleans. Last May, after having tried several substances, he finally decided to use electrodes made of chemically pure copper, finding that the oxychloride of copper is a salt possessing marked germicidal properties, while exerting at the same time a stimulating effect on the pathological tissues. A five-per-cent. spray of cocaine is sufficient for local anæsthesia, the current must be weak (rarely over five milliamperes), and the copper electrode is to be connected with the positive pole, the negative pole with a large dispersing electrode to the neck. The applications are made, as a rule, every second day. To obviate laceration of the tissues during movements of the larynx and to prevent infections by punctures made by needles, he constructed spherical electrodes, which he found efficient for cataphoresis, and when properly applied to occasion no pain, irritation, or reaction. I brought the instruments with me, and offer them to you for inspection. Scheppegrell found autoscopy a valuable help when applying cataphoresis, and claims for the latter:

1. That there is no real destruction of the tissues or lacerations of the surfaces.

2. That there is absolutely no reaction, no hemorrhage.

3. That this method does not demand the high degree of skill required for curettage, and is especially simple when used with the autoscope.

4. That it is applicable in all cases of laryngeal tuberculosis.

Scheppegrell gave in his paper the history of three patients treated with cupric cataphoresis, to which he added four more cases in a letter to the writer, dated June 1st. All his patients had pulmonary complication. In three cases the treatment had to be discontinued on account of the advanced stage and weakness of the patient. In two recent cases the ulceration and infiltration of the arytenoid region subsided and the dysphagia was relieved. The first patient he treated was similarly affected, but after seven applications he was so much improved that he went into the country, from which he returned after six weeks with his pulmonary trouble aggravated, but with

no recurrence of laryngeal ulceration. His third patient suffered for seven months from tuberculous laryngitis, and had, in addition to ulceration and infiltration of the arytenoid region, also tumefaction of the epiglottis. After eleven applications the ulcerations had entirely healed, enabling the patient to take solid food without pain, and eight weeks later, with biweekly applications, the infiltrations also had disappeared. The improvement was lasting, and was verified six months later, when the larynx showed no return of the previous disease.

The number of cases is too limited and the time of observation too short to allow a definite opinion of the value of this method. But its application is simple and the results are sufficiently encouraging to merit further investigation and trial.

Larygotomy and tracheotomy in laryngeal tuberculosis have been the subject of two essays which deserve a passing notice. Crepon[22] has collected seventeen cases of laryngotomy from the literature, to which two have to be added, published by Lohoff,[23] and two performed by Pieniazek.[24] Four of Crepon's patients became worse after the operation; four were temporarily relieved from their sufferings but ultimately died from the pulmonary disease; seven experienced remarkable improvement of their ailment and also of their general condition; one patient, operated upon by Hopmann, was still able, after eleven years, to preach in a loud although somewhat hoarse voice. In one of the two cases reported by Lohoff the patient died immediately after the operation; the other, with infiltration of both lungs, was in fair health three years after the operation. Of Pieniazek's patients one died five days after, the other eighteen months after the operation. The latter considers laryngotomy indicated when the lesions are localized in the region of the glottis, therefore in affections of the vocal cords, of the arytenoid regions, and especially of the subglottic space. As he says that laryngotomy ought to be made only in a relatively good condition of the lungs, the number of suitable cases will naturally remain small, as we see unfortunately a well-developed pulmonary disease in the majority of our patients.

In his treatise on tracheotomy Lohoff does not consider it a curative measure, nor does he approve of it being made only as a last resource. He coincides with the generally accepted view that it is indicated in stenosis and dyspnœa, but in such cases without reference to the pulmonary condition.

If, in conclusion, we allow all that has been said to pass in review before our mind, we are compelled to acknowledge that during the last few years not only satisfactory progress in the treatment of laryngeal tuberculosis has been made, but also that in many directions diligent efforts are being made to overcome our deficiencies and to improve our methods. But let us at the same time keep in mind the well-meant words of Kuttner, viz., that by laryngotomy we can very well recognize laryngeal tuberculosis in its initial stage, but that we seldom see a patient at the commencement of the disease. When the necessity of an early interference shall be more fully accepted, when the better results obtained at this stage shall be more generally recognized, then also the laryngologist will find his task easier, and earn with greater satisfaction to himself the well-deserved rewards for his labors.

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ON THE MICROSCOPICAL EXAMINATION OF BACTERIA, ETC.

By HENRY G. PIFFARD, M.D.,

PROFESSOR OF DERMATOLOGY, NEW YORK UNIVERSITY.

DURING a conversation recently held with one of our most eminent bacteriologists he expressed himself substantially as follows: "Bacterial investigation has about reached its limit. We may discover more species and doubtless will, but I do not see how we are to find out anything more about those known at present, unless some one will discover or invent new or improved methods of investigation."

In the systematic examination of bacteria as usually conducted at the present day, it must be admitted that the culture tube and the plate take precedence over the microscope. Prepare a slide in the ordinary way and submit it to a professed bacteriologist, and he will tell you at a glance through the microscope whether it is a coccus, a bacillus, a merista, a sarcina, or a —thrix. He will also tell if it is a streptococcus, or a staphylococcus, or a diplococcus, but beyond that he will hardly venture, except in the case of a limited number of micro-organisms with specially characteristic morphological peculiarities. If you press him for a diagnosis he will say: "Give me some of the fresh material and let me make plates and tubes, and I can

then tell you what it is;" and his diagnosis will be based more on the macroscopical appearance of the cultures than on the microscopical appearance of the organism. Occasionally differential staining and decolorizing methods will assist the observer in arriving at a decision as to the particular species under examination.

While the bacteriologists have exhibited the most persevering efforts in perfecting some of the details of their art, and great ingenuity in devising apparatus and other aids in their work, they appear in the main to have neglected one important side of the question —namely, the optical one.

The usual routine as practised in college and other public laboratories is to make the smear on the cover glass (sometimes wrongly on the slide), fix and stain it, and then examine the mount in water, cedar-oil, or balsam, using for the purpose a $\frac{1}{12}''$ homogeneous immersion objective and an Abbé condenser, with daylight illumination. If asked why they do not adopt better methods, some will reply that they did not know there was any better way. "This is the way the books tell you, and this is the way they do it in Germany." Others will say: "Oh, life's too short; haven't time to learn better methods, even if there are any. All I care about is to be able to tell a tubercle or some other bacillus when I see it, and I can do that now." Exceptionally there are men who would do better if they knew how, but whose lack of familiarity with the elementary principles underlying the microscopic art stands in their way.

To-day there are twenty-five men using the microscope where there was one twenty-five years ago, yet the average skill in microscopy possessed by the present-day workers is decidedly below that of their predecessors. That is to say, in former times there was a much larger proportion of workers who thoroughly understood the capacity and possibilities of the instrument than we find to-day. The mere fact that a man works six or eight hours daily with the microscope does not necessarily imply that he is a skilful microscopist, and when the work is of routine character and of limited scope it tends to retard rather than to advance the acquirement of special skill in the use of the instrument. A man may drive a garbage cart for ten years, going daily over the same route, but though he may be able to guide his horse through the street without collision or other accident there is little in his occupation that tends to make him a skilful horseman, in the proper acceptation of this term.

Before the invention of the homogeneous immersion lens, the value of wide angle and high aperture was fully appreciated by intelligent and observant workers, although the exact relationship of aperture to performance was not properly understood until made clear through the labors and researches of Abbé.

In the construction of dry lenses of wide angle, America twenty-five years ago stood in the van, with Charles A. Spencer as its leading exponent. On nearly a par with him were Robert Tolles and William Wales. In water-immersion lenses, England, represented by the firm of Powell & Lealand, was in the lead. The American makers were close seconds, and Hartnack in Paris stood next. The German objectives were but little esteemed, and at even the present day, so far as dry lenses are concerned, they do not compare favorably with the best American and English work.

Before the invention of the homogeneous immersion lens, workers with wide-angle dry and water-immersion objectives found it necessary to possess and employ a certain degree of skill in the management of their tools, and microscopy was truly an art requiring the exercise of the intellectual faculties as well as mere manual manipulation. The invention of the homogeneous or oil-immersion objective and the Abbé condenser have changed all this, and microscopy as generally practised at the present day is little more than a purely mechanical operation; and we need not therefore be surprised that there are large numbers of men using the instrument daily who have not the remotest conception of the true capacities of the instrument or of the proper means of developing them to the utmost. Place a high-grade dry lens (say, one of 4 or 3 mm. equivalent focus, and a numerical aperture above 0.90) in the hands of one of these men and he is absolutely helpless. He may by the veriest chance obtain a correct image of the object under examinations, but the probabilities of his doing so are very slight indeed.

Three or four years ago a gentleman who was an instructor in pathological histology in one of the laboratories of this city brought me a photomicrograph, saying that it did not suit him, but he did not know what the matter was. A glance at the picture revealed an intensely undercorrected image, and I told my friend that he had been using a very poor lens. "Why," said he, "that cannot be. I used a Zeiss 4 mm. apochromatic, and the object was carefully mounted with a very thin cover." I then asked: "What was the position of the screw collar?" He did not quite understand my question, but after some explanation admitted that he did not know what the adjustable collar was for, or how to use it, but that he always screwed it up tight and used it that way. In his ordinary work he always used the shortest possible tube length, as it didn't make him stretch his neck up so far to look into it, "except when I want to magnify a little more, and then I pull it out farther." There are just three ways in which one may obtain an undercorrected and untruthful image with a well-made high-grade dry lens. These are using too short a tube length, using too thin a cover glass, and bringing the middle and posterior systems of the objective into too close approximation.

Now in the particular instance here stated, the operator had succeeded in producing undercorrection in all three ways, and in fact had almost exhausted the possibilities in this direction in the falsification of the image.[1]

How many microscopical workers are there at the present day who take the pains to use cover glasses corresponding in thickness to the corrections of the objectives? How many adjust the tube length properly; and how many, if they happen to possess an adjustable objective, know how to use it?

Reverting to our first paragraph in reference to new and improved methods of investigation, we may well ask when will such methods be discovered? Possibly to-morrow—perhaps not for years. In the mean time would it not be well to utilize all means now known to science, whereby better images may be obtained than those now commonly displayed?

If we desire to accomplish this we must consider: (1) the illumination; (2) the condenser; (3) the objective; (4) the slide and cover; (5) the mounting medium; (6) the method of mounting and staining; (7) the immersion medium. To obtain the very best results the microscopical worker must avail himself of each and every aid that will contribute its factor toward the perfection of the image and consequent accuracy of delineation.

Illumination.—Before the invention of the Abbé condenser and at a time when achromatic condensers were few and far between, the concave mirror was the only available means of condensing the light on the object under examination. The curvature of the mirror was usually such that parallel light was focussed

[1] For further information concerning undercorrection, see MEDICAL RECORD, October 17, 1896, p. 545.

on the object, the mirror being permitted to move up and down on the bar, to allow for variations in the thickness of the slide on which an object was mounted. If daylight was used, the light reflected from a white cloud gave much finer results than light coming from a pure blue unclouded sky. The difference is so noticeable that some microscopists sought to imitate the cloud lighting by having mirrors made from plaster of Paris or porcelain, to be used with a blue sky. If artificial light is used, it is necessary to have either a mirror of shorter focus or to use a bull's eye between the lamp and the mirror; otherwise the light will be focussed considerably above the object and false diffraction lines may be more or less evident.

The Abbé condenser now in almost universal use is certainly an immense improvement over the simple mirror, and this with ordinary daylight constitutes the customary laboratory illumination. Good daylight, especially the white-cloud sort, leaves little to be desired for low and medium powers, but the variability of daylight on different days and at different hours of the day is a serious objection to its use with high powers, if we seek to obtain the best optical results. For the finest work one should discard daylight and the "Abbé," and use artificial light with an achromatic condenser. For ordinary work I know of nothing better or more convenient than an incandescent electric lamp with frosted bulb, giving a pure white yet soft light agreeable to the eye, and strongly imitating in its effects good white-cloud illumination. Gas and oil lamps of the Argand type of construction are extremely undesirable, as they give a large amount of diffuse light, accompanied at the same time by an uncomfortable degree of heat. The Welsbach and similar mantle lamps are still more objectionable. With lamps of this character it is not possible to obtain the finest resolutions of delicate structures, and all of them should be discarded as sources of illumination for the microscope. If kerosene oil is employed, the best lamp, especially for high-power work, is one with half-inch wick mounted in the focus of a bull's-eye lens, and with the narrow edge of the flame presented to the microscope. The lamp should be mounted so that it may be raised or lowered and tilted when necessary. Still better is the electric lamp with short straight filament, described by me some years ago.[1] With such lamps results can be obtained greatly superior to any possible with daylight. Acetylene gas, however, gives promise of proving an almost ideal source of illumination, and will doubtless come into extensive use as soon as a lamp is made with good mechanical features, and we can be reasonably sure that the lamp will not explode at some inopportune moment.

The character of the substage condenser is of the utmost importance. The chromatic or "Abbé" condenser is a cheap makeshift. It is certainly better than no condenser at all, and with daylight answers reasonably well. These condensers are made by every optician, and as they consist of either two or three simple crown-glass lenses there should be little difference in the products of the different factories. There is, however, a good deal of difference. The N. A. 1.20 and N. A. 1.40 of Zeiss are the best I have ever used. The N. A. 1.20 of Leitz is good, but I cannot say as much of the N. A. 1.40 of the same make.

A well-corrected achromatic condenser, however, is to be greatly preferred to an "Abbé." At least two of these should be at the command of the microscopist —that is, one of N. A. 1 for low and medium power work, and one of N. A. 1.30 or 1.40 for use with immersion lenses. The N. A. 1 achromatic will give a larger aplanatic cone of light than the N. A. 1.20 "Abbé," and is for this and other reasons to be preferred. The N. A. 1.30 or 1.40 achromatic will fill the most exacting demands of the best modern objectives. It should be understood, of course, that the apertures referred to exist only when the condenser is in oil-immersion contact with the lower surface on the slide. If used dry, the aperture is very much less and the results are not so good.

In bacteriological work the oil-immersion lens is almost universally employed, and one with a numerical aperture of 1.30 is perhaps the favorite. For purely clinical and diagnostic work an immersion lens is in most instances unnecessary, as the characteristic features of even the tubercle bacillus can be readily made out with a high-grade dry lens of one-eighth or one-tenth inch equivalent focus. No lens of the focus referred to with an N. A. lens less than .90 should be ranked as high grade, and should always be furnished in an adjustable mount. The greater the numerical aperture, the more sensitive is the lens to cover-glass thickness. Lenses of this description are not in very common use, and for two reasons. In the first place they are expensive, and secondly the great majority of microscopical workers do not know how to correct a lens for cover-glass thickness and will not take the trouble to learn. If they happen to possess an adjustable lens they use it with covers of varying thickness, at perhaps either the open or closed point; are dissatisfied with the result, and continue their work with the cheap but inferior German lenses.

Bausch & Lomb make an excellent dry $\frac{1}{6}''$ adjustable objective with an aperture of .92. The price seems very high in comparison with a Leitz of the same focus with an aperture of .85. Those who count the cost will buy the latter, while those who desire a distinctly superior performance and possess the skill to manipulate the lens, will doubtless prefer the former. With such a lens nine-tenths of routine bacteriological work can be done in a very satisfactory manner. It should be remembered, however, that with the high aperture of this lens the working-distance is necessarily small. Bacteriological mounts may be made on covers not exceeding .17 mm., but for histological sections thinner covers should be used. The objective referred to is corrected for a tube length of 216 mm., which is a desirable mean between the inconveniently long English (250 mm.) and the unnecessarily short German (Leitz, 170 mm.; Zeiss, 160 mm.) tubes.

For research work immersion lenses of the highest possible aperture should be employed. Zeiss, and Powell & Lealand offer objectives of N. A. 1.40, but in both of these instances the front lens is not very securely fastened in the mount. Bausch & Lomb and Spencer quote lenses with N. A. 1.42, and repeated measurements have shown me that the claimed aperture is fully realized, and I have never known of the displacement of the front lens in either of these makes. Powell & Lealand also construct an oil-immersion objective with an aperture of 1.50, and Zeiss a monobromide immersion with an aperture of 1.63, but this latter requires special flint-glass slides and cover glasses, which are expensive, costing two marks apiece for the slides and one mark for the covers. Some adjustable oil immersions will also work with monobromide, giving thereby increased aperture and improved performance.

Slides and covers to be used in connection with bacteriological technique should be the same that I have elsewhere[1] recommended for use in the examination of blood.

The medium usually employed for permanent mounts is Canada balsam, while for mere temporary examinations water and cedar (immersion) oil are frequently made use of.

[1] New York Medical Journal, July 16, 1892; Medical Record, May 4, 1895.

[1] Medical Record, October 17, 1896.

When deeply stained, bacteria may be regarded as opaque bodies and consequently without refractive index, and their form becomes manifest through contrast with the refractive medium that surrounds them, be the same air, water, oil, or what not. Now in a general way the greater this contrast the more distinctly the morphology of the micro-organism is displayed. Water has an index of 1.33, while cedar oil and the xylol and benzol solutions of balsam have an index of about 1.52. Consequently the visibility of bacteria in either of these latter is greater than in water. The oil of cinnamon (cassia), however, has an index of 1.59 and is consequently better than either of the media mentioned. "Naphthalin-ambar"[1] with an index of 1.625 gives us ten points' gain over balsam and is well suited for permanent mounts, while the pure monobromide of naphthalin (index 1.65) displays them still more finely. Mounts may also be made with a medium of still higher refractive index, namely, the iodide of methyl (n=1.72). There are two inconveniences connected with the use of this substance. In the first place it is extremely volatile and the cover must be instantly sealed to the slide, best done with Bell's cement; and, secondly, it rapidly extracts some of the basic stains from the bacteria and diffuses them through the medium.

It must not be supposed, however, that the media of high index are alone useful in the examination of bacteria, as many peculiarities and points of structure are more readily seen in media of comparatively low index, like water (n=1.33). For instance, take a living and sporulating culture of anthrax and prepare a cover film in the usual way, fix by heat, stain if you please with fuchsin, and mount in balsam or some similar medium; then make another mount in water or serum without fixation or stain, and compare the two. In the latter case we are enabled to see the bacteria in nearly or quite the condition that they exist in nature, but in the fixed and stained preparation we look only on thin shrivelled corpses. We think the microscopist would hardly seek to solve problems in human biology by the study of the tissues of an Egyptian mummy, and yet this is practically what they are doing when they confine these studies to the dried and stained bacterial filaments. My own studies in the realm of bacteriology have been too limited to permit me to dogmatize on this subject, but researches in a closely allied field among the moulds and other fungi, and the lower chlorophyllous algæ, desmids, and living diatoms have demonstrated the advantages to be derived from the study of these organisms under conditions of least possible morphological distortion. For instance, make a cover-glass preparation of the common Oidium lactis, dry, fix by heat, stain, and mount in a balsamic medium. Prepare another cover glass, and without drying, fixing, or staining mount immediately in glycerin jelly, or a ten-per-cent. solution of lysol. Examine both mounts with a good objective and note the remarkable difference in the appearance. The spores of lycopodium mounted in one medium show the surface reticulations distinctly, while the interior is translucent and apparently structureless. In another medium the reticulations may be invisible, while the interior contents (oil globules, etc.) constitute the prominent features of the picture. Take a little starch of almost any sort and mount in balsam, and compare it with some mounted in glycerin jelly or lysol solution. Do the same with the spores of some of the hymenomycetes. In the balsam mounts one will find very little clew to the intimate structure of these several bodies, while the other mounts will exhibit details invisible in the former. Why, then, should not these various methods find a wider application in bacteriology than now appears to be the case?

If then bacteriology, as suggested, has nearly reached the end of its tether with its customary methods, would it not be well for the students of this branch to avail themselves of methods found useful in other departments of natural science, and especially develop their microscopical technique to the utmost?

256 West Fifty-Seventh Street.

[1] The preparation of this was described by me in this Journal, May 4, 1895. It may be obtained ready for use from Eimer & Amend, of this city, or the purified gum may be had from Paul Rousseau & Cie, 17 Rue Soufflot, Paris. The gum thus obtained should be mixed with the requisite amount of monobromide of naphthalin, so that the resulting solution shall have the required index.

"IN THOSE DAYS THERE WERE DEVILS."[1]

By James Weir, Jr., M.D.,
owensboro, ky.

There are many a romance and thrilling tale hidden amid the dusty tomes of mediæval medicine. Especially is this true of those old works which treat of demoniacal possession and obsession, of trance, ecstasy, and the thousand and one manifestations of hysteria then characterized as visible presentments of the devil himself *in propria persona*. In the tale of Urban Grandier, in "Crimes Célèbres," Alexander Dumas has simply related an historical episode, confining himself closely to absolute fact. Laigue-Gentil gives the medical points of this strange story, and from these two authors the following paraphrase is derived.

Even in early youth Urban Grandier was distinguished by a mental acuteness and activity that far transcended the mediocre and groping psychical efforts of his companions. The boy's high intellectuality soon attracted the notice of his uncle, Claude Grandier, a scientist of considerable note in his day, who undertook his early education. After several years' study with his uncle, Urban was enrolled at the age of twelve in the Jesuits' College at Bordeaux. His teachers soon discovered marked oratorical talent in the youthful student, whereupon he was made to preach and declaim, his style being carefully watched, criticised, and corrected. As soon as he arrived at a suitable age the college authorities made him curate of St. Peter's Church in the town of Loudun; soon after this he was given the stipend of a prebendary in the college of Sainte-Croix. Contemporaneous writers describe him as being about thirty years old (1631), "tall and well proportioned, his air noble, and his countenance very handsome, although its expression was a little haughty." He was by far the most learned man in that section of the country, a finished orator, a courtly, refined, and agreeable gentleman. He was free from all the vices of that age, and the only fault that could be found in him by his enemies (and he soon made a host of very formidable and powerful ones) was an inordinate fondness for the society of women.

By his wit, his learning, his oratory, and his pleasing personality, he soon filled his church to overflowing with zealous and admiring communicants. But, just in proportion as St. Peter's became crowded, the congregations of the other churches and the perquisites of the priests in charge of them dwindled away. This, of course, aroused jealousy, and jealousy soon turned into downright, deadly hatred.

Urban was gentle, affable, agreeable, and affectionate when among his friends, but when among his enemies, especially when he had right on his side, he was

[1] The notes for this paraphrase of Dumas' story were made and the MS. was partly written in the winter of 1889; it was not completed, however, until the summer of 1896. Recently a translation of "Crimes Célèbres" has appeared, in which the story is told in full. This paper was sent to the Medical Record during the summer of 1896.

stern, haughty, and absolutely inflexible. Soon after he was given the prebend in the college of Sainte-Croix, he sued that chapter for the possession of a house and won his suit. He immediately pressed the judgment given him in this suit to a fulfilment, thereby incurring the bitter enmity of Mignon, a canon of Sainte Croix and director of the Ursuline convent. This priest was an arrant hypocrite, a detestable liar and falsifier, and was, as we shall soon see, the head and centre of the miserable band of plotting priests, nuns, officials, and riffraff that brought the brave and honorable Grandier to a horrible torture and to a still more horrible and painful death.

About the time of Urban's victory over the chapter of Sainte-Croix, Julia Trinquant, the beautiful daughter of the *procureur du roi*, fell sick with some lingering disease, and Martha Pelletier, one of her girl friends, left her own home and went to that of Julia in order to nurse her sick friend. During the course of Mlle. Trinquant's illness, a child was born to Mlle. Pelletier, but the people of the town, influenced by the atrocious calumniator, Mignon, ascribed maternity not to Martha, the real mother of the child, but to Julia, the fair and innocent daughter of the *procureur du roi*. The father of the child was declared to be Urban Grandier. Trinquant, by virtue of his office, had Martha arrested; she was brought before him and questioned, but she swore over and over again that the child was her own. She also declared that Urban Grandier was not the father of her child. The public was not convinced, however, but still believed that Mlle. Pelletier had assumed the guilt of Mlle. Trinquant for a monetary consideration, and that Urban was the father of the child.

M. Barot, a rich and influential citizen of Loudun, and Mignon's uncle, had had a furious quarrel with Grandier, in which he came out badly worsted. This made him an implacable foe, and one, too, on account of his wealth and position, to be feared. This man invited Trinquant, Mignon, and a priest named Meunier (from whom Urban had won a lawsuit) to meet him and to join him in a cabal against their mutual enemy; M. Menuau, *avocat du roi*, who was jealous of Grandier, also came to this meeting. Having failed to incriminate Urban and Julia Trinquant through Martha Pelletier, they set themselves to evolve another plot. But Father Grandier lived so honestly and uprightly that they could find no fault on which to base an accusation.

I have stated above that he was exceedingly fond of female society, though, as we have now every reason for believing, this penchant was entirely innocent. His enemies, however, started the report that he was conducting a *liaison* with a young lady of Loudun, and that in order to overcome her scruples he had married her, having performed the double office of priest and husband. Such was the silly tale inaugurated by this unscrupulous cabal, and which, as they thought, would bring their haughty enemy to terms. But Grandier, secure in his innocence, treated their accusations with contemptuous indifference. Upon a certain occasion, however, his anger got the better of his pride, and he bitterly reproached one Duthibaut, who had persistently circulated the story of his marriage with the young lady. This man, stung by and writhing beneath the smart of Urban's matchless invective, raised his cane and struck him. This scene occurred in the Church of Sainte-Croix while the priest was still dressed in the holy robes of his office, constituting, necessarily, a sacrilege of the gravest moment. Urban proceeded against Duthibaut, who, by the way, was rich and influential, with his usual promptness. He complained to the king, Louis XIII., who at once brought the matter before parliament.

While Urban was in Paris prosecuting Duthibaut for sacrilege, the cabal in Loudun was busily preparing a bomb in the shape of an accusation that was to be placed in the hands of his superior, the bishop of Poitiers. Two men were found who, for money, swore that he had debauched women and girls, and that he had converted St. Peter's Church into a *maison de joie*, and that he never read his breviary. The bishop, who was Grandier's enemy also (the latter having granted a dispensation of marriage, which was a prerogative of the former, hence his enmity), issued a writ of arrest and summons for Urban to appear before him. The summons, with a copy of the accusation was given to Duthibaut, who hurried to Paris and placed them before parliament. This body then decided that the priest must stand his trial before his religious superior before they could proceed further with the case against Duthibaut. Grandier's high courage did not desert him; he travelled back to Loudun with all speed. As soon, however, as he arrived there and before he could make any efforts toward preparing his defence, he was seized and thrown into one of the noisome dungeons of the bishop's prison. Here he remained closely confined for two months. He was then brought out for trial, and, notwithstanding the fact that the charges were mere assertions as in the case of the young lady to whom he was reported to be already married, no names were given to the women and girls whom he was accused of debauching), he was found guilty and sentenced to live on bread and water for three months, and debarred the practice of his priestly functions in the diocese of Poitiers for five years, and in Loudun forever. Grandier appealed from this sentence to the archbishop of Bordeaux; his accusers, thinking completely to annihilate him, then also appealed, carrying their appeal to parliament. It was decided, however, that, owing to the great expense incident to the transportation and maintenance of so many witnesses, the case should be tried by the civil court of Poitiers. In this just and impartial court the false witnesses were soon entrapped into making contradictory statements, whereupon they lost courage and confessed that their evidence against Urban was false. He was consequently, on May 25, 1631, declared not guilty by the court. He had yet to stand his trial before the archbishop of Bordeaux, who was then at Saint-Jouin-de-Marmes. He hurried thither and asked for an immediate trial, which was granted, and, in a few days he returned to Loudun in triumph—he had been acquitted on every count of the indictment.

We may take it for granted that a man of Grandier's temperament did not let matters rest here—nor did he. He at once entered proceedings against Mignon, Trinquant, Barot, Meunier, and Menuau for conspiracy. Meanwhile he had vigorously conducted the prosecution of Duthibaut (the man who had struck him with a cane in the Church of Sainte-Croix), and had gotten a judgment against him. Duthibaut was fined, reprimanded, and forced to pay a sum of money to the priest whom he had insulted. The cabal found themselves in hard case—from accusers they had become the accused, from prosecutors they had become the prosecuted. It behooved them to bestir themselves and crush their enemy, otherwise they were lost. They met again, Duthibaut having been added to their number, this time at a house belonging to Trinquant in the village of Pindardine; there they formed a new plot which, for utter wickedness, is without parallel in the history of mankind.

Some time before the events just related had transpired, the mother superior of the Ursuline convent had asked Grandier to become the spiritual director of her household. He, owing to his multitudinous engagements, had refused, thereby incurring the enmity of the nuns, who considered themselves scorned and despised. Better had it been for him had he

thrust his right hand into fire and burned it to a cinder than to have used it in penning a refusal to these women! For, by these weak women and girls was he to be dragged down and utterly destroyed.

Several days after the meeting of the conspirators at the house of Trinquant in the village of Pindardine, it was whispered in Loudun that two nuns in the Ursuline convent had been possessed by devils, and that these devils had been enabled to penetrate into the bodies of these holy women solely through the magic of Urban Grandier, a priest of Holy Mother Church. "Horrible! a priest and trafficking with devils. Send for the executioner! Send for the stake! Burn him! burn him!" Thus the superstitious and the ignorant. Fortunately for Urban, as well as for us, even in those days there were some people who did not believe in diabolical possession, and the seneschal of the town of Loudun was one of those people. Mignon, who had been appointed spiritual director of the convent after Grandier's refusal, sent for the curate of Saint-Jacques of Chinon, Father Barré, whom he desired to assist him in exorcising the devils. The seneschal of the district, Guillaume Cerisay de la Gueriniere, and the civil lieutenant, Louis Chauvat, requested that they might be present at the exorcism. When the two officers of the law arrived at the convent they were met by Mignon, who told them a wonderful tale of spectres, goblins, and devils. He informed them that the two possessed nuns were asleep, but that if they would come back at some future time they could see these wonderful performances and judge for themselves. Here I will quote from Dumas' "Celebrated Crimes" the following passage: "The two magistrates were taking their leave, when a nun hastily announced to them that the two possessed sisters were again tormented by their persecutors; they went up with Mignon and the curate of Venier into a room at the top of the house, furnished with seven small beds, only two of which were occupied, the one by the abbess and the other by the lay sister. . . . The two magistrates had no sooner entered the room than the abbess was seized with violent convulsions, making the strangest contortions, and uttering cries in exact imitation of those of a sucking pig." . . . Mignon told the seneschal and the civil lieutenant that the abbess herself did not understand Latin, but that the devil inhabiting was a good classical scholar and spoke good Latin; he would, therefore, interrogate her in that language. After exorcising her he began the interrogation.

Q. "*Propter quam causam ingressus es in corpus hujus virginis?*" (Why have you entered the body of this young maiden?)

A. "*Causa animositatis.*" (On account of enmity.)

Q. "*Per quod pactum?*" (By what compact?)

A. "*Per flores.*" (Flowers.)

Q. "*Quales?*" (What flowers?)

A. "*Rosas.*" (Roses.)

Q. "*Quis misit?*" (Who sent you?)

At this question the two magistrates observed the movement of hesitation in the abbess; twice she opened her mouth to answer, without uttering a sound; the third time she replied in a faint voice:

A. "*Urbanus.*" (Urban.)

Q. "*Dic cognomen?*" (What is his surname?)

Here, again, the possessed woman appeared in a state of hesitation, but, as if compelled by the power of the exorcist, she answered:

A. "*Grandier.*" (Grandier.)

Q. "*Dic qualitatem?*" (What is his profession?)

A. "*Sacerdos.*" (A priest.)

Q. "*Cujus ecclesiæ?*" (Of what church?)

A. "*Sancti Petri.*" (Of Saint Peter.)

Q. "*Quæ persona attulit flores?*" (What person has brought the flowers?)

A. "*Diabolica.*" (A person sent by the devil.)

In this interrogation the devil used correct Latin, for he had been well drilled; we will see, however, that in another interrogation he used Latin bad enough to have shamed a ten years' old seminarian. These exorcisms and interrogatories continued at intervals for several weeks, when it was announced by Barré, and confirmed by the abbess, that instead of one devil there were no less than seven in her body. These devils were named Asmodeus, Béhérit, Cerberus, Earas, Elimi, etc.

It is not to be supposed that Grandier was in ignorance of these performances; he was fully aware of his danger, and felt alarmed for the first time in all his life. He remembered Ganfredi, who had been executed only a few years before for dealing in sorcery and witchcraft. The seneschal was an upright, honorable man, and felt convinced all along that there was a conspiracy between nuns and priests for the overthrow of Urban. To him, then, this unfortunate man appealed; he demanded that the two nuns be separated, and that other exorcists and physicians be appointed. This the seneschal endeavored to do, but, much to his surprise, was even himself refused admittance to the convent. Grandier appealed to the archbishop of Bordeaux, who at once appointed a commission, composed of Sieur Barré, Father l'Escaye, and Father Gau, men in whom he had the utmost confidence. As soon as this commission took charge of the possessed women, the devils left them and did not return while they remained at the convent. The archbishop had previously sent his own physician to examine the nuns; the devils had remained quiet during his visit, and so he had nothing to report. But fate, in the shape of Cardinal Richelieu, far away in Paris, was reaching out eager hands toward the unfortunate Grandier. M. Laubordement was sent by Richelieu to Loudun with orders to demolish its castle. This man was introduced to Mignon, Trinquant, Barré, and others of the cabal, who became quite intimate with him. The commission of the archbishop of Bordeaux having been withdrawn about this time, the devils returned in full force. M. Laubordement was present at the exorcisms (for as soon as one devil was compelled to take his departure another devil took his place) and was apparently fully convinced of the genuine character of the manifestations. But this man had joined the conspirators, for he was a relative of the abbess and was deeply incensed at the archbishop's action in appointing a commission to judge as to the genuineness of the diabolical phenomena.

He returned to Paris and sought the all-powerful duke. No sooner had Richelieu heard the name of Urban Grandier and the charges against him, than he smiled in grim satisfaction. When the cardinal was prior of Coussay he had had a quarrel with Urban and had been badly worsted; here, then, was his enemy betrayed into his hands. A writ for Grandier's arrest was at once made out and signed by the king; this was given to Laubordement, who returned at once to Loudun, where his unfortunate victim was arrested and thrown into prison. The exorcisms and interrogations and diabolical manifestations continued; a host of devils descended one night, and the next morning eleven more young girls, inmates of the convent, were howling and whooping like demons. Asmodeus and Cerberus and Béhérit and Earas and the remainder of the seven devils, however, still continued faithful to their first love, the abbess, Jeanne de Belfield. Their Latin became incorrect, however, just as soon as the interrogations became frequent and lengthy. One more quotation to prove this:

"Mass being concluded, Barré approached her to offer her the communion and to exorcise her; and,

holding the holy sacrament in his hand, he said to her:

"'*Adora Deum tuum, creatorem tuum.*' (Adore your God, your Creator.)

The abbess remained silent for a brief space, as if she found much difficulty in expressing this declaration of love: at last she said:

"'*Adoro te.*' (I adore thee.)

"'*Quam adoras?*' (Whom do you adore?)

"'*Jesus Christus*' (Jesus Christ), replied the nun, who was not aware that the verb *adoro* governs the accusative case. . . . Daniel Douin, the assessor of the provostship, could not refrain from saying aloud: 'Here have we a devil who is not strong in the verbs active.'"

This miserable chicanery was kept up for months, the unfortunate Grandier fighting against it as well as he could from the depths of his dungeon. The seneschal, and his brother magistrates also, did what they could. Time and again did they expose the shallow artifices and subterfuges of Mignon and Father Lactance (another priest who had joined the conspirators) but all in vain—the case had been prejudged, the sentence had already been formulated. Even when Sister Claire, weeping in bitter sorrow at the part she had played in bringing a good man to his death, confessed to Father Lactance before a crowded church that she had given false evidence and that she had feigned diabolical possession, the priest only laughed in her face, and cried out that it was the devil speaking and not the good sister. She was hurried back to the convent, never again to emerge therefrom. "A still stranger scene took place upon the day after. While M. Laubordement was questioning a nun, the superior came down into the court with naked feet, and a rope round her neck, in the midst of a frightful storm," and stood waiting for him. When he appeared, "Sister Jeanne des Anges (Jeanne de Belfield, the abbess), kneeling down before him, declared that she had not power to play the horrible part which had been taught her any longer, and before God and man she declared Urban Grandier innocent." M. Laubordement, like Father Lactance, only laughed, and said that it was the devil speaking with her tongue. Sisters Jeanne and Claire were the nuns first corrupted by Mignon and his ally, who, together with the other conspirators, were the only visible and real devils in this infamous drama of crime. After a farcical trial, Grandier was condemned to the torture of the boot, and finally to be burned alive in the "public place of Sainte-Croix." On the 18th of August, 1634, he was taken to the torture chamber by Laubordement and Father Lactance. The executioner was dismissed, and then these two gentle followers of the merciful Christ proceeded with their own hands to apply the boot to their victim's legs and to crush them into a bloody, formless mass of bone, flesh, nerve, and ligament. After some further torture, during which they continually commanded Urban to confess (he replying that he was innocent and could not imperil the safety of his soul by the utterance of a lie in order to save his body from torture), they placed him on a cart and hauled him to the public place of Sainte-Croix. He, being unable to stand on account of his crushed limbs, was then fastened to the stake with a chain, which was passed around his middle. The fagots were fired, and, after calling aloud the name of Jesus three times, amid flame and smoke the spirit of this good priest left its earthly tenement and ascended to its Maker. Thus died Urban Grandier, the victim of one of the foulest plots that ever disgraced humanity. That it was a plot, the testimony of the abbess and Sister Claire most positively declares and affirms. Verily, there *were* devils in those days.

"WAVELAND."

THE HAND AS A PROPAGATOR OF MICROBIC DISEASE — A MEDICO-SOCIAL QUESTION.

BY NATHAN BREITER, M.D.,

NEW YORK,

VISITING PHYSICIAN TO THE HEBREW CHARITABLE DISPENSARY.

A FEW weeks ago I happened to meet a chance acquaintance, and, of course, the usual mode of greeting manifested by the shake of the hand was resorted to. I at once perceived something rough and oily about his hand, but, not wishing to discuss the matter, I said nothing relative thereto, and the circumstance very soon faded from my mind. A few days subsequent to that time the same person presented himself as a patient at my office, and, forgetting my former impression, he shook hands again, whereupon I noticed the same condition as before. An examination revealed the fact that he had had a hard chancre about six months prior to his call, and that at the time of his call he was suffering from an extensive syphilide which partly involved the hands. On the discovery of this fact it at once occurred to me that I had not washed my hands until several hours had elapsed after our former friendly greeting. I felt like shaking my hand off or shaking the custom out of existence. An effort in the latter direction seemed more feasible. I studied the question—the medico-social question—its cause, effects, and treatment.

Cause.—In view of the fact that most of the customs have had a somewhat similar origin, some more, others less rational, most began in the impulsiveness occasioned by circumstances, varying as to time and place, and founded in extensiveness on mimicry, a consideration of the one seemingly most grave at the present time will also reflect upon and give credence to others still extant.

In Leopold Wagner's "Manners, Customs, and Observances," we find the following: "The custom of shaking hands originated in the ancient and universal practice of grasping the weapon hand during a truce as a precaution against treachery. But it will be asked, how came it that the chance meeting of friends was signalized by a shaking of hands? To this it may be answered that, just as the warrior clutches the weapon hand to prevent mischief, so he freely extends his own weapon hand to a friend as a sign that he has no thought of standing on the defensive." He also states that the exertion caused by this very vigorous grasp caused the hand to shake. Now, here we certainly have a rational condition of things born of necessity and practised intelligibly. As time rolled on, necessity became a negative factor; the spirit which actuated the original grasp gone, the vigorous symbolification became less marked, and soon the natural shake which was consequent upon enervation was substituted by the artificial one consequent upon device. But still the practice continued, modified here and there by the whims of successive generations, mostly performed with indifference, occasionally with some degree of pleasure, in no case with any apparent detriment. And so, by continuous application a feeling was engendered, cultivated, and propagated to posterity, becoming a habit akin to a natural law. So we see that from a comparatively dark and illiterate period a custom having a rational origin, which *rationale* dwindled into nothingness during its spread and migration through successive centuries, was ushered into our glorious civilization, unnecessary in it essence, devoid of all intelligence, and positively injurious to public health. Unconsciousness is blameless in inactivity. The microscope and bacteriology have opened our eyes. Now torpidity where danger lurks becomes a crime.

Effects.—I have in a very limited way resorted to a

series of experiments relative to the bacteriological condition of the skin of the hand, but as my results are but shadows of already established facts, and as the purpose of this paper is only to expound the disastrous relationship between known contagious and infectious diseases and a social custom, I shall at once proceed with my delineation of effects.

Prof. W. H. Welch, in his article on "General Bacteriology of Surgical Infections," in Dennis' "System of Surgery," says: "As the skin is exposed to contamination from the air and all sorts of sources, it is evident that there is scarcely any limit to the number of species of bacteria which may possibly be found on the skin." Also "the kind and the number of bacteria found upon exposed parts of the skin vary considerably according to the habits and the occupation of the individual." That the surface of the human body is a very hotbed for the propagation of a great variety of micro-organisms, Fürbinger, Mittman, Bizzozero, Maggiora, Welch, and many others have elucidated most conclusively. It is certainly beyond the shadow of a doubt that in the presence of a predisposing factor, and sometimes even without, the microbic diseases are ushered into existence by their individual prototypes, this being essentially brought about by contact in some way of the two contingent forces. Modern surgery is founded on this principle. The carefulness with which we prepare our hands and surgical instruments before and after a surgical operation well exemplifies the importance of a familiarity with its dangers in every sense. We recognize the fact that many of our microbic diseases, especially those of the exanthematic type, eliminate their toxic element very largely through the medium of the skin, which undergoes extensive exfoliation disseminating the poison far and wide. These conditions are recognized. Isolation is resorted to and enforced most rigorously, thereby checking the spread of the disease, and then disinfectants, lavishly applied, cause the destruction of the offending armies. In the era of scientific prophylaxis consequent upon the introduction of the microscope, bacteriology, and antiseptics, we find a steady decline of epidemics either developing in the outer world or in our hospital wards. The aphorism, "An ounce of prevention is better than a pound of cure," is well exemplified in every department of medicine. Yet, accidental inoculations of tuberculosis, syphilis, small-pox or vaccinia, and the like, still exist, and are but demonstrations of either an unavoidable cause—which, by the way, divests it of its purely accidental origin—or a faulty observance of established data. Medical literature is by no means devoid of classical descriptions of microbic disease consequent upon ritual observances. However, as far as such customs (and they are in a sense customs) are concerned, aside from using the modern methods of surgical cleanliness, little if anything can be done. They are deep rooted. Martyrs to religion have come and gone. Martyrs still exist, and martyrs are still to come. Many changes as to wearing-apparel, so far as they affect our physical well being, have been brought about by medical agitation. It may be difficult in the beginning for the general public to conceive the cause, but it does gradually fall in line, whether through actual conception or mimicry makes no difference; it follows, and because it follows it should be properly led.

The corset, with it barbaric origin of metal breastplate, has gone through its evolutionary stages, doing its systematic harm and furnishing material for the contention of the gynæcologist; and because of this contention, in lieu of its eradication, it has met with improvements so as best to conform with woman's physical well-being. I say "woman's" because society is so constituted as to make woman's appearance a factor—and that largely—in her entire makeup. One more instance: During the early part of the tenth century the barbaric custom of wearing earrings was discarded, to be brought to light again in the time of Queen Elizabeth. Prince Henry III., of France, being of effeminate nature and anxious to ape the opposite sex, adorned his already girlish person with precious ornaments dangling from his ears. His courtiers and chevaliers followed; the public followed. It became a general custom almost throughout the civilized world. Our immortal Shakespeare was not insensible to the remnant (ear strings) of this new device. But, fortunately, perhaps through man's superior strength, this superstructure, founded upon imbecility, met with a speedy dissolution. It remains for the weaker sex to follow. Instances of infectious skin diseases or infectious constitutional diseases of the most grave nature are not unheard of consequences of this absurd custom. They may not be proportionally large in number, but they are real, and such reality, however small, with an avoidable cause, must, of necessity, be a reproach to our boasted civilization.

Now what can we say of the hand—the subject proper of this paper? The hand, in order to serve the manifold purposes of its existence, is forced to contend with circumstances which, by no means, add either to its cleanliness or to its freedom from courting disease. The importance of this essentially mournful condition has manifested itself in many instances in a very palpable and painful way. Diseases most dreadful in their nature and origin have forced themselves upon us, giving us the stigma of malefaction and our progeny the heritage of shame. The introspective and practical mind will readily conceive the revulsiveness of feeling engendered in our friends and acquaintances when deteriorating conditions, avoidable or unavoidable, associate themselves with our well being. Society attempts to shut the gates upon us, physicians clamor for social ostracism, and both with justice. Should any stone be left unturned in our endeavor to give ourselves and posterity the best possible phase of a future existence?

In my limited series of experiments I have found—as more accurate observers have before me—among patients with gonorrhœal urethritis that the filth collected from the surface of the hand showed the presence of the gonococcus of Neisser; among tuberculous cases the presence of tubercle bacilli; among diphtheria cases suspicious Klebs-Loeffler bacilli; and, doubtless, every disease of a microbic nature has an infinite number of its treacherous and devouring prototypes in this cordial member of greeting, ready to attack the new and unsuspecting. The presence of most of the known types of bacteria have been found upon the normal hand as well, and it requires no great stretch of the imagination reasonably to conclude that these micro-organisms can be present. The clinical demonstration supporting these conditions is as old as the knowledge of the causative relation between microbe and disease. Instances of auto-infection, both of the original and reinfection kind, are within the experience of every physician. The large number of cases of infectious and gonorrhœal conjunctivitis with or without gonorrhœal urethritis, tuberculosis—local or general—infectious skin diseases, primary syphilis, erysipelas, sepses of any kind, or any of the transmissible diseases includes with its causative relations, as a factor, the hand. Medical literature is not lacking in evidence of this fact. Frequent ablutions may moderate the extent of but do not eradicate the evil. In this connection I may here state that an incident which occurred to me a few weeks ago struck the mark most forcibly. Two male friends consulted me about their respective troubles. One had a typical gonorrhœal urethritis, the other a typical gonorrhœal conjunctivitis without apparent cause. The gonococcus

of Neisser was found in both cases. No interchange of towels had taken place. The only contact between them was the customary handshake on meeting and parting. In the absence of a more probable cause for the conjunctivitis the hand is certainly a plausible one. I recall another instance which occurred with me about six years ago, while practising medicine in the city of Chicago. A friend of mine, with whom I had been in the habit of shaking hands, consulted me about a "pimple," as he called it, on his right index finger. I suspected nothing out of the ordinary and paid little attention to it. The pimple persisted in its sluggish existence and soon assumed a suspicious aspect. I then questioned him closely, and found that he had been indulging in digital exploration of a female's genital organs. Secondary symptoms later on confirmed the suspicion; yet this man certainly exercised no compunction in extending in friendly greeting his filthy member. Many victims of scarlet fever, both in the early and desquamative stages, especially the latter, are walking the streets of every large city ready to engraft upon the moist hand of any chance acquaintance the prolific virus of the disease. The same may be said of persons with pulmonary tuberculosis, whose hands and handkerchiefs, through incessant wiping of the mouth, are foul and saturated with the bacteria-laden expectoration of the disease. A skin specialist of large experience tells me that he has seen among laymen many cases of primary syphilis of the hand, without any recognized source of infection. Also that he has had cases coming to him with the secondary roseola eruption which he traced to an untreated small and sluggish ulcer on the hand, these patients having been unaware of the nature of their disease. Tuberculosis of the hand, the lesion small or large in area, often painless, and unrecognized as such for a long while, and perhaps untreated, is by no means an infrequent occurrence. Scabies, as we know, has a marked predilection for the hand. The germs of favus and ringworm find their nidus there. Need I mention others? Now, whether these conditions are the result of hand-to-hand contact or not does not matter. The conditions themselves are dangerous elements, and it is the consideration of such factors in the causation of disease that we are studying.

Most of us are familiar, either through reading or experience, with the classical finger chancre of midwives, dentists, physicians, surgeons, and nurses. We recognize that contact, and more likely in the presence of an abrasion, with the contaminated source has caused it there; we also recognize that laymen, in consequence of digital fondling of the female genital organs, are not exempt. Now as syphilis is most infectious during its primary and secondary stages, and as in the latter stage its diffusion may extend over the entire surface of the body—(and even in the former, though the lesion is hidden, the hand may still have its share of the virus through repeated fondling of the affected part)—are we not forced to recognize that surface contact, hand to hand, as well as by any other parts, is dangerous? Of course the mucous membrane serves as a better pabulum for the invasion and development of micro-organisms, but the skin is not absolutely negative in that respect, and, if it were, it would make little difference, as the two, skin and mucous membrane, are very often in close apposition with each other. We know that the hand has carried bacteria to the mouth, disseminating contagion in that way. Typhoid fever, Asiatic cholera, diphtheria, and other diseases are known to have been produced that way. Why search through medical libraries for similar and perhaps more conclusive evidence? The subject has passed the stage of novelty. So while we professional people are, by reason of our profession, forced to invite and then to battle (for we have antiseptics) with these enemies, there is no reason why we should unnecessarily and under the cloak of custom invite them and then leave them to do their harm. No antiseptics are ever thought of after the latter procedure, and it is this latter procedure which is practised by everybody throughout the civilized world.

Cleanliness is godliness. Filth is Satan's armor of defence. Medical cogitation and agitation have caused rapid strides in the advancement of the science of sanitation. We grope no more in the dark. The ideal, illuminated with the light of this century's inventions and discoveries, stands unveiled. Should we hesitate because there may be some obstacle in our path, or because the subject smacks more of the social than of the medical aspect, or should we systematically go to work and cause its extermination?

Treatment.—How shall we go about it and with what prospect of success? Customs and ceremonies of all denominations are prevalent among all nations both in civilized and savage life. The atrociousness of their character in the latter sphere passes the bound of human imagination in the former. Murder and rapine in its widest and most brutal sense have for their cloak and protection established customs; and an omission of such, where it is expected, is a sacrilege to established law and order. In their savage ignorance they are unconscious of the enormity of their crimes. But we of the civilized world, and with a nineteenth-century enlightenment, can understand and look upon them with horror. We have by far surpassed their developmental stage and look forward to a grander one than our own, where harmful relics, now extant, will be entirely relegated to the past. Now can we help the natural evolution of this phase of sociology along? History repeats itself. Let us look to history for information.

In the reign of Alexander the Great, when his Majesty was afflicted with wryneck, all his courtiers and generals considered it the correct thing to carry their heads on one side. Soon the public followed. This, of course, spread like wildfire. However, the king recovered from his malady; his courtiers and generals recovered; the public recovered. The people at that time wanted a guide whom they could ape or follow. Not more than twenty years ago the Princess of Wales sustained an injury to her knee which caused her to limp. "My ladies" at court limped; the public limped—all England limped. In the course of time the princess recovered. "My ladies" at court recovered; all England recovered. So we see that the people now also want a guide, some one to ape or to follow. The imitative faculty which is part of our mental makeup existed during the time of Alexander the Great; it exists to-day. Many customs and costumes are repeatedly introduced and as many repeatedly forgotten; none in itself essential to our well-being, or not to be replaced. Those of medical consequence were discussed by physicians, and the mere discussion of them by physicians either gave them the stamp of approval or modified them so as to minimize their danger, or caused their total abandonment. New customs, social or otherwise, are, as a rule, in conformity with the advancement of the age which gives them birth, and either meet with corresponding changes as time goes on, or, in the event of their quiescence and relative regression, assume anomalous or destructive phases which justify an interference. The first step in the progress of interference, when a medico-social question is at issue, is its discussion by physicians, and this unconfined to Æsculapian walls. The next step is its discussion by the public. Our object is to start the wheel a-turning—reason and mimicry will do the rest. A simplification of matters in a delicate and unalarming way before the public eye, through the medium of the daily newspapers, would be a de-

sideratum here. The intelligence of the present age would at once grasp at the judiciousness of the project, and if it did not the intellect of social leaders would—the public later; and very soon the custom would become extinct, and so much would have been done toward disarming society of a universal custom which to-day has no rational significance, and which can and necessarily must perpetuate among us and among future generations irremediable disease.

Some may look upon this subject with derision; nevertheless the truth is this—no matter how small the percentage of evil consequencees accruing from this universal hand-shaking, the total number, in view of its extensiveness, must necessarily be great. The subject is deserving of serious consideration. Conscientious physicians and surgeons will accord it.

172 East Seventy-Second Street.

Progress of Medical Science.

A Method of Producing Immunity to Infection with Tuberculosis.—Paterson (*Lancet*, October 30, 1897, p. 1,106) found that while rabbits and guinea-pigs inoculated with the bacillus of mammalian tuberculosis by way of the peritoneal cavity, the anterior chamber of the eye, the veins, and the subcutaneous tissues, died from tuberculosis after the lapse of varying periods, invariably negative results were obtained from injections of the same organism into birds. On the other hand, birds treated with virulent avian tubercle bacilli showed after the lapse of a given time numerous tubercles in the viscera. Although it would thus appear that birds are not susceptible to infection with the bacilli of mammalian tuberculosis, human beings have proved susceptible to infection with the bacilli of the tuberculosis of fowl, and individuals so infected are in turn capable of transmitting the infection to birds. It was further found that pus from an abscess in a man proved capable of inducing tubercles in rabbits. While tubercle bacilli could not be detected in the pus, cultures from the tubercles showed the characteristic appearances of avian tubercle bacilli. Rabbits first inoculated with sterilized watery suspensions of avian tubercle bacilli and subsequently treated with suspensions of virulent mammalian tubercle bacilli, remained well, only local lesions developing. Fowl treated with increasing doses of sterilized watery suspensions of avian tubercle bacilli withstood the larger doses without apparent detriment to health. The blood serum of such animals displayed a bactericidal effect on mammalian tubercle bacilli, but not upon avian tubercle bacilli. Injection of the serum into rabbits and guinea-pigs was followed by the development of local swelling and loss of weight. Rabbits inoculated with mammalian tubercle bacilli and treated with the serum displayed a marked local reaction and only local lesions. In animals first treated with the serum and afterward inoculated with virulent mammalian tubercle bacilli, only local lesions developed. Injection of the serum into a man gave rise to marked local and constitutional reaction. The opinion is expressed that if such susceptible animals as guinea-pigs can be rendered immune, as much may be expected of man also. It is uncertain how long the immunity thus conferred lasts, but under the least favorable conditions it can be renewed from time to time.

The Employment of Saccharomyces in the Treatment of Tuberculosis and Carcinoma.—Manders (*British Medical Journal*, No. 1,917, p. 802) details the method devised by Backer in the treatment of tuberculosis and carcinoma. It had been observed that the saccharomyces possess under certain conditions phagocytic powers similar to those of leucocytes. A pure culture of saccharomyces cerevisiæ was injected with aseptic precautions into a healthy guinea-pig, and produced little or no effect. Next, a healthy animal was injected with the pure culture mixed with a proportion of fermentable matter previously sterilized, and it was found that the yeast cells underwent multiplication and carried out the function of fermentation within the system of the animal. Then a guinea-pig was inoculated in the ear with diphtheria, and an injection of the mixture of pure culture with sterilized fermentable matter was administered subsequently, with recovery of the animal. Similar experiments were made with guinea-pigs rendered artificially tuberculous, and the results were so encouraging that observations upon human beings were next resorted to. It having been shown that the injections were not attended by harmful results, a number of cases of tuberculosis were subjected to the treatment, with most satisfactory results. Similarly good results are stated to have occurred in cases of carcinoma.

The Treatment of Diphtheria with Antitoxic Serum.—Clubbe (*British Medical Journal*, October 23, 1897, p. 1,177) has reported two parallel series of cases of diphtheria, each to the number of 300, one of which was treated with and the other without antitoxic serum, at the diphtheria branch of the Sydney Children's Hospital. In all the diagnosis was confirmed by the presence of Klebs-Loeffler bacilli. The report is especially interesting because the cases were all treated in the same hospital and by the same physician, and because the general management was in all essentially the same. Of the 300 cases treated without serum, 169 were in females and 131 in males. Of this number 142 recovered and 158 died—a mortality of 52.7 per cent.; 101 were cases of simple diphtheria, with recovery in 78 and death in 23—a mortality of 22.7 per cent.; 199 required tracheotomy, with recovery in 64 and death in 135—a mortality of 67.8 per cent. Of the cases treated with serum, 158 were in females and 142 in males. Of this number recovery ensued in 240 and death in 60—a mortality of 20 per cent.; 171 were cases of simple diphtheria, with recovery in 160 and death in 11—a mortality of 6.4 per cent. Tracheotomy was required in 129 cases, with recovery in 80 and death in 49—a mortality of 37.9 per cent. After the preceding report had been made, an additional 100 cases were treated with serum, with recovery in 81 and death in 19.

Pulmonary Tuberculosis and Childbearing.—In a paper read before the Obstetrical Society of Boston, Townsend (*Boston Medical and Surgical Journal*, October 14, 1897, p. 391) reaches the following conclusions: 1. Conception may take place even in advanced pulmonary tuberculosis. 2. The disease is generally held in abeyance during pregnancy, although it may advance or even originate at this time. 3. Labor is short and easy in proportion to the severity of the disease. 4. During the puerperium a rapid advance, leading in some cases to speedy death, occurs; or the disease may originate at this time. In either case the temperature chart suggests puerperal sepsis. 5. Premature labor is more common the more advanced the disease, although pregnancy often goes on to full term even in advanced cases. 6. The average weight of full-term children, as well as their general condition at birth, is not markedly below that of children of healthy mothers, except in the rare instances of congenital tuberculosis.

Hemorrhoids.—Tincture of horse chestnut in doses of from twenty to thirty drops, twice daily.—Artault.

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THE PHYSICAL DEGENERACY OF THE NEGRO.

THE race problem in the South seems destined to be settled according to natural laws unless something is done, and done soon, to save the negro from the results of his own vices and neglect of elementary hygienic laws. The testimony of those who have studied this subject is all but unanimous, and it has received additional confirmation through the investigations of Dr. R. H. Johnson, of Brunswick, Ga., himself a colored physician. The figures which he has gathered from a study of the vital statistics of nearly three hundred towns in the Southern States show that the death rate of negroes is double that of whites in the same communities, and not only this, but the birth rate is also smaller among the colored than among the white population. Furthermore, the day of the stalwart negro is passing, if not already gone, and the members of the younger generation of the race make a poor showing, as regards their size and physical constitution, when compared with their grandfathers and grandmothers.

Dr. Johnson attributes this degeneracy of his race —rightly, we believe—to the carelessness, want of forethought, and dissipation so unfortunately characteristic of a large portion of the colored population in the South since the civil war. "In antebellum days," says Dr. Johnson, "the negro seemed to be an immune to consumption, and many great medical writers and teachers boast of never having seen such among the negroes. Enforced temperate living and sanitary precautions made the black man a physical giant, but the giants are disappearing, and in their places is coming on a race of smaller stature and decreased vitality."

In the days of slavery the colored man was property and was looked after with all the care which men are accustomed to give to the safe-keeping of their possessions. Their health was carefully attended to by the plantation physician, they were decently housed, well fed, forced to live temperately, and to go to bed in proper season. But the fortunes of war, while giving them liberty, gave them also license to indulge in all the enervating and physically degrading vices of the higher race at a time when they had not learned the necessity of self-restraint and of regard for the laws of health.

That this is the true reason of the colored man's physical deterioration is further shown by what Surgeon-General Sternberg has to say, in his recently issued annual report concerning the health of the colored soldiers. "Great improvement," he says, "has taken place in the past few years in the sanitary condition of the colored troops. The white troops have participated in the improvement, although their rates have not fallen so rapidly as those of the colored men. During the past year the total hospital admission rate for all causes among the colored troops was 868.88 per 1,000 of strength, as compared with 1,132.49 among the whites, and as compared with 915.88 among themselves in the previous year, and with 1,368.64, their own annual average for the previous decade, the annual average of the white troops having been 1,284.95. The non-efficiency from all causes among the colored troops during the year was 25.75 per 1,000 of strength, as compared with 34.72 among the white troops. The colored soldier lost 9.42 days from disability during the year; the white soldier, 12.71; and the average time of treatment of each case was, among the colored troops, 10.84 days; among the white, 11.22 days. The causes of disability from which the colored men suffered less than the white troops were malarial fevers, venereal diseases, alcoholism, diarrhœa, and injuries; those from which they suffered more were neuralgia, rheumatism and myalgia, tonsillitis, colic and constipation, conjunctivitis, and pneumonia."

These figures contain much to encourage those who have the future of our colored brothers at heart and who have looked with sorrow upon their downward progress since the day of their emancipation. The figures show, indeed, that the race is capable of regeneration, since even now its members living under the sanitary and moral restraint of army discipline are found to be superior to their white comrades living under the same conditions. The proof exists that the colored race may yet be brought back to its former high sanitary condition, but the problem remains how to lift it up from the abyss of misery and how to avert its threatened extinction. Here is a task for the colored members of our profession, which they can accomplish far better than their white confrères and which calls for their best thought and self-sacrificing devotion.

MALE NURSING IN ENGLAND.

THE Hamilton Association for providing trained male nurses was started twelve years ago, as some of our readers may recollect (see MEDICAL RECORD, June 6, 1885), and the twelfth annual report is now before us. From this we learn that even after so long a trial the association is not yet self-supporting, although many hundreds of pounds were given by the benevolent foundress—the late Miss Jane Hamilton, who at her decease left a further sum of money to continue the work. From the first the association secured the support of the leaders of the English profession, some of whom have served on the committee of management. Nevertheless, the large general hospitals of London have hitherto given only a very one-sided support to

the movement, although the association supplied them for years with men nurses for emergencies, and that at a rate which entailed a loss to the funds in every case. Miss Hamilton was desirous of establishing a training-school at one of these hospitals and would have endowed it, but none of them seems to have been willing to give up a men's ward to nursing by men. This seems a very strange circumstance to us in this city, where the training-schools for male nurses have from their inception been located in the large general hospitals, and we can only suggest as an explanation that the nursing of the English hospitals is in the hands of some narrow-minded women, who oppose any encroachment on what they consider their natural domain. If so, it seems a pity that some hospital committee has not the courage to override the foolish jealousy of its matron or nursing superintendent.

That there is a need for male nursing in London, and that some women recognize the need, were well shown early in the year by an article in the *Nineteenth Century*, from the pen of Lady Priestley, who emphasized the widespread feeling that women are not suitable for nursing all cases, and urged the more general employment of male nurses. Lady Priestley seems, however, to have been strangely oblivious to the fact that the Hamilton Association, established and endowed for this end by one of her own sex, had for years been carrying out her ideas at her very door. Perhaps her position as the wife of a distinguished obstetrician may be the reason why her attention had not been drawn to the existence of the Hamilton Association, which is, we believe, the pioneer of male-nursing associations.

TREATMENT OF OZÆNA.

In a paper lately read at the Congress of the French Society of Otology, Laryngology, and Rhinology, by Dr. E. I. Moure, of Bordeaux, the treatment of ozæna was very fully discussed and some new lights are thrown upon a subject concerning which there is much yet to be learned. The bacteriological aspect of the disease is touched upon, and the various forms of treatment in vogue are cited. The author strongly deprecates operation as a remedy, and after briefly referring to treatment of ozæna by the introduction of bougies, snuffing, inhaling hot vapor, the use of ointment, massage, cauterization, he dwells at some length on interstitial electrolysis. Monopolar electricity was introduced as a remedy by Dr. Garrigon-Desarenès in 1884, who used it superficially. In 1895 Dr. Cheval, of Brussels, tried bipolar interstitial electrolysis, and claims great success from this mode of treatment. Dr. Bayer, of Brussels, and M. Rethi, of Vienna, agree with these conclusions.

Dr. Moure, however, dissents from these views. He gave interstitial electrolysis a fair trial, and while allowing that the immediate effects appeared very satisfactory, he found that this amelioration was but temporary. The treatment recommended by Dr. Moure is as follows: He first inquires of the patient whether he wishes to undergo a partial or regular course of treatment. If partial, the nasal cavities are first cleared by means of cotton wool soaked in carbolic glycerin; after this the nasal and post-nasal cavities are irrigated with some antiseptic wash. If, on the contrary, the patient wishes to undergo a regular course of treatment, in the first instance the nasal cavities are douched with a solution of boric acid; when this has been continued for a few weeks, the nasal mucous membrane is massaged with antiseptic cotton wool; nitrate of silver is then made use of; and, finally, an alkaline injection clears away any excess of nitrate of silver that may be contained in the interior of the nose. By these means it is contended that a definite cure may be obtained.

There are, however, many medical men who will prefer to try a more heroic form of treatment for the cure of ozæna than the foregoing. Dr. Mackenzie, of Edinburgh, says that ozæna is a disease of the mucous membrane, and that the atrophy or shrinkage which is a characteristic of it is due to pressure of the hardened pus (crusts) upon that membrane—a condition which is somewhat analogous to that met with in the skin in certain forms of eczema. He has endeavored by curetting to supplant the diseased membrane by new tissue, and claims to have met with great success from this treatment. After curetting, he uses oily applications, such as a mixture of ichthyol and olive oil, which he finds soothing and beneficial.

THE SLAUGHTER HOUSE IN RELATION TO DISEASE.

The growing danger of slaughter houses as a factor in spreading disease is at last being appreciated in its true bearings, and steps are being everywhere taken thoroughly to investigate the matter and to correct as far as possible the evils of the present system. There is much to be done, but as soon as the general public understands the nature of the perils to which it is subjected, owing to the unsanitary conditions under which slaughter houses are generally maintained, just so soon will they insist that remedial measures be taken. The most effective way to impress people with a sense of their danger is by pointing out to them that these unsanitary conditions are one of its sources, and to prove to them that unless radical remedies be put into force infectious diseases may increase to an almost unlimited extent.

Ch. Wardell Stiles, Ph.D., in a paper published in 1896, presents in a clear manner the subject of country slaughter houses as a factor in spreading disease. In the course of his remarks he says: "The first matter to notice in connection with this subject is that every slaughter house is, from the very nature of things, a centre of disease, and naturally the poorer the condition of the premises the more dangerous they are. These facts will appear clear if one considers what takes place at one of these houses. Even if only a few animals are slaughtered each week, the total number may amount to several hundreds during the year. Some of the animals are surely diseased. At least one of the hogs has trichinosis, and when the

offal of this trichinous hog is fed to hogs which are raised upon the grounds the latter cannot escape infection with trichinæ. But that is not all. The slaughter houses are often overrun with rats; the rats feed on the offal, and when feeding on the offal of a trichinous hog they likewise cannot escape infection with trichinæ. Rats act as direct transmitters of trichinosis to hogs." Dr. Stiles gives many more instructive details, but which we have not the space to quote. He summarizes thus: "Every slaughter-house is a centre of disease for the surrounding country, spreading trichinosis, echinococcus disease, gid, wireworm, and other troubles caused by animal parasites, and tuberculosis, hog cholera, swine plague, and other bacterial diseases. The important factors concerned in spreading these diseases are offal feeding, drainage, rats, and dogs." Two of the remedies suggested are as follows: "First, by a reduction in the number of premises on which slaughtering is allowed, on which account it is urged as all-important that there be a segregation of the slaughter houses, so that all the butchers of any given town will be compelled to do all their killing in a common, inclosed, and restricted area. In abandoning slaughter houses care should be taken to destroy the rats, in order to prevent the spread of infection. Second, by regulating the factors concerned in spreading the diseases: (*a*) offal feeding should be abolished; (*b*) drainage should be improved; (*c*) rats should be destroyed; and (*a*) dogs should be excluded from the slaughter houses."

This question of slaughter houses is attracting much attention in Europe, though chiefly in connection with tuberculosis, and some of the countries there have adopted stringent regulations controlling their management. The system in vogue in Denmark is said to be the most perfect. In Copenhagen every animal is after slaughter branded upon various parts of the carcass, and the brand is exposed in the butchers' shops to the public, which in consequence recognizes that the meat has been passed by the official inspectors as fit for human food. In England the question has only lately been seriously taken up. A royal commission has been appointed, members of which are at the present time visiting some of the principal towns in the kingdom for the purpose of collecting evidence. In France carcasses are seized when there are any visible signs of tuberculosis.

From abattoir statistics it is shown that in Berlin 12 per cent. of the cattle slaughtered are tuberculous; in Dresden, 14.4 per cent.; in Upper Silesia, 9.5 per cent.; in Durham, 18.7 per cent.; and in Mid-Lothian (a district in Scotland in which Edinburgh is located), 20 per cent. Of those slaughtered in London, 25 per cent. are diseased; and in New York, about 20 per cent. There can be no room for doubt that the sooner the task of putting all slaughter houses into a proper sanitary state is effectively carried out, the better will it be for the public health.

The New Hospital for Scarlet Fever and Diphtheria is to be opened for patients toward the end of the month of December.

THE ACADEMY OF MEDICINE AND THE NEWSPAPERS.

THE time to arrest an evil is at its inception, and for that reason we take occasion just now to utter a word of reproof to the officers of the New York Academy of Medicine. Through the negligence or the connivance of certain persons connected with this society, reports of the meetings of the general body and of individual sections have appeared in the daily papers with startling frequency and regularity this autumn. Reporters are not detailed to report medical meetings unless word is sent to the editors that the proceedings are to be of interest to the general public. The report of the annual meeting of the academy, with a full abstract of the anniversary address, is proper enough, for the occasion is intentionally made one of interest to the laity; but for reports of section meetings there can be no excuse whatever, except that of a desire to advertise boldly and baldly. The latest offence has been committed by the section on neurology and psychiatry.

News of the Week.

Care of Consumptives by the Board of Health.—The board of estimate and apportionment of New York has been asked by the health board to appropriate $60,000 for the care of tuberculous patients in Seton Hospital at Kingsbridge. It is said that the board can make arrangements with the authorities of this hospital for the care of consumptives at a *per-capita* rate of $1 a day. The argument is made that most of the hospitals are forced by want of room to refuse many applicants suffering from tuberculosis, and those that do accept patients of this class discharge them as soon as they are sufficiently improved to be able to get about, in order to make room for more desperate cases. For this reason, it is alleged, few hospital patients are ever cured, as they might be if cared for a sufficiently long period. But why should the health board take this matter in hand? It was not created to treat disease, but to prevent it. Why not leave the management of such hospitals to the Department of Charities, where it rightly belongs?

Typhoid in Paterson.—Typhoid fever has again broken out in Paterson, N. J., twenty-seven cases having recently been reported to the board of health, and fears are entertained that there may be an epidemic. Eleven of the cases are among the inmates of the Paterson Orphan Asylum.

An Impetuous Student.—A student from New York in a Chicago medical college was recently arrested for resorting to western methods to enforce his ideas of the proper treatment of a young woman by a fellow-student. He was walking with the lady when he met one of his classmates who had spoken of her without proper respect, and whipping out a revolver made the offender drop in his tracks in the mud of Chicago and apologize then and there.

New York Skin and Cancer Hospital.—Dr. Paul F. Mundé has been elected consulting gynæcologist to the New York Skin and Cancer Hospital, to succeed the late Dr. William T. Lusk.

Police Surgeon Examination.—At the recent examination for the position of police surgeon somewhat over eighty applicants presented themselves. Only four succeeded in reaching a percentage of 70 or over on the answers to the questions in medicine, surgery, physiology, and materia medica. The first man on the eligible list reached 94 per cent.; the second, 90 per cent.; the third, 80 per cent.; and the fourth, 77.6 per cent. The examination for merit also included an exercise in spelling and one in letter writing. The award for fitness, which counts 50 per cent. of the grand total, is based upon the general experience and standing of the candidates. The medical questions were fair ones, and the whole examination was conducted in a thoroughly business-like and straightforward manner.

Reception to a Physician.—A reception and banquet were tendered on November 24th to Dr. A. H. Halberstadt, of Pottsville, Pa., the oldest practising physician of Schuylkill County, by some fifty of his professional friends from all parts of the surrounding country. On behalf of his friends, Dr. W. H. Robinson, of Pottsville, presented a gold-headed ebony cane. Dr. R. S. Christman, of Pottsville, delivered a welcoming address. Dr. F. W. Boyer, of Pottsville, spoke upon "The Social Side of the Doctor's Life." The additional toasts were: Dr. David Taggert, of Frackville, "The Ladies;" Dr. J. E. Merkle, of Hecksherville, "The Doctor in Politics;" Dr. C. B. Miller, of Pottsville, "Medical Treatment;" Dr. G. H. Halberstadt, "Surgery."

Philadelphia County Medical Society.—A stated meeting of the Philadelphia County Medical Society was held on November 24th, the president, Dr. James Tyson, in the chair. Dr. T. B. Schneideman reported a case of sympathetic ophthalmia following traumatism, in which recovery followed enucleation of the exciting eye. Dr. Orville Horwitz read a paper in which he pointed out that the administration of methylene blue might serve a useful diagnostic purpose in distinguishing between fistulæ as connected with the genito-urinary tract and especially with the kidney or with other viscera. He reported a case in which the dressings covering a fistulous opening were stained blue following the administration of methylene blue, and he exhibited the deeply stained urine. He suggested further the possibility of facilitating skiagraphy of the kidney by the use of the drug. Dr. Judson Daland presented a communication detailing observations tending to show the inutility of tincture of digitalis administered in the form of tablets.

The Pittsburg Academy of Medicine.—The tenth annual meeting of this society was held on Thursday evening, December 2d, at the Hotel Henry. The annual address was delivered by Dr. George M. Sternberg, Surgeon-General, U. S. A., the subject being "The Relations of Man and Microbe."

Philadelphia Neurological Society.—A stated meeting of the Philadelphia Neurological Society was held on November 22d, the president, Dr. C. W. Burr, in the chair. Dr. W. G. Spiller reported two cases of posterior spinal sclerosis, in which the other symptoms remained in abeyance on the development of blindness and atrophy of the optic nerve, and he exhibited one of the patients. Neither of the cases presented noteworthy derangement of motility or co-ordination, and for this reason Dr. Spiller objected to the use of the term locomotor ataxia. Dr. Spiller also exhibited a microscopic section showing a neuromuscular bundle containing nerve fibres from a case of muscular dystrophy; and one of the optic nerve showing hemiatrophy from a case of acromegaly. Dr. F. A. Packard exhibited two brothers presenting progressive muscular dystrophy, with mental deficiency and possible enlargement of the thyroid gland. Dr. William Osler read a paper on paralysis of the hypoglossal nerve, reporting a case presenting hemiatrophy of the tongue, with paralysis of one side of the larynx and pharynx in conjunction with a tumor in the parotid region of the same side. Dr. C. W. Burr exhibited a brain presenting a large excavation in the motor area of either hemisphere near the longitudinal fissure, from a case in which during life there had been profound mental impairment and frequent epileptic seizures. Dr. G. M. Purves exhibited, for Dr. C. K. Mills, brains from two cases of intraventricular hemorrhage, and Dr. Mills made some remarks on the methods of dividing the brain at post-mortem examinations. Dr. J. P. Arnold reported a case of brain tumor situated on the median aspect of the left hemisphere, presenting during life right hemiplegia of progressive type, with optic atrophy, but without convulsions.

The Late Dr. Charles A. Avery.—At a stated meeting of the Medical Society of the County of New York, held at the New York Academy of Medicine, 17 West Forty-third Street, on Monday, November 22, 1897, the following resolutions were adopted:

"*Whereas*, Dr. Charles H. Avery, our esteemed and honored secretary, has been removed by death, which occurred November 2, 1897;

"*Resolved*, That we hereby express our deep sense of the loss which our society has sustained in his decease;

"*Resolved*, That we desire to bear testimony to the sterling integrity of his character, to his genial social qualities, and to his devotion to the interests of this society which he has so long faithfully and efficiently served in the capacity of secretary;

"*Resolved*, That a copy of these resolutions be transmitted to the medical journals of this city, and that an engrossed copy be sent to the family of our deceased associate.

"JOHN S. WARREN, M.D.,
"WILLIAM E. BULLARD, M.D.,
"*Committee.*"

Obituary Notes.—DR. GEORGE H. HORN, for many years secretary of the American Philosophical Society, died on November 25th, at the age of fifty-eight years. He was one of the leading entomologists of the United

States and an active member of the Academy of Natural Sciences. He was graduated from the Central High School of Philadelphia and from the medical department of the University of Pennsylvania.—Dr. J. E. Whiteside, of Philadelphia, died at Atlantic City on November 25th, at the age of seventy-four years. He was graduated from the Pennsylvania College at Gettysburg in 1844, and was engaged in the practice of medicine for fifty-three years.

Western Surgical and Gynæcological Association.—The seventh annual convention of this association will be held at Denver, Col., December 28 and 29, 1897.

American Association for the Study and Cure of Inebriety.—The twenty-seventh annual meeting of this association will be held December 8, 1897, in the hall of the Washingtonian Home, 41 Waltham Street, Boston, Mass. Several interesting papers are announced. The annual address will be delivered by Dr. Ira Van Gieson, of New York, "On Some Recent Researches on the Action of Alcohol on Brain Cells." Dr. Mason is president of the association, and Dr. T. D. Crothers, of Hartford, secretary.

The New Jersey Sanitary Association.—The twenty-third annual meeting of this association will be held at Lakewood, N. J., on Friday and Saturday, December 10 and 11, 1897. The sanitary association is composed of professors and teachers in New Jersey colleges and schools, municipal officers, health officers, lawyers, physicians, clergymen, civil engineers, sanitary engineers, architects, plumbers, and other citizens of the State, interested in sanitation as related to homes, schools, and municipalities. The objects of the annual meeting are the presentation of facts, the comparison of views, and the discussion of the methods relating to the prevention of sickness and of untimely deaths.

Rounding up Connecticut Doctors.—The police court in New Britain, Conn., presented a brilliant appearance a week before Thanksgiving, the usual motley group of drunk and disorderlies being replaced by a batch of nine physicians, all charged with neglect in making proper returns of certificates of birth. The Hartford County health officer was the prosecutor, and he had resorted to this means of reminding the delinquents of their duty after his letters of remonstrance had failed to have the desired effect. Each of the accused acknowledged his fault and was promptly fined $10 and costs, the latter bringing the total up to $19.07.

Kipling's Compliments to the Doctors.—Rudyard Kipling was a guest at the annual dinner of the Harveian Society of London, at the Café Monico, on November 25th, and replied to the toast of "The Visitors." He said he had come so near being a doctor in his youth as to be allowed to play in the neighborhood of St. Mary's Hospital. But later he had been thrown much in the company of medical men in all parts of the world, and he admired them. He had seen them going to certain death with no hope of reward, because it was "business." He had also seen them handling cholera and small-pox, and when dying therefrom wiring for a substitute. He had seen them in Vermont manage a practice twenty miles in each direction, driving horses through eight feet of snow to attend an operation ten miles away, and digging their horses out of the snow and proceeding. It was one of the proudest things of his life, he said, to have been associated with "real fighting men of this class."

Dr. Alfredo A. Kathnack, recently lecturer on pathology at St. Bartholomew's Hospital, has been elected to the professorship in that subject at Cambridge University, in succession to the late Dr. C. S. Roy.

Intemperate Antiprohibitionists.—Dr. August Forel, professor of psychiatry in the University of Zurich and director of the State Asylum for the Insane, has resigned on account of the attacks made upon him by the press by reason of his strong opposition to the use of alcohol. The prohibitionists have for so long enjoyed almost a monopoly in illiberality that it must come somewhat as a shock to find such fanaticism exhibited on the other side.

A Difference of Opinion.—At an inquest held a short time ago in England on the body of a lad, sixteen years old, the jury found that the boy died from syncope, due to nicotine poisoning, caused by the excessive smoking of cigarettes. The coroner said there seemed to be quite an epidemic of such cases, and it was time the attention of parents was called to the danger of their children smoking at so early an age. In commenting upon this verdict, *The Lancet* agrees with the coroner and suggests an analysis of the tobacco which caused the boy's death. On the other hand, the editor of the *British Medical Journal*, while disclaiming any approval of indulgence in the cigarette habit by children, questions the accuracy of the verdict, and says that the coroner overstated the case when he asserted that there had been many deaths recently from this cause.

English-Speaking Practitioners in Italy.—At the last general medical congress held here it was unanimously voted that foreign medical practitioners professionally engaged in Italy should undergo a state examination or qualify at one or other of the Italian schools in order to legalize their practice. In consequence of this step a deputation of the English-speaking practitioners has just waited on Signor Serena, under secretary of state for the home department, to protest against such action. His excellency announced in reply that arrangements in the direction proposed by the Italian Medical Congress had not yet been taken, but that in any case the government before giving legal effect to the innovation contemplated by the congress would put itself in diplomatic communication with the governments of the other powers, with a view to obtaining for Italian practitioners in those countries the same privileges enjoyed in Italy by foreigners. The matter will probably rest there.—*The Lancet.*

Reviews and Notices.

CHIRURGIE DES VOIES URINAIRES: ÉTUDES CLINIQUES. Par le DR. E. LOUMEAU, Professeur Libre de Clinique des Maladies des Voies Urinaires. 2me Volume. Avec Planches hors Texte. Bordeaux: Feret et Fils, Libraires-Editeurs. 1897.

THIS is the second volume based upon the author's personal observation of cases, to which he has added such commentaries as have seemed necessary. Much of the matter has already been published in periodical literature or as communications to societies. A similar volume with the same title was published by the author some three years ago.

DIE HEFEN ALS KRANKHEITSERREGER. Von DR. OTTO BUSSE, Privatdocent für Pathologie und pathologische Anatomie in Greifswald. Berlin: August Hirschwald. 1897.

THIS short brochure, containing two colored plates and a number of other illustrations, represents the results of a careful experimental study of the yeast family of plants (blastomycetes, etc.) in the production of disease processes.

CYSTITIS UND URININFEKTION. Klinische, experimentelle und bakteriologische Studien, von DR. MED. MAX MELCHIOR, Privatdocent an der Universität in Kopenhagen, Fr. Chef des Laboratoriums und Secundarchirurg am Königlichen Friedrichs-Hospital. Berlin: Verlag von S. Karger. 1897.

THIS unbound volume of two hundred and thirty-eight pages without illustrations is a praiseworthy *résumé* of present knowledge concerning urinary infections and the results of bacteriological experimentation in cystitis, urethral fever, etc.

TECHNIK UND PRAKTISCHE BEDEUTUNG DER ASEPSIS BEI DER BEHANDLUNG DER HARNLEIDEN. Von DR. ROBERT KUTNER, Berlin. Berlin: August Hirschwald. 1897.

THE author has included in forty-two pamphlet pages many useful hints on the aseptic treatment of urinary derangements. There are eight illustrations.

FESTSCHRIFT EDUARD HAGENBACH-BURCKHARDT, Professor der Kinderheilkunde und Director des Kinderspitals in Basel, zu seinem 25jährigen Professoren-Jubiläum. Gewidmet von seinen Schülern. Basel und Leipzig: Carl Sallmann. 1897.

THIS jubilee production by the author's pupils contains a number of well-written and interesting theses; one on congenital malformations is well illustrated by two plates containing many interesting specimens.

SPECIELLE DIÄTETIK UND HYGIENE DES LUNGEN- UND KEHLKOPF-SCHWINDSÜCHTIGEN. Von DR. FELIX BLUMENFELD, Wiesbaden. Berlin: Verlag von August Hirschwald. 1897.

MANY useful hints in the management of consumptive patients will be found to repay the reader. There are about one hundred pages of text.

A PICTORIAL ATLAS OF SKIN DISEASES AND SYPHILITIC AFFECTIONS. In Photo-Lithochromes from Models in the Museum of the St. Louis Hospital, Paris. With Explanatory Woodcuts and Texts by ERNEST BESNIER, A. FOURNIER, TENNESON, HALLOPEAU, DU CASTEL, HENRI FEULARD, L. JACQUET. Part XI. Edited and annotated by J. J. PRINGLE, M.B., F.R.C.P. London: The Rebman Publishing Company, Ltd. Philadelphia: W. B. Saunders. 1897.

THE first plate presents the interesting conditions of hydroic erythema of the hands and lips, for which the text has been written by Du Castel. The next plate, representing the pigmented syphilide, has nothing special to commend it, and one is at a loss (unless thoroughly familiar with the subject) to guess from what portion of the anatomy the picture is taken. Whenever a question of anatomical location could arise it would be much better if the region from which the model was made were indicated on the plate. The other, representing molluscum contagiosum, the text of which is written by Baudouin, is of special value in differentiation of these lesions from a syphilide. Plate 44, showing nævi of the leg, described by Gaucher, is of interest more as a curiosity than because of its great practical importance. The pigmentation from pediculosis is strikingly portrayed in a typical picture of the back.

RHEUMATISM AND ITS TREATMENT BY THE USE OF THE PERCUSSO PUNCTATOR. By J. BRINDLEY JAMES, M.R.C.S. Eng., Licentiate of the Royal College of Physicians of Ireland; Associate of King's College, London; Author of "Replies to Questions in Therapeutics." Second edition. The Rebman Publishing Company, Ltd. London. 1897.

THIS is a second edition of a very brief account of the author's invention for making acupuncture over the seat of painful affections. The first appeared some ten years ago. He also employs injections of sulphuric ether, dry cupping, and internal medication.

INTERNATIONAL CLINICS: A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment. By Professors and Lecturers in the Leading Medical Colleges of the United States, Germany, Austria, France, Great Britain, and Canada. Edited by JUDSON DALAND, M.D. (University of Pennsylvania), Philadelphia, Instructor in Clinical Medicine, and Lecturer on Physical Diagnosis in the University of Pennsylvania, Assistant Physician to the Hospital of the University of Pennsylvania; J. MITCHELL BRUCE, M.D., F.R.C.P., London, England, Physician to and Lecturer on the Principles and Practice of Medicine in the Charing Cross Hospital; DAVID W. FINLAY, M.D., F.R.C.P., Aberdeen, Scotland, Professor of Practice of Medicine in the University of Aberdeen; Physician to and Lecturer on Clinical Medicine in the Aberdeen Royal Infirmary. Volume XI., Seventh Series. Philadelphia: J. B. Lippincott Company. 1897.

THE volume at hand is quite up to the average of this well-edited series of monographs and lectures.

The contributors are as usual chosen with deliberate care. The lectures are conveniently classified under therapeutics, medicine, neurology, surgery, etc. The first, by Edward Jackson, is a very short chapter on the treatment of presbyopia. Indeed most of the chapters are short and correspondingly attractive. This also makes it possible to include in the volume the writings of many more authors than is possible when long-drawn-out discourses are accepted. Not only is the quality of the writings being maintained, but the general make-up of the book is very satisfactory.

The illustrations are not so numerous nor are they so good as in many former volumes of the series.

JOURNAL OF THE MILITARY SERVICE INSTITUTIONS OF THE UNITED STATES. Vol. XX., No. LXXXVI. March, 1897.

THIS is a bimonthly publication edited by James C. Bush. The present number contains interesting articles on proper military institutions, by Wagner, Foote, and Steele. It offers besides much that is of interest to military men.

THE ORIGIN OF DISEASE, ESPECIALLY OF DISEASE RESULTING FROM INTRINSIC AS OPPOSED TO EXTRINSIC CAUSES. By ARTHUR V. MEIGS, M.D., Physician to the Pennsylvania Hospital. 8vo, pp. 229. Philadelphia: J. B. Lippincott Company. 1897.

THIS well-written and logically suggestive work is upon a topic of wide interest to every thoughtful reader, and gives much food for the earnest study and careful differentiation of long-accepted facts. The courage evinced by the author in combating many of the time-worn theories regarding the intrinsic and extrinsic origins of disease will be duly appreciated by all who may be interested in a very broad subject treated in a philosophical manner from a conscientiously comprehensive point of view. The writer follows a very consistent line of argument, which tends to prove that in all human beings there is a latent tendency to disease that resembles in a striking way the ordinary physical changes of progressive decay. The latter is made manifest more par-

ticularly in the study of the varied conditions associated with fibrosis in the different tissues of the vital organs. The facts bearing on this view are adduced from the study of a large number of microscopical lesions of the vessels and parenchymata of the organs in question. It is the careful consideration of these data that leads to the almost inevitable conclusion that no one organ is a leading factor, but rather that each is a part of a whole, in a general degenerative process. The views on the duality of phthisis, and the differences between inflammatory and strictly tuberculous degenerations, are particularly interesting in view of the generally accepted beliefs to the contrary. The same may be said from the standpoint of novelty regarding the multiple character of Bright's disease, and the ingenious disproof of the tenability of compensatory cardiac hypertrophy in valvular affections. Altogether the volume deals very exhaustively with the subject in hand, and is an efficient aid to every one who may wish to reconcile the facts of clinical experience with the actual demonstration of associated pathological lesions.

THE SURGICAL PECULIARITIES OF THE AMERICAN NEGRO. A Statistical Inquiry Based upon the Records of the Charity Hospital of New Orleans, La., Decennium 1884–94. By RUDOLPH MATAS, M.D., Professor of Surgery, Medical Department, Tulane University of Louisiana; Visiting Surgeon to the Charity Hospital of New Orleans.

THIS brochure of one hundred and thirty pages, reprinted from the transactions of the American Surgical Association for 1896, deals with a great variety of interesting conditions, which the author has carefully worked up from several different standpoints. The diseases of the skin have been made the subject of a special study by Dr. Dyer, also of New Orleans Charity Hospital, which is added as an appendix. Data from various sources have been incorporated, and quite a lengthy bibliography closes the volume.

REPORT OF THE PASSAIC VALLEY SEWERAGE COMMISSION UPON THE GENERAL SYSTEM OF SEWAGE DISPOSAL FOR THE VALLEY OF THE PASSAIC RIVER, AND PREVENTION OF THE POLLUTION THEREOF. Newark, N. J., February, 1897.

THIS report contains valuable data and a large map of the district in question. In a brochure of one hundred and thirty pages, the author has collected much interesting data bearing upon the question in hand.

PRACTICAL NOTES ON URINARY ANALYSIS. By WILLIAM B. CANFIELD, A.M., M.D., Lecturer on Clinical Medicine, University of Maryland; Visiting Physician to the Union Protestant Infirmary, Bay View Hospital. Second Revised Edition. Detroit: George S. Davis.

THE present edition of Dr. Canfield's hundred-page brochure has been revised so as to cover the ground and include the more recent methods of urinary analysis.

LECTURES ON APPENDICITIS AND NOTES ON OTHER SUBJECTS. By ROBERT T. MORRIS, A.M., M.D., Fellow of the New York Academy of Medicine; American Association of Obstetricans and Gynæcologists; American Medical Association. Second Edition, Revised and Enlarged. With Illustrations by HENRY MACDONALD, M.D. New York and London: G. P. Putnam's Sons.

THE present volume has been somewhat increased in size and modified in text. The work is practically a collection of lectures embracing the author's views upon the very important and interesting subject.

There are added (under the heading of "Notes") a series of short articles upon important surgical topics, which equal in space covered, illustrations, and general interest the lectures proper.

HAND-BOOK FOR HOSPITALS. By ABBY HOWLAND WOOLSEY, Member of Committee on Hospitals of the State Charities Aid Association. Third Edition. New York and London: G. P. Putnam's Sons.

THIS is No. 32 of the New York State Charities Aid Association Series. A special committee on revision of this handbook, consisting of Drs. Hitchcock, Wheelock, and Gill Wylie, has collected a mass of special information here embodied, which will be found of great use to charity commissioners, superintendents of poor, and those engaged in the management of hospitals, asylums, and institutions in general. It embraces information on water supply, drainage, housekeeping, nursing-services, disinfection, etc.

ADDRESS ON IMMUNITY TO DISEASE. By W. B. RANSOM, M.D., M.A., M.R.C.P., Physician to the General Hospital, Nottingham. London: John Bale & Sons.

THIS is the presidential address delivered before the Nottingham Medico-Chirurgical Society. It deals in an exceptional manner with a very interesting question.

A CLINICAL, PATHOLOGICAL, AND EXPERIMENTAL STUDY OF FRACTURE OF THE LOWER END OF THE RADIUS, WITH DISPLACEMENT OF THE CARPAL FRAGMENT TOWARD THE FLEXOR OR ANTERIOR SURFACE OF THE WRIST. By JOHN B. ROBERTS, A.M., M.D., Professor of Anatomy and Surgery in Philadelphia Polyclinic; Professor of Surgery in the Woman's Medical College of Pennsylvania. With 33 illustrations. Philadelphia: P. Blakiston, Son & Co. 1897.

THIS little work of seventy-six pages deals with specimen cases, experimental observations, causes and mechanism, symptoms, diagnosis, and treatment of the injury described.

PROCEEDINGS OF THE NEBRASKA STATE MEDICAL SOCIETY. Twenty-ninth Annual Session, 1897. Published by the Society.

THREE hundred and seventy three pages of well-prepared, well-printed, and well-bound papers, with frontispiece picture of President Haldeman.

ANNUAL REPORT OF THE STATE BOARD OF CHARITIES FOR THE YEAR 1896. Transmitted to the Legislature February 25, 1897. Albany and New York: Wynkoop-Hallenbeck-Crawford Company. 1896.

THIS is the usual senate report, and it contains much of statistical interest.

THE AMERICAN ACADEMY OF RAILROAD SURGEONS. Report of the Third Annual Meeting held at Chicago, Ill., September 23, 24, and 25, 1896. Edited by R. HARVEY REED, M.D., Columbus, Ohio. Chicago: American Medical Association Press. 1897.

BESIDES the usual number of surgical papers, this volume contains good pictures of Dr. J. E. Owens, of Chicago, as a frontispiece, and of Drs. Harnden, of Waverly; Dooley, of Buffalo; and Peck, of Utica, New York, which make the volume the more worth keeping.

A MANUAL OF LEGAL MEDICINE FOR THE USE OF PRACTITIONERS AND STUDENTS OF MEDICINE AND LAW. By JUSTIN HEROLD, A.M., M.D., formerly coroner's physician of New York City and County, etc. 8vo, pp. 678. Philadelphia: J. B. Lippincott Company. 1898.

THE wide and varied practical experience of the author as coroner has well qualified him for the task of presenting, in a condensed form, the fundamental principles of medical jurisprudence, and an abundant evidence of the fact is the general character of the work itself. No attempt has been made to write an exhaustive treatise, but the skill shown in the selection of essential salient points of the varied topics considered amply compensates for that illustrative detail expected in more elaborate works. The general field is well covered and the arrangement is consistently systematic. The work is divided in two parts, the first treating of toxicology, and the second of forensic medicine proper. The classification of drug poisons is complete enough for practical purposes and the chemical tests for their detection are clearly presented. The toxic phenomena are well described and the points of diagnosis are well considered. In part second, the more important portion of the volume for practitioners, there is a full exposition of the facts connected with wounds as various causes of death in murder and suicide cases, and of the legal relations of supposed accidents with suspected murder. In this connection the pathological conditions of drowning are very lucidly described, and the differences between antemortem and post-mortem immersion are properly explained.

Due attention is also given to malpractice cases, to matters of contributory negligence connected therewith, and to the relations of death in criminal cases with negligence or want of skill in the practitioner. Deaths by electricity also form a very interesting portion of the book. The appendix contains a medico-legal description of several recent leading criminal cases, notably those of Carlisle Harris, Meyer, Holmes, and Robert W. Buchanan.

Appendicitis and its Surgical Treatment, with a Report of Seventy-Five Operated Cases. By Herman Mynter, M.D., Professor of Operative and Clinical Surgery in Niagara University, Buffalo, N. Y. 8vo, pp. 302. Philadelphia: J. B. Lippincott Company. 1897.

This volume on the absorbing topic of appendicitis is a very careful and quite exhaustive study of the subject, ostensibly from the surgeon's point of view. One of the chief characteristics of the volume is its carefully prepared bibliography, showing painstaking accuracy in the numerous quotations from authorities. The author accepts the view of the bacterial origin of the disease and the marked predisposing influences of malpositions as the direct results of initiatory inflammatory attacks. The medical treatment is viewed quite impartially and gives greater strength to the arguments in favor of radical surgical measures. The well-written reports of seventy-five operative cases fully attest the soundness of the author's views as to early interference.

A System of Practical Medicine by American Authors. Edited by Alfred Lee Loomis, M.D., LL.D., Late Professor of Medicine in the New York University, and William Gilman Thompson, M.D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the New York University, Physician to the Presbyterian and Bellevue Hospitals, New York. Volume II. Diseases of the Respiratory System and the Mediastinum, Diseases of the Blood, Diseases of the Kidneys, Diseases of the Bladder and Prostate Gland. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1897.

The contributors to this second volume include besides the late Dr. Alfred Loomis and Dr. Henry P. Loomis, such names as Solly, Tyson, Whittaker, Fitz, Coleman, Mason, and a number of others. The general scope and make-up of the work quite come up to the standard promised in Volume I. The pulmonary diseases have come in for a large share of careful consideration, and are treated of, in part at least, in a masterly way. The contribution from Loomis himself upon endocarditis, though not especially long, elucidates the subject in a very complete and satisfactory manner. Next to the diseases of the lungs come those of the kidneys, so far as space occupied and careful preparation are concerned. The blood, in its various pathological changes, has received a large amount of attention at the hands of Shattuck and Cabot, making a very interesting and instructive chapter illustrated with no less than three colored plates besides the woodcuts. The illustrations throughout the work are numerous and excellent. No chapters can be picked out as presenting evidences of greater care and preparation than others; still upon a cursory review those upon the physical signs of pulmonary diseases, hay fever, asthma, heart disease, endocarditis, and the non-tuberculous diseases of the pleura appear to have been prepared for the reader with conscientious consideration.

A System of Practical Therapeutics. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, Physician to the Jefferson Medical College Hospital. Volume IV. With Illustrations. Philadelphia and New York: Lea Brothers & Co. 1897.

This fourth volume covers the field of hydrotherapy, climate, infections, diseases of the respiratory, digestive, genito-urinary, cutaneous, and nervous systems, and diseases of the eye and ear.

We believe that the editor of this system has been governed by wisdom in urging his authors to include in their special departments illustrative prescriptions with dosage and directions for the requirements of given conditions. He very justly says: "The practising physician wishes to know how the author himself would use the remedies he commends, if he were at the bedside." In spite of this policy the prescriptions are not profuse, even in the editor's own chapters, one of which, dealing with scarlet fever and measles, is strikingly brief. Diseases of the blood are more briefly considered than is customary to-day in the larger works on medicine.

We must not forget, however, that we have before us a system of therapeutics, and not a treatise upon general medicine. Taken altogether, this volume is of equal excellence with those already published, and, although the illustrations are few, the text is for the most part presented in a very readable manner. The list of contributors contains many of the best-known American names.

Anomalies and Curiosities of Medicine. An Encyclopædic Collection of Rare and Extraordinary Cases, and of the Most Striking Instances of Abnormality in All Branches of Medicine and Surgery, Derived from an Exhaustive Research of Medical Literature from its Origin to the Present Day, Abstracted, Classified, Annotated, and Indexed. By George M. Gould, A.M., M.D., and Walter L. Pyle, A.M., M.D. Philadelphia: W. B. Saunders. 1897.

It is with somewhat of a "dime-museum" feeling that one opens this volume of human freaks, and one is likely to ask himself at the threshold whether or not he is "glad he came." A fascination, however, leads him from one anomaly to another, until he finds himself studying monstrosities, deformities, congenital and acquired, of every variety of which mortal has ever dreamed, and many which could scarcely enter the imagination in the wildest delirium. It is a large volume, and, while by no means exhausting the extensive subject, it contains a classified collection of a large number of rare and remarkable specimens illustrating what deviations from the normal human nature is capable of. As an epitome of the literature of medical freakdom the work will fill a place as a book of reference, especially if in future editions certain chapters are supplemented so as more perfectly to cover the field. Sexual peculiarities take up a large space, while pathological growths attaining unusual proportions are included among the curiosities, along with joined twins, triple monsters, horned men, and bearded ladies. The index is quite long but lacking in many particulars, and should be supplied with cross-references. A partial bibliography, ranging from Nos. 100 to 847, is arranged so as to save footnote space. Too many of the interesting conditions depicted and described are not entered in this list. The illustrations are numerous and naturally supply the chief charm of the work, which will interest natures of a morbidly curious trend no less than those scientifically inclined.

Painful Cystitis in Women Treated by Vesical Curetting.—Camero claims that the lesions of cystitis are more frequently localized about the neck of the bladder and of the trigonum. In extreme cases we have an interstitial cystitis which seems to be beyond therapeutic measures. It has been observed that even when the pain was intense the mucous membrane was not deeply involved. In such cases vesical curetting is productive of good. The operation should be preceded by thorough lavage of the bladder, with a solution of boric acid to which is added one per cent. of a solution of bichloride of mercury of the strength of 1 to 1,000. The doctor concludes his article as follows: "1. Painful cystitis is particularly frequent in women. 2. The measures to be resorted to should consist of the treatment of the uterus and its adnexa and general treatment. 3. The local treatment of cystitis, although easy in light cases, becomes insufficient in pronounced cases. 4. Surgical treatment becomes necessary in cases in which the pain is intense. 5. Cystotomy, particularly colpo-cystotomy, should be reserved for very serious cases. 6. Very often recovery or a step toward recovery by means of local topical treatment may be obtained by curetting the bladder through the urethra. 7. This operation is simple and easy; it does not require any complemental operation, and it gives excellent results."—*Gazette hebdomadaire de Médecine et de Chirurgie.*

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Regular Meeting, Held in Jersey City, October 15, 1897.

W. GILMAN THOMPSON, M.D., PRESIDENT, IN THE CHAIR.

A Case of Pulmonary Tuberculosis Complicated by Pneumo-Hydrothorax, with Some Unusual Features.—The patient, presented by DR. A. A. SMITH, was a man thirty-five years old, a gripman by occupation, who first came to Bellevue Hospital in January, 1897. During the previous summer he had been ill enough for the railway company to grant him a vacation, and when he returned to his work his condition was unimproved; he suffered from cough, shortness of breath, a certain amount of fever, and on one occasion he expectorated a small quantity of blood. About two weeks before he entered the hospital he had had a violent attack of coughing, with moderately severe pains which he referred to the lower axillary region. At no time had he had any severe pain higher up in the thorax.

Upon his admission to the hospital the physical examination revealed a rather curious condition. There were evidences of consolidation of the right lung with marked thickening of the pleura over the upper thoracic region, extending down to the inferior angle of the scapula; below that there was a very marked tympanitic percussion sound, and over that area there was an entire absence of vocal fremitus with distinct amphoric breathing. The diagnosis of pulmonary tuberculosis complicated by pneumothorax was made. Within forty-eight hours succussion sounds were heard, with distinct evidence of a pneumo-hydrothorax. There was marked dyspnœa, which was relieved by the withdrawal of a portion of the fluid by aspiration. In the course of a few days the cavity refilled and was again aspirated. Subsequent to this the symptoms of pneumo-hydrothorax entirely disappeared and he improved rapidly during the past summer, gaining nine pounds in weight. In September, however, his pulmonary symptoms became more acute, and he developed a laryngitis which was tuberculous in character; another serous effusion also took place, and a large quantity of fluid was withdrawn.

Dr. Smith said the point of special interest in connection with the case was the improvement that occurred subsequent to the attack of pneumo-hydrothorax. At the present time the physical signs were those of consolidation at the apex of the right lung, with marked thickening of the pleura, extending from about the middle of the scapula to the base of the lung. No tubercle bacilli had been found in the fluid withdrawn from the chest, although they were found in the sputa.

Acute Serous Meningitis.—DR. C. L. DANA read a paper on this subject (see page 801).

DR. G. L. PEABODY said this condition of "wet-brain," so called, was one with which all who had had much pathological experience in hospital practice were thoroughly familiar. The speaker confessed that he had never ascribed to it the importance attached to it by Dr. Dana, nor had he ever regarded it, strictly speaking, as an inflammatory process—of which, in fact, Dr. Dana had found no evidence. Dr. Peabody said he had always looked upon this condition as a part of the general atrophic changes which occurred in the organs of alcoholic patients. We knew that in this class of cases atrophic changes took place in the more important glandular structures, particularly in the stomach, liver, and kidneys, and even the obesity produced by alcohol was now regarded as an evidence of malnutrition—it was really an atrophic condition. It would be fairer, the speaker thought, to infer that the serous exudates described by Dr. Dana were the result of an antecedent atrophy of the brain tissues. There was an exudation of serum to take the place of the brain tissue which had been lost by the atrophic process. In conclusion, Dr. Peabody said that he did not wish to be understood as denying the conclusions set forth by Dr. Dana. Because of the absence of so many of the usual typical symptoms of meningitis, however, and, further, because of the fact that many alcoholic patients who died had an abnormally dry brain rather than a wet one, he had been led to the belief that the condition referred to was the result of atrophic changes rather than an inflammation.

DR. DANA, in reply to a question as to how he tapped the spinal cord, said he had followed the method described by Quincke. The patient was placed on his side, with the head elevated and the trunk well flexed, and then a needle, about five inches long, was passed in between the second and third lumbar vertebræ directly between the spines in children, and about one-fourth of an inch to one side in adults. Dr. Dana said that the operation, while it required a little skill, was comparatively simple, and the needle usually at the first attempt slipped right in, and its insertion was generally followed by a spurt of fluid, which was permitted to run until three or four drachms, sometimes only one drachm, and sometimes even one ounce or more had escaped.

DR. BEVERLEY ROBINSON spoke of two cases at St. Luke's Hospital, in which tapping the spinal cord had been resorted to. The first case was one of obscure spinal trouble. The patient was going from bad to worse, and it was finally decided to tap the cord. This was done, but no fluid followed the insertion of the needle. The case went on to a fatal termination, the patient apparently not having received any benefit from the operation. The second case was one of cerebro-spinal meningitis. The lower portion of the cord was tapped, and about four ounces of purulent fluid was withdrawn. No bacteriological examination was made. In that case the patient died during the tapping. Dr. Robinson said that in view of his experience with this operation, he should not care to resort to it again unless the conditions demanding it were very urgent.

DR. V. P. GIBNEY said he had performed tapping of the cord in cases of tuberculous meningitis with negative results. While he had never seen death occur during the operation, as in Dr. Robinson's case, or any harmful effects follow its performance, he had been rather impressed with the inutility of the measure in tuberculous meningitis. In cases like those described by Dr. Dana, he could understand the need of such a procedure, especially as he saw no particular objection to the operation. It was well known that a spina bifida could be tapped, and unless too much of the fluid was removed no ill effects would follow.

DR. ADAMI, of Montreal, was inclined to agree with Dr. Peabody that the condition described so fully by Dr. Dana might in the main be of the nature of a *hydrops ex vacuo*, secondary to atrophic changes in the cortex. The alterations in the cells described and illustrated might well be atrophic in character, and had there been an active pouring out of fluid, such as occurred in meningitis, he would not have anticipated such great variations in the amount of fluid secured by lumbar tapping. Judging from these great variations, it would appear rather that in this condition of the "wet-brain" of alcoholism there might be two factors in action to different extents at different stages or in different individuals—a passive pouring out of fluid to compensate for toxic atrophy of the brain substance,

and an active pouring out, obscurely inflammatory in character, as suggested by Dr. Dana.

Dr. H. M. Biggs said that while in Berlin, in the summer of 1896, he was informed by Professor Koch that at the Hospital for Infectious Diseases lumbar tapping was resorted to almost as a routine measure in differentiating between cerebro-spinal and other types of meningitis. In regard to the pathology of the condition described by Dr. Dana, the speaker said that while in the main he agreed with Dr. Peabody, that the process was secondary to an atrophy, still he thought the atrophy was not the only factor in its production. In addition to the increase of cerebro-spinal fluid secondary to the atrophy in the brain tissue, there was probably a further increase in the quantity of the fluid, due to the direct influence of the acute alcoholism. This seemed to the speaker probable, as it was not usual to see in autopsies on alcoholic subjects who had died suddenly or from the direct result of some other condition than acute alcoholism such a very great increase in cerebro-spinal fluid as was commonly found in chronic alcoholism with an acute alcoholism supervening and causing death.

Dr. A. A. Smith inquired whether Dr. Dana had found any connection between the condition described and changes in the kidneys.

Dr. Dana replied that he had found no such connection. In a number of the cases no evidences of nephritis had been found post mortem, and in those cases the condition of the brain was essentially the same as in those in which kidney lesions did exist. He was inclined to believe, however, that general arterial sclerosis accompanying chronic nephritis would be apt to accelerate this condition of "wet-brain" and render it more serious.

Dr. Thompson said that Dr. Dana had certainly given a very graphic clinical picture of this condition. He fully indorsed the view expressed by the writer that in the treatment of these patients food was of more importance than were stimulants. After lavage of the stomach the food could be introduced through the tube, with rectal alimentation in addition.

Dr. Dana, in closing the discussion, said he did not regard this condition as an inflammation, in the ordinary sense of the word, yet he thought it might be looked upon as an inflammation in the broadest definition of that word. The serous effusion was the result of a reaction of the cells to an irritant, and it was poured out in order to wash away the poisons resulting from cell degeneration. The speaker said he used the term meningitis because the clinical picture was very similar to one of meningitis. Often, at the post-mortem in these cases, a purulent meningitis was found which had not been recognized during life, because the symptoms corresponded simply to "wet-brain." In regard to the view expressed that the process was an œdema and the result of atrophy, he thought there was considerable truth in it, especially in the older cases; but this view could not hold good in the majority of cases, because the majority of these patients got well. They went through this process, showed all these symptoms, and then recovered entirely, with no evidences of brain atrophy afterward. Taking a general view of these cases, Dr. Dana said he was inclined to believe that the process was one which was more perhaps in the nature of a toxæmia than of an inflammation, and that there was some active change in the brain cells due to this toxic agent. In the fatal case narrated by Dr. Robinson the quantity of fluid removed—namely, four ounces—appeared to him to be rather large.

The Clinical Value of the Widal Test.—The author, Dr. W. Gilman Thompson, stated that at the meeting of the British Medical Association he had reported five hundred and three cases in which the Widal test had been employed, and from that series he had drawn some conclusions as to its value. Since then he had added to the above list fifty-one cases he had had in his own service at the Bellevue and Presbyterian Hospitals. The total number of cases, therefore, on which he was now prepared to report was five hundred and fifty-four; this did not include repeated tests made on the same patient. The tests were made by experienced bacteriologists connected with the board of health and with five different hospitals. In the majority of the cases those who made the tests had not seen the patients and knew nothing whatever about them. In one hundred and eighty-two of the cases there were undoubted clinical evidences of typhoid fever; in the remainder the test was made as a matter of routine. The test gave rise to very curious results in certain cases. In one instance, for example, four tests were made during the course of the fever without getting any result, but a distinct reaction was obtained during convalescence. In two other cases the reaction occurred only during the relapses. In the one hundred and eighty-two cases which were diagnosed clinically as typhoid fever the test gave a positive reaction. In six cases of undoubted typhoid the test failed absolutely. In a number of cases of malaria, pneumonia, and other diseases, positive reactions were also obtained, rendering the test somewhat unreliable from the clinical standpoint.

Dr. H. M. Biggs showed some cultures of the bacillus typhosus which had been prepared by a new method devised by Dr. Philip H. Hiss, assistant bacteriologist in the health department. As was well known, Dr. Biggs said, there had always been great difficulty in the isolation and identification of the typhoid bacilli in the fæces, and their differentiation from other bacilli of the "colon group"—at least, in their rapid and certain identification. Various methods had been devised to obviate this, none of which had been accurate or satisfactory in all respects; they involved either too much uncertainty or too much time and labor to be of practical value in a diagnostic sense. Dr. Hiss, he said, after a long series of experiments, had succeeded in finding two media which seemed to overcome the obstacles heretofore met with. He then gave the following abstract from a paper "On a Method of Isolating and Identifying the Bacillus Typhosus," which will shortly appear in the *Journal of Experimental Medicine*:

"Two media have been devised. One for the differentiation of the bacillus typhosus from the various members of the 'colon group' by tube culture, and one for the differentiation of the colonies of the bacillus typhosus from those of the 'colon group' by plate culture.

"The tube medium contains agar, 5 gm.; gelatin, 80 gm.; NaCl, 5 gm.; extract of beef (Liebig's), 5 gm.; and glucose, 10 gm. to the litre; and has a reaction indicating 1.5 per cent. of normal acid, phenolphthalein being the indicator.

"In this medium the growth of the typhoid bacillus produces a uniform clouding, at 37° C., within eighteen hours. The colon cultures do not give the uniform clouding, and present several appearances, dependent upon differences in their motility. [Tubes were shown.]

"The plating medium contains agar, 10 gm.; gelatin, 25 gm.; NaCl, 5 gm.; beef extract, 5 gm.; glucose, 10 gm. to the litre; and reacts two per cent. acid to phenolphthalein.

"The colonies of the bacillus typhosus in plate cultures made with this medium give rise to fringing threads and outgrowths, and are small. The colon colonies are larger and do not form threads.

"These colonies develop within eighteen hours, and the tube medium may then be inoculated from them. This in its turn gives its characteristic appearance in

eighteen hours, the whole process taking about thirty-six hours, at 37° C.

"The bacillus typhosus, alone of all the organisms investigated during these experiments, has displayed the power of giving rise both to the thread-forming colonies in the plating medium, and to the uniform clouding of the tube medium when exposed to a temperature of 37° C.; hence these two characters in combination have proved of great value in the isolation and identification of the bacillus typhosus, and will apparently prove diagnostic.

"The practical application of these media has led to the ready detection and isolation of the bacillus typhosus from the stools and urine of patients suffering from typhoid fever."

The value of this method was carefully tested on the fæces from a series of cases in the New York Hospital. There were twenty-six cases, of which nine were proven, both clinically and bacteriologically, to be not typhoid. Of the remaining seventeen, fourteen were in the febrile stage and three convalescent. The three convalescent cases were all negative. In thirteen of the fourteen cases in the febrile stage, typhoid bacilli were isolated from the stools.

The speaker said, in regard to the results in cases from other hospitals, that they were not so good as the investigators hoped to obtain in the future, because in many instances the stools were not received in a proper condition. In one instance the stool had been sterilizd with bichloride of mercury, and many of them had stood for from forty-eight to seventy-two hours. Of course the results in such cases could not be satisfactory. He had been informed by Dr. Hiss that it required on the average about one hour per case to make such an examination of the fæces, which, as compared with any other method for the separation of the typhoid bacillus, was an immense saving of time.

The health department, he said, had decided to add this method to the Widal test for the diagnosis of typhoid fever, and circulars of information had been issued. [A copy of the circular is printed in connection with this report.] In any case of suspected typhoid the health board would examine the stools or urine if the attending physician desired it. In a considerable number of cases of typhoid fever the bacilli were found in the urine, in how large a number was not known, but they were certainly present in a considerable proportion of cases. It was not known how early the bacilli appeared in the stools or how long they remained. In most of the cases which had been examined the disease was fairly well advanced. The sixth day was the earliest period at which the bacilli were found in the fæces, and it was the only case which was examined so early. In other cases the bacilli were found on the eleventh, twelfth, and thirteenth days, respectively, while in others they were found still later. In none of the cases did the bacilli persist during convalescence. In most of the cases when the temperature was normal the results were negative.

Dr. Biggs said that the conception of what typhoid fever is must be somewhat revised, or at least that term must be confined to that form of typhoid infection in which abdominal symptoms and lesions were present in the small intestines. Unquestionably cases of typhoid infection occurred in which there were no such lesions in the small intestines, and in which the usual manifestations of typhoid fever were absent.

Dr. Biggs took strong exceptions to the conclusions of Dr. Thompson. He thought that Dr. Thompson's description of the test was not sharply enough defined. The Widal test, when it was first described, was thought to be specific and qualitative. Soon afterward it was found to be simply quantitative. Merely to say that the reaction was obtained had little or no force, unless we could also say under what conditions it was obtained. At the laboratory of the health department the experience now probably covered between four hundred and five hundred cases of typhoid fever, and in no instance when the reaction was produced in the dilution of 1 to 20 had the final results shown that a typhoid infection did not exist. When a definite reaction was produced in a dilution of 1 to 20, the reaction taking place within a time limit of ten minutes, it seemed perfectly safe to assume that we had to deal with a typhoid infection. On the other hand, there was a considerable number of cases of undoubted typhoid infection in which the reaction was absent. Negative results therefore did not exclude a typhoid infection. The reaction might be absent throughout the entire course of the disease, or it might appear very late or even during a relapse, so that the absence of such reaction did not exclude the existence of typhoid, but the presence of the reaction under definite conditions entirely justified the assumption that the case was one of typhoid infection.

"Circular of Information Regarding the Separation for Diagnostic Purposes by a New Method of the Typhoid Bacilli from the Stools and Urine in Cases of Typhoid Fever.—The examination of specimens of blood from cases of suspected typhoid fever for the Widal reaction has been of great assistance in diagnosis. Occasionally, however, the agglutinating substances do not develop in the blood at any time, or only very late in the course of the disease, or an earlier infection cannot be excluded, owing to the lack of a reliable previous history. In these instances the Widal test fails to give the information desired.

"Bacteriologists have long sought for a rapid and certain method of obtaining and identifying in pure culture the typhoid bacillus from the stools and urine in cases of typhoid fever; but hitherto without satisfactory results. Dr. Hiss, assistant bacteriologist to the health department, has devised a method by which it is believed it will now be possible to recover and identify the typhoid bacilli within less than forty-eight hours, from specimens of fæces and urine containing them. The health department desires thoroughly to test this method, and is prepared to undertake these examinations if proper specimens are furnished.

"While definite knowledge is lacking as to the number of typhoid bacilli usually present in the stools of typhoid patients, and as to the time of their appearance and disappearance, it is believed that they are generally present in the discharges, not only during the height of the disease, but also, though to a less extent, at its commencement and for a considerable time during convalescence. The appearance of the bacilli in the urine is usually later than in the fæces. The experience thus far obtained seems to indicate that the bacilli may be obtained from about fifty per cent. of all cases on the first examination, and from about ninety per cent. after repeated examinations. The health board hopes that these examinations will prove of value, not only for diagnostic purposes, but also in solving important sanitary questions relating to the presence in and time of disappearance of the bacilli from the stools during convalescence.

"Physicians are requested to send specimens of intestinal discharges and urine from well-defined cases of typhoid fever, and also from all doubtful cases in which the Widal test has failed to give definite information.

"It must be understood that as yet these investigations are largely experimental, but that when the typhoid bacilli are isolated in culture an absolute diagnosis of typhoid infection is obtained.

"Directions for Preparing Specimens of Fæces or Urine for Examination.—Care should be taken to send, if possible, a specimen obtained from a natural

movement or one following a simple enema. No disinfectants, of course, should be employed. If the movement is formed, the portion from the part last passed—that is, the portion coming from highest up in the intestine—should be selected. In cases complicated by colitis, care should be observed to avoid, if possible, the selection of a specimen composed largely of mucus.

"The specimen is collected by seizing a small portion of the discharges between the two slips of wood accompanying the outfit, and placing this in a bottle. The top of the bottle is replaced and the specimen returned to a culture station or to the laboratory.

"Specimens of urine should be received directly into the bottle accompanying the outfit, or should be collected in an absolutely clean vessel and immediately transferred to this bottle, which is then returned to a culture station or to the laboratory.

"The necessary outfits, with directions and blanks, may be obtained at the various health-department depots, where diphtheria culture tubes, antitoxin, and other products are supplied. The accompanying blank should be fully filled out in every case."

SOUTHERN SURGICAL AND GYNÆCOLOGICAL ASSOCIATION.

Tenth Annual Meeting, Held at St. Louis, November 9, 10, and 11, 1897.

GEORGE BEN JOHNSTON, M.D., PRESIDENT.

First Day, Morning Session.

THE meeting was held at the Southern Hotel.

Gall Stones in their Relation to Cancer of the Gall Tract.—DR. A. L. REED, of Cincinnati, read the paper, which was based upon a report of four cases in which distinct gall-stone history had preceded the history of malignant disease. The diagnosis had been confirmed in all of them by exploratory incision, and in two of them by autopsy.

CASE I.—Woman, aged fifty-two. Had hepatic colic during five years preceding, associated with all of the usual gall-stone symptoms. During the preceding thirteen months pain in the right hypochondriac region had been constant. Within the preceding six weeks persistent jaundice had developed. Globular tumefaction was felt below the costal margin. Exploratory incision revealed primary carcinoma of gall bladder and gall tract with secondary development in the liver. Diagnosis confirmed by autopsy.

CASE II.—Male, aged sixty. Had gall stones for twenty years; confirmed by their frequent passage *per vias naturales*. Patient had undergone rapid emaciation, and during the preceding month pain had become constant. More latterly he became pronouncedly jaundiced. No physical symptoms could be detected. Exploratory incision revealed carcinoma of the gall bladder and gall ducts, with secondary nodules in the liver. A calculus was found in the common duct and disintegrated by needle puncture. Primary recovery with amelioration of all symptoms, followed by death four months later. No autopsy.

CASE III.—Woman, aged forty-five. Had had hepatic colic for several years. During the preceding six months she had been profoundly jaundiced. Lost flesh rapidly. Examination of the blood revealed marked cholæmia. There were no physical symptoms in the right hypogastrium. Exploratory incision revealed induration about the head of the gall bladder and common duct, to both of which the duodenum was firmly attached for a distance of several inches. Calculus could be felt within the common duct just within its orifice. This could not be dislodged by prudent pressure or disintegrated by needle. It was delivered by incision through the duodenum. Patient never rallied, but died within thirty-six hours after the operation. No autopsy.

CASE IV.—Man, aged fifty-two, constant drinker. Had severe attacks of hepatic pain during preceding fifteen years. Last attack was persistent and continued for over six weeks. In addition to the usual symptoms he had a vacillating temperature and sweats. Operation revealed empyema of the gall bladder with induration at its ductile end. The gall bladder was stitched to the abdominal incision and drained. Death a week later. Autopsy revealed carcinoma of the ducts at their juncture. Numerous small calculi were found in the hepatic duct well up in its main trunk and in a number of its twigs. Multiple abscesses were found in the liver substance.

These cases, the author said, had a suggestive significance and pointed to an etiological relationship. This was explained by the result of persistent irritation of the foreign bodies upon the mucous surfaces, inducing hypertrophy, cell proliferation, and, in the event of the existence of original tendencies to cancer of ante-natal origin, they induced rapid development of the malignant neoplasm.

DR. EDWIN RICKETTS, of Cincinnati, reported two interesting cases of cancer which he believed were due to gall stones. He said Courvoisier had found malignancy in seventy or eighty-four cases of gall stone; while Bradrowski had found forty cases of cancer.

DR. JOSEPH EASTMAN, of Indianapolis, reported a case which had come under his observation within the last two weeks, which confirmed the remarks of the essayist. He believed that cancer of the gall bladder and gall ducts, as in the uterine cervix, was often the outgrowth of prolonged localized irritation.

DR. JAMES T. JELKS, of Hot Springs, had seen cancer of the uterus unmistakably produced by gall-stone infection; hence the deductions of the paper, to urge operative interference in all cases to prevent carcinoma of the liver, were prudent.

DR. RUFUS B. HALL, of Cincinnati, expressed himself as being firmly convinced that the deductions drawn from the paper would be sustained by future work in this direction. Nine cases tabulated by him confirmed the deductions of the essayist. He cited one case.

DR. A. M. CARTLEDGE, of Louisville, said that in many cases presenting a history of the passage of gall stones the patient may have had beginning carcinoma of the ducts for two or three years previously. He indorsed the views of the essayist relative to operative interference in cases of gall stones.

DR. L. MCLANE TIFFANY, of Baltimore, thought the causative relation between gall stones and cancer was not yet well established; but that cancer was accompanied by gall stones and found frequently to exist was well known.

DR. THADDEUS A. REAMY, of Cincinnati, took a more conservative ground, and thought the association ought not to go on record to the effect that because gall stones are associated with cancer the abdomen of every man or woman having gall stones must be cut open lest he or she, as the case might be, might have cancer.

DR. REED re-emphasized the significance of the persistent coincidence of cancer in long-standing gall-stone cases. His own brief experience embraced cases in which there had been long-standing antecedent gall-stone history.

Disposal of the Stump in Appendicitis Operations was the title of a paper by DR. W. D. HAGGARD, JR., of Nashville, Tenn. The author considered

appendicitis pre-eminently a surgical affection. Surgical isolation of the infected appendix was as essential as the hygienic isolation of any of the infectious diseases. The more imperative and explicit operative indications were specified. The various methods of disposing of the stump by invagination were discussed, and the modification and technique employed by Van Hook, Dawbarn, McBurney, Murphy, and Morris were described. The ideal of all surgery was completeness: applied to the surgery of the appendix, it was total extirpation of the organ. He then described the following method practised by Deaver in suitable cases: After the appendix and meso-appendix are freed from adhesions, the cæcum is stripped of its contents and grasped between the fingers and thumb of the left hand, the appendix being held by forceps and cut off flush with the colon. The resulting peritoneal wound is united by continuous Lembert sutures, while the cæcum is still held securely with the left hand just as in a gun-shot or stab wound of the intestine. Sutures may be disposed in two layers, the first uniting the edges of the wound and the second approximating the peritoneal covering to the cæcum over it. This method is not applicable in cases in which the cæcum is bound down by adhesions preventing its delivery in the incision. It is necessary to prevent the escape of colon contents by accurate suturing of the cut ends.

Total excision of the appendix with closure of the hole in the head of the colon does away, first, with subsequent perforation of the stump under the ligature from infection in its own cavity; second, abscess of the wall of the cæcum from invagination of the infected stump; third, continuance of infected process from stricture in the stump between the distal ligature and the proximal opening of the appendix into the cæcum; fourth, imperfect invagination with incomplete drainage of the stump on account of the cæcal wall being thickened and stiffened with inflammatory exudate.

The author has employed this method with entire satisfaction in five cases.

Report of Four Cases of Abscess of the Uterus.—This paper was by Dr. George H. Noble, of Atlanta, Ga. The first case was one of puerperal origin, the operation being done at the end of the second week. There were a pus tube and abscess of the left ovary. The appendages on the right side were normal. After extensive adhesions of unilateral disease had been separated, an abscess of the fundus uteri about the size of an ordinary lemon was discoverd, which was excised, curetted, and cauterized with carbolic acid. The cavity extended from the median line to the stump of the appendages on the left, which was turned into it and fastened with sutures to prevent the formation of a dead space. A glass drain was dropped into Douglas' pouch after the abdominal cavity had been flushed. The woman made an uneventful recovery and had been well for two years without any pelvic disturbance. Three other similar cases were reported in detail by the author. The four cases showed what any surgeon would sometimes do for an aseptic uterus when given a chance. They also supported the view that it was not always necessary to extirpate the uterus in suppurative inflammation of its parenchyma, and that such operations should be confined to cases in which the uterus was thoroughly septic or riddled with abscesses.

Dr. A. M. Cartledge said the results following the method pursued by the essayist were better than those of hysterectomy for infected uterus complicating childbirth or abortion.

Dr. J. Wesley Bovee was pleased with the advanced position taken by the author of the paper. Gynæcologists had to fear, however, the future usefulness of the uterus if they followed this method. It might tend to the production of rupture of the organ.

Dr. James T. Crofford said that in cases of abscess of the uterine wall originating from the mucous membrane, if the cervix was kept dilated and the uterus, freed of everything with a curette, was thoroughly cleansed and packed with gauze, these abscesses would open into the endometrium, followed by relief in the majority of cases.

Dr. Richard Douglas said that he treated cases of infection following abortion or full-term labor by the Carossa method with decided benefit.

Dr. W. E. B. Davis said that uterine abscesses following either abortion or the puerperal state could be treated successfully by incision and drainage in a good proportion of cases, even though the abscesses might extend beyond the uterus. Illustrative cases in which this treatment was resorted to were cited.

Dr. J. G. Earnest favored an exploratory incision to ascertain whether or not the patient was a fit subject for the method of treatment pursued by Dr. Noble. In the event the case was not suitable for the application of this method, very little damage was done by such an incision.

Dr. R. M. Cunningham said it was extremely difficult in general surgery to get primary union after curetting and disinfecting abscesses, in that it was difficult to destroy the staphylococcus, and more particularly the streptococcus, which perhaps extended beyond the abscess wall and continued its infective influence.

Dr. Noble, in closing, emphasized the point that the uterus was the seat of infection, and not the appendages. Only in cases in which there were one or two or possibly three abscesses was this method of treatment applicable.

A Study of Retroperitoneal Neoplasms and Suppurations, with Special Reference to Diagnosis.—Dr. Richard Douglas, of Nashville, Tenn., the author, accepted the definition of Mr. Lockwood for retroperitoneal neoplasm, namely, a solid or cystic tumor growing behind the peritoneum into the fold and not connected with any of the great retroperitoneal organs. The author then dwelt at length upon the pathology of these neoplasms and their causation, and then passed on to consider retroperitoneal cysts, and cysts of the pancreas. While not an advocate of the use of the aspirator in intra-abdominal diagnosis, yet under proper conditions the author thought this instrument would reveal valuable evidence, not only as to whether the growth was solid or cystic, but as to its nature. In retroperitoneal sarcoma aspiration revealed only a little blood or blood serum in the needle. This sign enabled Weir and Bull correctly to diagnosticate a case reported by Devlin.

Tubal and Ovarian Hemorrhage Resembling Ruptured Ectopic Pregnancy.—This paper was read by Dr. J. Wesley Bovee, of Washington, D. C. The author said that a few years back pelvic hæmatocele was a condition that every practitioner met occasionally, and many were the supposed causes of it. When the subject of ruptured tubal pregnancy was so universally taken up, some of the most aggressive investigators told us to search in every case of pelvic hæmatocele and we would find a ruptured ectopic pregnancy. This dictum, though not indorsed by all observers, found a ready following, and to this time the majority of students of diseases of the female pelvic organs had accepted it. Many cases had been reported in which a presumptive diagnosis of ruptured tubal pregnancy had been made—cases in which such symptoms as shock, sharp pain, irregularity of menstruation even to amenorrhœa, small tumor in the pelvis were present and some in which even death resulted, and yet autopsy had revealed no pregnancy, but instead hemorrhage from a Fallopian tube or an ovary, or both. The speaker offered, as he thought, conclusive evidence

against the positive statements that had gone out, that this condition would always be found in these hemorrhages. There were many instances in which women were deeply wronged by these diagnoses. Oftentimes the hemorrhages have occurred in virgins at a very young age and in widows above reproach. These hemorrhages result from ectopic pregnancy; from malignant disease of the uterus, appendages, or rectum; from varicose veins in the broad ligaments; from disease of the appendix; from inflammatory disease of the tubes and ovaries, and from many other causes. The author's remarks were restricted to disease of the appendages, and he cited a case in detail to exemplify them.

First Day—Afternoon Session.

Extra-Uterine Pregnancy Operated on at the Seventh Month.—Dr. J. G. Earnest, of Atlanta, Ga., reported an interesting case. The patient was thirty-six years of age, and the mother of several children. She came under his care September 19, 1897. Five months previous he had been called to see her on account of profound collapse which threatened life. A history of irregular uterine hemorrhages was elicited and a diagnosis of ruptured tubal pregnancy on the left side was made. Operation was deferred at this time, for the reason that it was feared the patient would die under the anæsthetic. Nothing further was heard from patient until the date mentioned, when the abdomen was found distended by a tumor on the left side and in the centre as high as the umbilicus. On the right side was another apparently distinct cyst filling that side of the pelvis and extending well up into the abdomen. On opening the abdomen a large tumor occupying the centre and left side presented a surface somewhat irregular, very dark in color, and traversed in every direction by large blood-vessels on the surface. The enlarged uterus was inclosed in this mass. The tumor of the right side was about the size of an adult head, about one-quarter of an inch thick, and seemed to be distinct from the large one, the dividing line dipping down between them about half the diameter of the tumor. To the larger mass were attached several coils of intestine, which were dark and changed in texture at the points of contact. The cyst on the right side peeled out without much hemorrhage, but with the work of peeling off the placenta from the pelvic and abdominal wall began the flow of blood so appalling. The task being pushed as rapidly as possible, the mass was loosened and iodoform gauze quickly packed behind it. The cyst was still unbroken and had the appearance when lifted up of being a fibrocystic tumor of the uterus. The author concluded to remove the uterus and drain through the vagina. As the uterine arteries could not be reached, a wire attached to a serre-nœud was thrown around the uterine body, tightened, and the mass cut away. The patient was now in such a critical condition that the author abandoned draining through the vagina. He tied the uterine and ovarian arteries, and packed the cavity with iodoform gauze, which was brought out at the lower angle of the wound, and closed the abdomen with silkworm gut. The gauze was removed on the sixth day. On the eighth day fæcal matter passed from the drainage tract. From this time until she left the hospital, October 30th, most of the fæces passed by the fistula. Five days later she was having free rectal evacuations with a corresponding falling off of the fæcal discharge from the fistula. The speaker said that if the fistula failed to close spontaneously it would be closed by operation. The large tumor was covered entirely by an enormously expanded placenta beginning in the bottom of the pelvis, firmly attached to the pelvic and a portion of the abdominal wall, its villi reaching well down into the tissues. From the top it was deflected from the abdominal parietes over beyond the centre, everting the body of the uterus. In the cyst thus formed was found a fœtus of about seven months.

Cystic Disease of the Mamma.—Dr. L. McLane Tiffany, of Baltimore, read the paper. He said the occurrence of cysts as a confusing element in the course of solid tumors of the breast was not so uncommon and might greatly resemble the subject dealt with in his paper; yet the clinical history and anatomy of cystic adenomata were sufficiently clear and the prognosis was sufficiently important to justify careful study. In most cases an accurate diagnosis could be reached before operation. Dr. Tiffany reported eleven cases that showed many symptoms in common.

Cystic Fibro-Adenoma of the Breast.—The speaker had examined three of these tumors, and, as they agreed so closely both in microscopic and macroscopic appearances, a description of one would answer for all. Macroscopically the breast is full and hard with numerous small nodules, to be felt under the skin, but not adherent to it. These nodules vary in size from that of a pea to that of a walnut. Some of them feel as though they contain fluid. When the breast is cut through, normal glandular tissue is seen to be replaced by a hard, dense white tissue with innumerable cysts containing either glazy sticky fluid or a cheesy material. The fluid varies in color. In some cases it is white and transparent; in others green, red, yellow, or a dirty brown. Microscopically sections were taken from various parts of the tumor, hardened in a ten-per-cent. solution of formalin for twenty-four hours and in alcohol. They were embedded in celloidin and stained by the ordinary method with hæmatoxylon and eosin. Under the microscope the sections presented the following appearance: There is a mass of white fibrous tissue including cysts, fat, and tubules. The tubules are lined by several rows of cuboidal epithelial cells and are massed in discrete areas presenting somewhat the appearance of an intracanalicular growth. In some localities the tubules are seen to be much dilated in parts, completely filled with cells, while outside they are surrounded by a well-marked area of round-cell infiltration. Here and there in the tubules are to be seen loose desquamated cells, which are granular and swollen, presenting somewhat the appearance of the cells of sebaceous glands. These cells have very deep-staining nuclei, and when seen in the smaller tubules are deeply pigmented, of a brownish color, as though blood stained, and, as here and there one can find the remains of red blood corpuscles, this is probably the case. Many of the ducts are lined by papillary ingrowths made up of cylindrical cells which take eosin well. The tubules present all stages of dilatation up to large cysts; many of the cysts are lined by several layers of cells resembling pavement epithelium. The fibrous tissue which is so abundant is rather wavy, not very cellular, and well supplied with blood-vessels. It stains very faintly with eosin. The diagnosis of benign cystic fibro-adenoma is perfectly clear.

The X-Ray and its Application to Surgery.—Dr. A. V. L. Brokaw, of St. Louis, Mo., made some remarks on this subject, and exhibited two hundred radiographs. He showed excellent radiographs of the heart, the thorax, fractures of the dorso-lumbar vertebræ, the pelvis, and fractures and lesions of the long bones. Of the many hundred exposures he had made, he had yet to see harmful effects following the use of the *x*-ray, such as cutaneous burns, loss of hair, and lesions of varying intensity.

Second Day—Morning Session.

Chronic Proctitis.—Dr. D. F. Talley, of Birmingham, Ala., read a paper on this subject. He dealt

with two varieties of non-specific chronic proctitis. First, those cases in which a diffuse, persistent inflammation, superficial ulceration, and papillomatous vegetation were the prominent features. Second, those in which the submucous tissues were principally involved in the hypertrophic process, causing a proliferative stenosing proctitis. The main symptoms of these two forms of proctitis were described. Rest in the recumbent position was recommended as being of paramount importance in the treatment of the first form of the disease. The diet should be of a liquid character, bland and nutritious. The sphincter muscle should be divulsed when the trouble is low in the rectum. In the absence of ulceration, when there was a diffuse chronic inflammation, the mucous membrane should be mopped with silver or copper of the strength of thirty grains to the ounce. The after-treatment consisted in putting the patient to bed, washing the rectum daily with warm boric-acid solution, and the use of suppositories of iodoform and boric acid. In chronic cases in which the ulcers were extremely indolent, the solid stick of silver or crystal of copper might be used. In these cases it was necessary to make repeated applications before the ulcers became healthy and began to heal.

The Sources and Diagnosis of Pyuria. — Dr. Howard A. Kelly, of Baltimore, read this paper. He began by stating that if he were asked what subject in the entire range of medicine and surgery he considered it most important to bring prominently before the profession at present he would probably reply, Pyuria. The subject is important on account of the great number of undetermined cases under treatment, and on account of the progressive nature of some forms of the disease, as well as on account of the facility with which the diagnosis can now be made with better means of investigation. Pyuria, of course, signifies merely the presence of pus in the urine; this may be in large or in small quantities, and may proceed from any part of the urinary tract from the external urethral orifice up to the cortex of the kidneys. The investigation of a pyuria is an analytical one—taking the symptom and trying to trace its origin. The best way to investigate a pyuria is to begin by making an examination of the urinary tract, following an anatomical order, proceeding from below upward. The history of the case, the microscopical and bacteriological and chemical examinations of the urine must be carefully made, and all facts ascertainable by palpation must be elicited first. The direct investigation then proceeds in an orderly manner, beginning with the external urethral orifice, where Skene's glands may be distended with a drop or two of pus; the urethra may be in a state of intense inflammation and even ulceration, affording sufficient pus to yield a decided sediment in the urine. Sometimes a suburethral abscess may pass unnoticed for many months, in spite of the fact that it contains from a teaspoonful to a tablespoonful of pus. The vesical sources of pyuria are from a cystitis, including a trigonitis or inflammation of the trigonum; foreign bodies, creating a cystitis; ulcers, associated with a cystitis or tuberculous in their nature. These affections will all be readily recognized by making a cystoscopic examination of the patient in the knee-breast position, through a simple cylindrical speculum. By this examination the cystitis will often be found to be well localized and in patches, which may be readily treated by direct topical applications; upon removing a foreign body, the cause of a cystitis, the pyuria disappears. Ulcers seen through the cystoscope may be treated with strong solutions of nitrate of silver, curetted, or cauterized. There are also a number of extra sources of pyuria, and these arise most frequently from tubal and ovarian abscesses breaking into the bladder, across the base of a broad ligament. If the pyuria does not come from the lower urinary tract it must then come from one of the ureters or kidneys; a telltale blush around a ureteral orifice often marks the side from which the pus issues. The author has found pyurias from the upper urinary tract proceeding from strictures of the ureter with a gonorrhœal, tuberculous, or other infection. The site of the stricture and the source of the pyuria may be readily located in these cases by passing a ureteral catheter—a metal one for the low strictures, or a flexible one for those above the pelvic brim. Renal pyurias are, after all, the commonest of all, and the author finds that these are most frequently caused either by a calculus in the pelvis of the kidney, or by a tuberculous pyelitis, or by a hydronephrosis which has become infected. Such pyurias are often the occasion of large amounts of pus in the urine, appearing either continuously or intermittently. By passing a renal catheter well up into the pelvis of the kidney, the pus may be evacuated and the pelvis washed out. If the pus is too thick to flow through the catheter, it may be thinned out by injecting a little fluid. By making an orderly investigation of this sort the pus is traced to its origin, and the source of the disease is discovered and treated and the cause eliminated, if possible, just as we would seek to investigate the source of the contamination of a body of water by taking a boat and travelling up the muddy stream until we had located the point at which it entered the main body and until we found that above this point the water was free from contamination. The methods proposed are safe in careful, practised hands.

The Early Diagnosis and Treatment of Cancer of the Uterus.—Dr. William H. Myers, of Fort Wayne, Ind., followed with a paper on this subject, in which he first dwelt upon the various theories respecting the nature of cancer, the last theory being that the disease was in its origin purely local. The author dealt with the elements of diagnosis, and gave statistical results following operations by different investigators of this disease. He considered the value of the microscope as an aid in the clinical diagnosis of cancer to have been overestimated, and cited several high authorities in support of his view. He closed by saying that the knife had become the emblem of gynæcological treatment. It had supplanted the curette, intra-uterine injections, caustic applications, the quaint conceits of the monkish craft, and the brutal records of the "cancer cure." The knife had become, in a surgical sense, the specific therapy of this particular disease.

Second Day—Afternoon Session.

A Case of Tetanus following a Surgical Operation.—Dr. F. D. Thompson, of Fort Worth, Tex., reported the case. The patient, a male, was twenty-one years of age, American, with good family history, for whom a radical operation was performed for extensive varicocele. Thorough asepsis was carried out. The result of the operation was excellent; yet on the morning of the ninth day after operative interference the patient could not open his mouth very well, and there was more or less stiffness about the muscles of the neck. A diagnosis of incipient tetanus was made, and the patient died in less than three days after the first appearance of the tetanic symptoms. The speaker could not account for the infection of this patient with the bacillus tetani.

At this juncture the president, Dr. George Ben Johnston, delivered his address. He selected for his subject—

The Prevalence of Specialism, and Who Shall be Specialists?—The tendency of the times was toward specialism in medicine. Specialism was desirable be-

cause it gave to the profession and the people the most intelligent consultants and the most skilled attendants the art of medicine could supply. He divided specialists into two kinds, the true and the pseudo-specialist. The former he defined as one specially distinguished for learning and skill in a given pursuit; the latter as one having merely a special occupation. He made very clear the difference between these varieties, for one reached the distinction of a specialist by reason of his training, experience, skill, and wisdom, whereas the other was made a specialist by the possession of a diploma, a doorplate and a "kit" of special instruments. The professional qualities of the true specialist he likened to a massive pyramid, the finished capstone of which constituted the specialty. This pyramid of experience, learning, and skill was a stable edifice, a pillar of strength which could not topple or reel. In the case of the pseudo-specialist this pyramid of learning was inverted. There was no base of a knowledge of detail, of general information, of professional attainments. The structure had no foundation in fact. It began with the specialty, and its growth spread as it ascended, overshadowing what was below, thus rendering it an unstable, top-heavy structure. The public had been improperly educated to the idea of specialism. In the public eye all specialists stood upon the same footing, possessing all the needful requirements to give the best service. The profession had misled the public and was responsible for this lack of discrimination on its part. Medical colleges should vigorously discourage the practice of recent graduates becoming specialists. Teachers should point out to them the error they were about to commit. They should counsel them. Colleges should recognize only the real specialists. Reform in the present system of specialism must be accomplished through the instrumentality of medical colleges and societies, and when they took the matter properly in hand the general profession and public would lend cordial support and the evil would perish.

Ovariotomy in the Aged.—Dr. A. M. Cartledge, of Louisville, Ky., read this paper. The patient upon whom the operation was performed was born October 29, 1816. Eighteen months before the speaker saw her an abdominal enlargement was noticed, followed shortly after by pressure symptoms. Latterly the gastric and digestive disturbances from pressure had been very troublesome. Emaciation and ovarian expression were appreciable, but not marked. Examination revealed the abdomen well filled with an encysted growth, which was diagnosticated as ovarian. Naturally the great age of the patient, eighty years seven months and fifteen days, made the decision as to operation a debatable one. However, an operation was deemed justifiable, urged, and consented to, and was done May 12, 1897. The ovarian cyst originated from the right ovary, was multilocular, and weighed about forty pounds with fluid and omentum. The operation was done in fourteen minutes. The patient sat up fourteen days after the operation, and left the infirmary on the seventeenth day thereafter. The author had operated seven times on women over sixty years.

Operative Treatment for Enlarged Prostate.—Dr. H. H. Grant, of Louisville, who contributed the paper, drew the following conclusions: (1) That in malignant disease any operative step except palliative suprapubic drainage, even if based on an error in diagnosis, is a serious mistake; (2) that in myomas, fibromas, and adenomas it is yet uncertain that good results will follow castration; and, furthermore, that such conditions render enucleation by the Alexander method very difficult and perhaps impracticable. Hence when interference resists catheterization and is not remedied by the permanent catheter, as suggested by Kane, suprapubic section with removal of the projecting portion, if practicable, or the permanent fistula of McGuire, is the wisest course. (3) In conditions including stone in the bladder, suppuration in the gland, and the suspicion of intravesical growths, exploration by the suprapubic method offers the best insight into the nature of the lesion, as well as the most hopeful prospect of relief. (4) Inasmuch as castration is unsatisfactory, and is less acceptable to men under sixty-five years of age than later, it appears that in the commonest form of enlargement, the chronic parenchymatous, to which the operation of Alexander is especially appropriate, will be best treated by this method, provided it appears practicable or necessary after section, which, if it bears out the promise of the present, will surely take a high place in the future, as the objections to it are almost *nil*, aside from the seeming gravity of the step.

Dr. James A. Goggans, of Alexander City, Ala., followed with remarks on empyema, and reported twenty cases.

Third Day—Morning Session.

Improved Technique in Operation for Intraligamentous Cyst.—Dr. Rufus B. Hall, of Cincinnati, after reviewing the literature on the subject, said he believed the mortality from operation for intraligamentous cyst was much higher than the statistics would lead one to believe. A large per cent. of the deaths were due to hemorrhage, either on the table or within a few hours after the patients were put to bed. He thought the operation proposed by him would save many lives, as it was practically bloodless. It was applicable to those cases in which the adhesions were very firm and the cyst could not be easily stripped from the pelvic floor. The operation he proposed is as follows: First tap the cyst and empty it. Ligate the ovarian artery on the tumor side at the pelvic border; ligate the ovarian artery on the opposite side, outside the healthy ovary; divide the broad ligament. Divide the peritoneum above the top of the bladder and push the bladder down. Ligate the uterine artery on the healthy side. Cut across the cervix and clamp or ligate the uterine artery on the tumor side. The blood supply is then cut off and the patient has not lost a drachm of blood. The capsule of the tumor can now be divided above the top of the bladder and at a suitable point behind, and the tumor enucleated from below upward with very much greater ease than from above downward, and with corresponding safety to the ureter, the rectum, and the iliac vessels. Close the peritoneum over the pelvic floor with a running suture of catgut. This method brings every part of the field of operation into view. The ureter can be seen, recognized, and pushed aside. The adhesions are separated along the line of cleavage instead of against it, as in the old method. Then followed the presentation of a specimen and the report of a case illustrating the operation and the class of cases to which it is especially applicable.

Dr. H. Tuholske, of St. Louis, read a lengthy and exhaustive paper on personal observations in abdominal surgery, in which he covered nearly every pathological condition known to the abdominal surgeon.

Symphyseotomy as Compared with Other Obstetric Operations.—This paper was read by Dr. George J. Engelmann, of St. Louis. The author illustrated his remarks by diagrammatic sketches. Symphyseotomy was not so attractive an operation as was Cæsarean section or the Porro operation, yet it was very successful as compared with the results of Cæsarean section. It was a successful all-around operation for the city and country. The mortality statistics of the different operations were given and compared. There

had been no trouble in union of the pubic bone after symphyseotomy. Quite a number of women had been delivered by a second symphyseotomy. There was no trouble in the locomotion of women so operated upon. A number of cases were on record of normal labors having followed symphyseotomy. The first symphyseotomy done in this country was by Dr. Williams, of Dennison, Tex. Dr. Engelmann showed what had been accomplished by symphyseotomy, and said that surgeons must be guided in a measure by that.

Plaster of Paris as a Universal Fracture Dressing was the title of a paper by Dr. John B. S. Davis, of Birmingham, Ala. The author said that less than three per cent. of the physicians who used plaster of Paris as a primary dressing cut the plaster at the time of applying it. The object of incising the plaster of Paris was to allow it to yield and at the same time fit the contour of the limb. For fractures of the shaft of the humerus, as elsewhere, he believed plaster of Paris was the best dressing.

The following officers were elected for the ensuing year: *President*, Dr. Richard Douglas, Nashville, Tenn.; *Vice-Presidents*, Dr. H. H. Mudd, of St. Louis, Mo., and Dr. James A. Goggans, Alexander City, Ala.; *Secretary*, Dr. W. E. B. Davis, Birmingham, Ala; *Treasurer*, Dr. A. M. Cartledge, Louisville, Ky.

Place of next meeting, Memphis, Tenn. Time, second Tuesday in November, 1898.

NEW YORK ACADEMY OF MEDICINE.

Anniversary Meeting, November 18, 1897.

Edward G. Janeway, M.D., President.

Sanitary Science, the Medical Profession, and the Public.—Dr. Herman M. Biggs delivered the anniversary discourse, which was on the above topic. He said that while much had been done to reduce the mortality from preventable disease, fully one-third was still due to this cause. The importance of proper sanitation was well shown in 1892, by the deadening effect on commerce resulting from a knowledge that a few cases of Asiatic cholera had reached this harbor and that half a dozen cases had gotten into this city. Another example, fresh in our minds, was the yellow-fever epidemic in the South. An expenditure of one-tenth of the sum lost through the influence of this insignificant epidemic on the business of the country would be ample to render the introduction of yellow fever in the future wellnigh impossible. With all its terrors in the time preceding vaccination, smallpox was scarcely to be so much dreaded as was tuberculosis to-day. Tuberculosis is not dramatic in appearance or in course, and it is so familiar to all of us that but little attention is paid to it. It is on this account that its ravages still continue, yet no disease is better understood and none is more preventable by simple measures. After a careful and prolonged study of the subject, it was his deliberate conviction that the time was not far distant when, by proper sanitary supervision, the deaths from tuberculosis would be reduced to one-third the present rate. About two hundred years ago, of every thousand persons in the population of England, fifty to eighty died each year, and the average duration of life of each person born was not more than fifteen or eighteen years. How different from the present death-rate of seventeen per thousand! In contagious diseases we were as yet unable to adopt measures which would prevent a susceptible individual from contracting these diseases, but simple precautions would rob the communicable diseases of their terrors. Diphtheria had been increasing gradually in our large cities until the introduction of diphtheria antitoxin in 1894. Since then it had steadily diminished, until in Berlin the mortality had been reduced to one-fourth. Whooping-cough destroyed annually in New York City unnecessarily many hundred lives—more than were sacrificed by smallpox and cholera together. Great difficulty was experienced in controlling diseases of this kind in the tenement districts. Dr. Hill, of Birmingham, had shown in a very striking way how the ravages of scarlatina might be controlled by compulsory notification, and by the removal of such patients to the hospital. There had been many theoretical objections to this plan, but they had all been refuted by practical experience. Many of the victories of sanitary science, Dr. Biggs said, had been won through preaching and practising the gospel of cleanliness. The average annual death rate for the ten-year period ending 1893 was about twenty-six per one thousand of population, yet in the present year the death rate was a fraction over nineteen—a reduction of over twenty-five per cent. This was due to no special innovations, such as the introduction of an improved water supply, but to attention to many small matters and to the education of the people. Still it should not be believed that the limit had yet been reached; there was no inherent reason why the death rate in this city should not be reduced to fourteen per thousand, or even less, and the average duration of human life should be increased to fifty years or more.

The work done by the New York board of health was next considered more in detail. The speaker said that the health board had assumed that it was its duty to give such specific and general information regarding infectious diseases as could be furnished by a thoroughly equipped bacteriological laboratory. The board of health of New York had been the first to set this example, and, while it had been followed in many other cities, in no other place had the broad principle upon which this practice was founded been so liberally and consistently carried out. Medical practitioners sometimes forgot that the health board legislated for the whole city, and not for special sections or districts of the city, and that special legislation was generally objectionable. Much greater liberty was allowed in private houses than in tenements, because of the greatly diminished risk. It had always been the policy of the health officers not to interfere in private houses in matters that concerned the members of the family only, and which did not affect the outside public. The greatest cause of misunderstanding and complaint arose from the fact that, with but rare exceptions, physicians could not be induced carefully to read the circulars issued by the health department. He felt that, as a whole, the work of the health department in recent years had deserved and had received the commendation of the medical profession of the city. The interests of the individual and of the community were often apparently divergent, as in the restriction of noxious trades and the regulations affecting tenement houses. The primary object of the sanitary authorities was to secure for all proper air, light, water, and wholesome food. No other city in the world had a better and more wholesome water supply. It was true that at certain seasons of the year the water was unpleasant to the eye and to the taste, but this was due to suspended vegetable matter, which had not yet been shown to be deleterious to health. The greatest value of the system of compulsory notification of contagious diseases is that it allows the sanitary authorites to devise and carry out a scientific system of control. It did not seem to be very generally understood, even in the medical profession, that different diseases required different methods of control. The knowledge required for the intelligent discharge of the duties of a public-health officer must be broad,

exact, and entirely different from that obtainable in any existing institution. There are no men to be found in this country with an extensive knowledge of public medicine—not even in the large cities. The great sanitary need of the time is the establishment of training schools in public health, and that health officers should have diplomas representing the possession of an adequate knowledge of public medicine. The tenure of office should be longer and more secure, and the compensation should be large. In addition to this, there should be a national supervision, exercised by a properly constituted national board of health, the powers of which should be similar to those of the local government board of Great Britain. By such means we could hope in time to obtain more nearly ideal conditions throughout the whole country.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

A DEBATE ON TYPHOID—PROGRESS OF THE EPIDEMICS—BILHARZIA HÆMATOBIUM—SIR HENRY BURDETT, HIS SPEECH ON HOSPITALS, HIS CAREER—MR. HORSLEY—JUBILEE HOSPITAL AND "TRUTH."

London, November [illegible]

The Royal Medical and Chirurgical Society's next meeting is to be devoted to a discussion on the prevention of typhoid fever. This is very opportune, considering the serious epidemics which have recently occurred. The discussion is to be opened by Dr. Vivian Poore, and it may be anticipated that some of our leading authorities will join in it. If no new advance be made known, our present knowledge will at least be epitomized and a stimulus given to further efforts. I must add that the meeting will not be confined to fellows of the society, but visitors are cordially invited and will be introduced by the secretaries on the evening of the debate, which is fixed for the 23d of this month. As to the recent outbreaks a few facts of the week may be added.

Maidstone is still exciting the sympathy of the nation on account of its affliction, and large sums are being subscribed. It is hoped, however, that the worst has passed. At a meeting of the guardians yesterday it was decided to close the relief stations on Sunday next, except the central one. Four or five fresh cases of typhoid have occurred daily this week, bringing the total up to 1,828 with 129 deaths. It was reported further that diphtheria had been imported into one district, 28 cases having occurred.

At King's Lynn there has been a fall in the typhoid cases since Tuesday, from 14 to 15 daily down to 4 or 5. Yesterday the M. O. H. reported 5 as occurring in the previous twenty-four hours, making a total of 380, with 26 deaths. It is said, however, that the disease has spread beyond the town limits. Dr. St. George Mivart, the recently appointed government inspector, has been down to advise the authorities.

The Clifton outbreak has been traced to a definite cause, and the Bristol town council has been informed that there is no extension, but seven deaths have already occurred. From Belfast I hear of three more deaths in dangerous proximity to the water reservoirs.

At the Pathological Society meeting Mr. C. G. Seligmann exhibited some live ova of Bilharzia hæmatobium which he had obtained from the urine of a soldier recently returned from Mashonaland. These ova, he said, were constantly passed from both the bladder and rectum. Those from the bladder had terminal spines only, but those from the rectum had also lateral spines. He found the ova could be hatched in urine (a surprise for those who have pooh-poohed the fact), though not so quickly as in water of the same temperature. It is very interesting to watch the hatching and the amœba-like changes in the shape of the embryo.

Sir Henry Burdett has incurred the anger of many general practitioners by his speech at the meeting on hospital reform, in which he attributed a degree of incompetency to some of their body. Called to account for this by a subsequent speaker, he explained that he meant only that many would be greatly helped if they went to hospitals and attended post-graduate classes. This explanation does not amount to a repudiation of the sense in which his words were understood, and *The Lancet*, very naturally, defended the general practitioners from the insinuations of a non-medical man. Sir Henry retorts that he has passed all but the final, and if need be to defend his position he may devote a few months to passing and then challenge the editor to stand against him as candidate for the General Medical Council. This would be amusing as a novel sort of controversy on hospital abuse, and no one doubts but Sir Henry's energy would carry him far. Moreover, he is just retiring from the position he has so long held on the Stock Exchange, where, as secretary of the share and loan department, he has for years been a most important and hard-working person. That post was gained by his success in reorganizing the financial affairs of the Dreadnought Hospital, so that his whole life has been connected with hospital affairs, in which he has always displayed the keenest interest. I lately mentioned his "Hospitals and Charities," which occupies almost an official position. He is on the councils of the Prince of Wales' Fund, the Sunday Fund, and a number of hospitals. It is chiefly for his work of this kind that he received his K.C.B. He is the editor and proprietor of *The Hospital*, a journal devoted to management and nursing. He founded the Royal Nurses' Pension Fund, which is a very important organization, and has a finger in the pie of charities and hospitals too numerous to mention. It is easy, therefore, to see that, whatever his views, he is a man to be reckoned with. His knowledge of every sort of finance is in itself a power. He is no doubt conscious of this and perhaps a little too ready to force his opinions on others, but I think he is a good friend to hospitals and by no means unaware of the difficulties of professional life. Zeal and hasty speech often go together, and there may be no permanent cause of offence because Sir Henry's earnestness and self-consciousness led him to assert himself—and incidentally depreciate the qualified G. P. I do not suppose offence was intended, but the speech was unfortunate, and accentuates the objections which many feel to some of his views on hospital management. He is now about to publish a nursing-directory.

Professor Horsley's election to the medical council necessitated his resignation of the presidency of the Defence Union, since that body prosecutes before the council where Mr. Horsley will exercise judicial functions. One of the vice-presidents of the union, Dr. W. S. A. Griffith, succeeds Mr. Horsley, no easy task, and I hope he may be as successful.

Mr. Horsley has just been appointed by the crown as the successor of the late Mr. Walter Rivington in the senate of the University of London.

The war waged by *Truth* against the Jubilee Hospital is concluded, Mr. Labouchere having laid down his arms. It is rather an unexpected move for his paper, but since he so discredited himself before the African committee people are paying less attention to his *Truth*. The Jubilee Hospital does not gain the confidence of the profession. It is regarded as an unnecessary institution, and its very position shows that the neighborhood is not one from which patients should come.

THE TREATMENT OF SYMPTOMS.

To the Editor of the Medical Record.

Sir: Dr. Seth Mereness, in the Medical Record of October 16th, says that every physician knows that danger to life is not at all proportionate to severity of symptoms. I will assert that a large majority of deaths, except sudden deaths, are preceded by severe symptoms. I believe that every physician knows that a case of pneumonia with severe symptoms has a worse prognosis than one with mild symptoms. A mild case of pneumonia will destroy life in the aged, but it is loss of vitality more than the pneumonia that kills. If, as he says, it has never been demonstrated that combating symptoms ever contributed to or effected a cure, then nothing has ever been demonstrated, human experience is without value, and cause has no relation to effect.

I have seen the mortality of typhoid fever reduced to two per cent. by the judicious use of cathartics, antiseptics, and antipyretics. Baths may do as well, but the same objections must hold with this writer, for they combat symptoms—are given for that purpose, as the prognosis is improved thereby. Baths, however, cannot be used with the necessary thoroughness in private practice.

While the article contains much that is instructive, such doctrine here alluded to violates all the teaching I have ever seen in the Medical Record and contradicts the opinions of thousands of the most intelligent men of the age. I am certain that the relief of symptoms, whether by hygiene, hydrotherapy, drugs, or any other agency, generally effects improvement and tends to a cure. I am certain, too, that in hopeless cases the relief of symptom, by whatever means, gives great comfort, reduces suffering, and in many instances prolongs life. O. S. Ensign, M.D.

[illegible]

"WHAT MUST WE DO TO BE SAVED?"

[illegible] Editor of the Medical Record.

Sir: From the standpoint of a poor country physician, Dr. Hillis has greatly weakened what otherwise would have been an admirable paper—"What Must We Do to be Saved?"—by an uncalled-for and an unjustifiable attack on the government of the United States and by an equally unjustifiable attack on the rich. The latter, though embodied in a bit of beautiful rhetoric, is so grossly misleading that it should not be allowed to pass without a protest. F. Powers, M.D.

[illegible]

A MEDICAL MISSIONARY WANTED IN CEYLON.

[illegible] Editor of the Medical Record.

Sir: In connection with the Woman's Medical Mission in Jaffua, Ceylon, there is an opening for a lady doctor to be the associate of Dr. Isabella Curr, who went to Ceylon last year.

The five large new buildings of the Woman's Medical Mission, viz., the mission house, the nurses' training-school, the medical and surgical wards, and the dispensary, together with the necessary outbuildings, are completed and ready for use.

The wards provide accommodation for forty in-patients. The training-school will accommodate eighteen nurses and a matron.

Rev. T. B. Scott, M.D., and Mrs. T. B. Scott, M.D., who are in charge of the general medical mission near by, will act as consulting physicians.

A population of three hundred thousand people in this province is accessible. The climate is healthful. The outlook for the work is promising. Ten families of American and British missionaries reside in the province. There are three thousand native Christians, members of mission churches, and fifteen thousand children and youths in mission schools.

As the training of educated Christian young women as nurses will be an important feature of the work, we are desirious of finding, to fill this vacancy, a medical lady who has had a nurse's training, or one who would be willing, before going out, to take some special instruction in nursing. She should be possessed of a true missionary spirit. We should be glad to hear from any one who is fully qualified, or who is about to graduate the coming spring.

Mary and Margaret W. Leitch.

[illegible] Street, R[illegible], M[illegible]

THE IMPROVEMENT OF GENERAL ANÆSTHESIA.

To the Editor of the Medical Record.

Sir: Since my return to the city on September 15, 1897, the time of commencing my fall service at the German Hospital, I have in all operations requiring general narcosis made use of the anæsthetic mixture proposed by Dr. C. L. Schleich, of Berlin, in 1895, and strongly recommended by him again this year. I have availed myself of the advantages of this mixture also in all my private operations done during this period.

I have been personally so favorably impressed with the working of the new mixture, as have also been the members of the house staff of the German Hospital and all those colleagues who witnessed my operations in hospital and private practice, that I almost feel it my duty to give this preliminary report, which is based on very nearly one hundred cases of my own—certainly a sufficiently large number to permit drawing conclusions. More patients than the comparatively few coming under the care of a single man should derive the benefits of this anæsthetic as soon as possible. I am convinced that whoever has tried Schleich's anæsthetic mixture will not return to the ordinary ether or chloroform narcosis.

Schleich seems to have solved the problem of making general anæsthesia a safe procedure—as far as this ever can be done—by experimenting on a physical, not on a chemical basis; viz., by adapting the boiling-point of the narcotic to the temperature of the body.

He uses a mixture of three drugs, viz., chloroform, ether, and petroleum ether (benzin), the latter of the boiling-point of 60°–65° C. (140°–148° F.).

Formula I. Boiling-point = 100.4° F. (38° C.).—Chloroform, 45 c.c. = 1½ oz.; petroleum ether, 15 c.c. = ½ oz.; sulphuric ether, 180 c.c. = 6 oz. It is used for narcosis in operations of short duration.

Formula II. Boiling-point = 104° F. (40° C.).—Chloroform, 45 c.c. = 1½ oz.; petroleum ether, 15 c.c. = ½ oz.; sulphuric ether, 150 c.c. = 5 oz. It is used for operations lasting a little longer.

Formula III. Boiling-point = 107.6° F. (42° C.).—Chloroform, 30 c.c. = 1 oz.; petroleum ether, 15 c.c. = ½ oz.; sulphuric ether, 80 c.c. = 2⅔ oz. It is used for major operations.

The measurement is made by volume, not by weight. In a chemical sense it is a real solution. Petroleum ether of the required boiling-point, 140°–148° F., can be had of any first-class chemist. Personally I obtained my specimens from Charles Cooper & Co., of this city. I have induced a number of druggists throughout the city to keep a stock of this ether.

Schleich recommends a special mask for the administration of his mixture. Up to date I have used, to my entire satisfaction, the ordinary ether mask (paper

and towel); often also that used for chloroform anæsthesia. A few days ago I received Schleich's mask from Berlin, and shall now test the merits claimed for the same.

The improvement of the anæsthesia with the help of this mixture is very great in my opinion. I shall here mention only a few points:

We miss the frequently occurring cyanosis, the salivation, the accumulation of mucus in the trachea during the administration of the anæsthetic (ether); we do not meet with bronchitis or broncho-pneumonia afterward. As compared with chloroform, the influence of the mixture upon the heart's action is by far less marked; we have given it repeatedly in cases of heart disease. There are a great many other advantages, to enumerate which here would lead me too far. In a paper to be read before the next meeting of the New York County Medical Society, on December 27th, I shall give a detailed report of my experience.

WILLY MEYER, M.D.

November 26, 1897.

FINES FOR ILLEGAL PRACTICES.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: The New York *Sun* of November 17, 1897, noticing the fine of $150 imposed on Finney, a druggist, for illegally practising medicine, said: "This is the heaviest fine yet imposed in special sessions for this offence."

In making this statement *The Sun* was misinformed. The heaviest fine imposed since the County Society began to inforce the medical law in 1881 was that of $500, inflicted on January 9, 1889, in special sessions, upon one Bourquteet, "private physician to the Bey of Tunis," for a first offence. That same court also imposed fines of $250 upon Brown, August 12, 1887; Strosser, June 4, 1891; Goldsmith, October 31, 1892; and De Samora, December 8, 1892; also fines of $200 upon Eckardt twice; Kraft, Tochterman, Montague, Utzsinger, Michael, Morrel, La Roche, St. Leon, and Raffel; also fines of $150 upon Weinstein, Guggenheim, Libertino, Hamecher, Pool, Koehler, and Rosa. Thus there have been twenty-three cases in which a fine of $150 or more has been imposed by that court.

The court of special sessions also imposed on October 4, 1897, prior to Finney's case, a fine of $150 for the illegal practice of dentistry by one Diaz in the "Boston Dental Parlors," and in so doing expressed approval of the dental law and the judicious manner in which the State Dental Society sought to have it inforced. This the MEDICAL RECORD noted, I think, at the time.

The largest fines inflicted under the dental act have been two of $500 each upon the notorious Kahn and Jordan, whom the State Dental Society caused to be convicted in 1896 for unlawfully affixing the letters M.D. to their names.

All of the above fines, except those in the dental cases, were imposed prior to December 15, 1893; and it may therefore be possible that no fine of $150 has been imposed in special sessions since then.

The last report of counsel published by the County Society, that of 1896, shows by a tabulation that since December 15, 1893, five fines of $250 and one of $150 have been imposed, but in what court does not appear: however, from what is said of the court of special sessions in the body of that report, and the further fact that *The Sun* presumably derived its statement from some one it supposed was authority, one may fairly assume that those fines were imposed in general sessions.

It is a curious result of the various amendments of the laws that—dentistry and the practice of medicine being both regulated by chapter 5 of the general laws, and the former being a specialty of the latter—the misdemeanor of unlawful dental practice must be punished by a fine of not less than $50, and may be punished by a fine of $500; while the offence of unlicensed medical practice cannot be punished by a fine of more than $250, and may be punished by as small a fine as the court sees fit to impose, which in one instance was $10 and in three cases $25. Thus for purposes of punishment, assuming dentistry to be a specialty of medicine, the part is greater than the whole—Aristotle to the contrary notwithstanding.

W. A. PURRINGTON, M.D.

"SHOULD MINISTERS PAY DOCTORS?"

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In answer to the query, "Should Ministers Pay Doctors?" I say, "Ay, verily." For twenty-five years your humble servant has been pouring physic down and pumping other medicines up into the ministers, their wives, and other members of the family, free of charge and sometimes without even a thank you. Why should we do it? Are not the ministers as well paid, as well fed and clothed—house rent very little, and often free? When they travel, 'tis either D.H. or half-fare.

Don't we pay them when they marry us? Don't we tip them when they baptize our children? Don't we give them a few ducats when we die?

They do not have the expense of keeping a horse or two, nor of the wear and tear of carriages, cutters, harness, etc. No getting up "o' nights" for a drive of forty miles in the country, with the wind howling at a speed of forty miles an hour and the mercury forty below zero—furnish the medicine free—all for the love of your fellow-man. Not a cent in sight, but we must go—*bon gré, mal gré*—or we are heartless, cold-blooded, cruel.

Ministers sometimes show their gratitude, as when I attended one through a severe sickness, and during his convalescence he advised one of my good pay patients to try a rival M.D.; said he would "get him on his legs quicker." This minister, however, was an exceptionally mean one. As a rule, they are jolly good fellows; but I say, let them pay and then they will better appreciate us.

H. R. PORTER, M.D.

[illegible] N. D., November 15, 1897.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 27, 1897:

	Cases.	Deaths.
Tuberculosis	102	57
Typhoid fever	26	5
Scarlet fever	127	6
Cerebro-spinal meningitis	0	3
Measles	227	1
Diphtheria	103	15
Laryngeal diphtheria (croup)	7	2
Chicken-pox	21	

Bacteria in Ink.—Septicæmia following a pen scratch is explained by Marpmann, of Leipzig, on the theory of the constant presence in most inks of saprophytes, bacteria, and micrococci. A bacillus was cultivated and found fatal to mice.

Medical Record

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Original Articles.

A MODIFIED INCISION AT THE OUTER BORDER OF THE RECTUS MUSCLE FOR APPENDICITIS.

BY FRED. KAMMERER, M.D.,

AT the meeting of the New York Surgical Society on March 24, 1897,[1] I showed two patients upon whom I had operated for appendicitis in the declining stage of an acute attack by a method the principle of which as applied to appendicectomy was, I think, new. Since then I have had occasion to operate in only two other cases, both during the interval, by the same method.

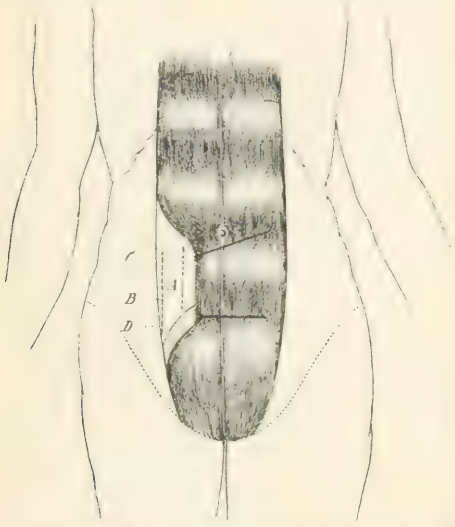
There can be no question that even very small incisions, carried in one plane through the entire abdominal wall, will occasionally lead to the formation of hernia later on. The size of the incision through the skin is irrelevant in this respect. The damage to the muscular tissues and fasciæ is responsible for the later development of a hernia, and it is well to remember in this connection that a good deal of damage can be done to the same even through a skin incision of only one or two inches. Herniæ were of frequent occurrence after operations for appendicitis when the old incision at the outer border of the rectus muscle was universally practised, before McBurney published his method of intermuscular separations. My own experience with this method is limited to a few cases, but we may gather from the reports of others that it has taught us to avoid herniæ with almost absolute certainty. To-day I believe that the same assertion can be made of the modified incision at the outer border of the rectus which I demonstrated at the meeting above referred to. I have now operated six times according to this plan. Two of the patients were operated upon in the summer of 1895. In one case suppuration occured, and although, after some delay, the patient was discharged with his wound closed, the integrity of the abdominal wall may have become impaired. In the other case the wound healed by first intention, but I have not been able at present, after a lapse of two years, to find the patient again, although I have made diligent search for him. The other four cases have come under my observation this year, and seem to hold out promise of permanent restoration of the abdominal wall with very little disfiguration. The method and the cases are the following:

Method.—Before administering the anæsthetic the patient is requested to raise his body from the operating-table; in other words, to contract his recti muscles, so that the outer border of the right rectus may be accurately determined. I have found a very marked difference in the width of this muscle in different individuals, and in making only a small incision in the skin it is essential to locate the outer border at the correct place. The incision should be about two inches in length, and the line drawn from the superior anterior spine to the umbilicus should divide it in such a way that somewhat more of it lies below than above that line. The skin, subcutaneous fat, and aponeurosis of the external oblique are divided. The anterior sheath of the rectus muscle is now opened, the operator cutting in the same direction a little to the inside of the right linea semilunaris and exposing the upper and outer border of the rectus muscle itself. It is important not to place this incision too far in an outward direction, in order not to incise the linea semilunaris and thus impair the strength of the abdominal wall. The rectus muscle is now drawn toward the median line and dissected away from its posterior sheath for about one inch or a little less. In doing this we come in contact with the epigastric vessels and a branch of the ileo-hypogastric nerve, which latter perforates the sheath and passes into the rectus muscle, generally in the upper half of the incision. Ligation and division of the vessels may be practised, if the latter are at all in the way. I do not see any disadvantage in such a course, as we often ligate vessels of the same size in other operations without the slightest hesitation. Section of the branch of the ileo-hypogastric nerve is, however, a more serious matter. In the first two cases reported below I divided the nerve. The result of this was atrophy of that part of the rectus muscle which is supplied by it. Five or six weeks after the operation a very marked wasting of the muscle was apparent when the patients called into action both their recti. The atrophy was confined to only a small part of the muscle, lying very likely between the two nearest tendinous intersections of the latter, immediately below and to the right of the umbilicus. No other portions of the muscle were involved, they being evidently supplied by other branches, such as the anterior branches of the lower intercostal nerves. In my last two cases I have, therefore, avoided section of the nerve. This is easily accomplished by hooking it with a blunt curved retractor and pulling it into the upper angle of the incision. The dissection of the muscle from its posterior sheath is the work of a few moments, and is more easily accomplished when the abdominal walls are tense than when we are dealing with lax and flabby abdominal muscles. The rectus muscle is now drawn well toward the median line by the aid of two sharp retractors, and an incision (*C*) is carried through the posterior sheath, the transverse fascia, and the peritoneum, parallel to the original incision and a little shorter than the same (about one and a half inches long). The cut edge of the peritoneum toward the median line is secured by the application of one or two artery clamps. The flap of peritoneum, fascia, and sheath (*A*), on the outside edge of the peritoneal incision, is relieved of all tension as soon as the abdominal cavity is opened, and when a blunt retractor is inserted into the incision and traction made in an outward direction, to expose the region of the appendix, it offers very little, if any, additional resistance to that of the entire abdominal wall at the site of the original incision through the skin (*B*). This is a point I wish to emphasize, as the discussion, following the presentation of my patients at the meeting I have previously referred to, made it apparent that some of the gentlemen present were in-

[1] Annals of Surgery, August, 1897, vol. xxvi.

clined to the belief that the site of the incision might be too near the median line. As already stated, I cannot find that this overhanging flap of sheath, fascia, and peritoneum (*A*) offers any further obstacle to exposure of the region of the appendix than is met with when the incision is carried at the outer border of the rectus straight into the abdominal cavity. The question is simply whether or not the outer border of the rectus is a convenient location for entering the abdomen and searching for the appendix. I believe it is as good as any. No particular location can be the best in every case.

After the appendix has been found and removed, the incision through the posterior sheath, fascia, and peritoneum is closed by a running catgut suture (I use formalin catgut), to accomplish which the rectus must be drawn well aside. Thereupon the latter is released from the retractors and, falling into place, is fastened by a few thin catgut sutures at its outer edge



A, Layer of posterior sheath of rectus, transversalis fascia, and peritoneum.
B, Incision through the same.
C, Incision through posterior sheath of rectus, fascia, and peritoneum.
D, Semilunar fold of Douglas.

in its original situation. The incision in the anterior sheath of the muscle is now closed by individual sutures of catgut, and finally the aponeurosis of the external oblique and the skin are dealt with in the same manner, separately.

Cases.—I omit the first two cases, operated upon during the summer of 1895, as I have not been able to hunt up the patients this year, when I again took up the operation. I shall say, however, that I experienced no difficulty in finding and removing the appendix through the incision.

Case I.—G. H——, male, aged twenty-two years. First attack. Seen at the expiration of a week, with some resistance and pain on pressure still present in right iliac fossa; also a distinct infiltration on deep pressure.

Operation on January 20, 1897: Appendix bound down by adhesions, pointing in an upward and backward direction, its tip lying near posterior brim of pelvis. Adhesions broken up and appendix removed; small perforation found at tip. On section, extended gangrene of mucosa; two fæcal concretions in appendix. Suture as above described; primary union.

Case II.—J. S——, male, aged forty-two years. Recurrent appendicitis for past ten years; last attack about a week previous; very distinct induration in iliac region about one-fourth of an inch wide and one and one-half inches long, at outer border of rectus.

Operation on February 3, 1897: Appendix found lying very superficially, corresponding to infiltration felt before opening of abdominal cavity; easily removed; much swollen, not perforated, and containing no concretions; beginning gangrene of mucosa well marked at tip of appendix. Suture; primary union.

In the above two cases marked partial atrophy of the rectus muscle developed, as the result of section of the ileo-hypogastric branch. In the second case reported, which I had occasion to examine during September, I have, however, found complete restitution to normal size and activity, although no examination was made with electric currents. No hernia has developed from this partial temporary paralysis. Nevertheless, I think it wiser to avoid its occurrence, as in the following two cases:

Case III.—M. S——, female, married, aged twenty-seven years. Many attacks lately; last attack a few days ago, lasting only a day or two with tenderness at McBurney's point. At time of operation no physical signs, but slight pain on deep pressure.

Operation, end of March, 1897: Usual incision; rectus muscle very broad, its outer border only one inch from superior anterior spine; some difficulty experienced in dissecting away the posterior surface of the muscle from its sheath, owing to great laxity of muscular tissue. The incision, in this instance, having been unintentionally placed at a higher level, the branch of the ileo-hypogastric was found in the lower half of the incision, and it was therefore drawn into the lower angle of the wound by a blunt retractor and not divided. Ligation of epigastric vessels unnecessary; appendix three and one-half inches long, buried among intestines, slightly adherent, easily found and removed; its walls very much thickened; no perforation. Suture; primary union.

September 20, 1897: No indication of hernia; at cicatrix skin freely movable over subcutaneous tissues.

Case IV.—R. J——, male, aged seventeen years. About a dozen attacks during 1897, mostly mild in character, but a few accompanied by pain and high temperatures, necessitating rest in bed for several weeks; slight sensitiveness at McBurney's point on deep pressure; no physical signs.

Operation, September 10, 1897: Incision two inches long; muscle easily separated from sheath; nerve branch, across upper part of wound, easily held out of harm's way by retractor; appendix on inner side of colon, kinked and firmly adherent to its own mesentery; blunt separation of adhesions somewhat difficult during removal of appendix; end of appendix obliterated for about three-fourths of an inch, the remaining portion, to its base, much distended and filled with pus and two fæcal concretions; a tight stricture found at the base. Suture as usual; primary union.

Further Remarks.—In a number of dissections upon the cadaver I have found the semilunar fold of Douglas, which marks the inferior termination of the posterior sheath of the rectus muscle, at a distance of about one inch from the nearest point of the line drawn from the superior anterior spine to the umbilicus. (I have tried to demonstrate this in the figure, although at the operation the rectus is never displaced to such an extent as to disclose the semilunar fold.) It is very easy after removal of the rectus, with the abdomen unopened, to demonstrate the weakness of what remains of the abdominal wall between the semilunar fold and the symphysis by pressure upon the abdomen, which will cause a bulging of the intestines at that point. But even with due regard for these anatomical facts, I do-

not think that an incision carried beyond the semilunar fold can lead to the formation of hernia, if primary union is obtained and the rectus abdominis fully covers the sutured incision into the posterior sheath. On the other hand, there is no necessity for carrying the incision lower than the semilunar fold.

The modification of the incision at the outer border of the rectus is suited for cases during the interval. Although the first case reported was operated upon by this method, when the products of acute inflammation and perhaps the infectious agents themselves were still present in the tissues, and the case did well, I think it might have been wise to establish drainage, if only for a short period. But in that event I should have employed McBurney's incision for suppurative cases, an inch to the inside of the anterior superior spine. When suppuration is well established, I feel as if I would rather err on the safe side. In many such cases at the critical moment we need as large an opening as we can get for efficient drainage. I venture to believe that we all are, now and then, agreeably or disagreeably surprised at the condition of affairs revealed after abdominal section in cases of acute appendicitis. With this uncertainty I should hesitate to employ any other than a free incision in suppurative cases, although we have lately heard of splendid results even in such cases by McBurney's blunt dissection.

Some points in favor of the modified incision at the border of the rectus are the simplicity of the procedure, the possibility of doing the operation with one assistant, the technical advantage when operating on persons with well-developed abdominal muscles. I have practised the method without any blunt dissection, if that be worth mentioning.

NOTE.—A few days before receiving the proofsheets of this article, my attention was called to a short communication by Ad. Jalaguier, surgeon to the Hôpital Trousseau, in Paris, in which the author describes an operation very similar to the one I have just described. He further states that he has employed the same in some twelve cases with very satisfactory results. Whether or not his first operation was done before my own (summer, 1895) I cannot say, as he gives no details of his cases. Even if we have both employed the method independently of one another, I regret that I have been guilty of an oversight in reference to Jalaguier's publication. He divides the skin and the aponeurosis of the external oblique at the outer border of the rectus, and then dissects the aponeurosis on the inner side of this incision for some distance from the anterior sheath of the muscle. The latter (the sheath) is then divided about one centimetre to the inside of the border of the rectus, exposing the muscle. I have not insisted on this point, but simply divide the anterior sheath somewhat to the inside of the right linea semilunaris. In all other particulars the methods are exactly alike. As all the layers are finally sutured separately, the planes in which the lines of suture lie in Jalaguier's operation are more distant from one another than in mine. I think, however, that the main support is given to the abdominal wall by a firm union of the rectus muscle with the sutured incision in the posterior sheath. Jalaguier merely mentions the nerve branch passing within the line of incision into the rectus, and I assume that he has always been able to avoid cutting it. It is certainly entitled to the full attention of the surgeon. He has recommended the operation more especially in children with thin and pliant abdominal walls, and he prefers "*l'incision ancienne*" in adults with well-developed and rigid muscles. I rather like to operate by the method on patients with a well-marked rectus abdominis muscle.

Phimosis as a Factor in the Causation of Hernia.—It is said that inguinal hernia often arises in consequence of the straining efforts of the child. This may be true in some infants who have a patent processus vaginalis, but it certainly does not very often occur when these peritoneal prolongations have become obliterated; and, moreover, it must be freely admitted that a very large number of cases of aggravated phimosis are not the subjects of hernia. Thus, although the condition may play a part in the production of hernia, it is probably but rarely the sole factor.—ECCLES, *The Hospital*, April 24th.

THE CLINICAL VALUE AND CHEMICAL RESULTS OF USING PROFESSOR GAERTNER'S MOTHER MILK IN CHILDREN.

BY LOUIS FISCHER, M.D.,

PROFESSOR OF DISEASES OF CHILDREN IN NEW YORK CLINICAL SCHOOL OF MEDICINE; ATTENDING PHYSICIAN TO THE CHILDREN'S DEPARTMENT OF GERMAN DISPENSARY, TO THE WEST SIDE GERMAN DISPENSARY, TO THE MESSIAH HOME FOR CHILDREN, CONSULTING PHYSICIAN, DEPARTMENT OF CHILDREN, TO THE UNITED HEBREW CHARITIES,

AND

HERMAN POOLE, F.C.S.,

NEW YORK.

DURING the last two years a new infant food has been given great prominence in European medical literature. This new factor in the problem of infant feeding is the mother milk of Professor Gaertner, of the University of Vienna. Its *début* before the profession was made in an article by Gaertner in the *Therapeutische Wochenschrift*, May 5, 1895. A few months before, January, 1895, Gaertner, in an address before the Vienna Scientific Society, explained the mode of preparation and the results obtained with his new modification of cow's milk, for such the mother milk of Gaertner really is. Professor Gaertner, in the preparation of his food, has aimed to overcome what has been the great difficulty in infant feeding—namely, to reduce the excess of casein by a scientific process without the addition of chemicals.

To achieve this result he employs a machine called a separator or Pfanhauser centrifuge, which makes four thousand or eight thousand revolutions per minute. The apparatus consists essentially of a drum of steel, which revolves on its axis. This drum is filled with equal parts of fresh cow's milk and sterilized water. The mixture contains approximately the same amount of casein as human milk, for cow's milk undiluted contains about twice as much casein as human milk. The mixture is next poured into the centrifuge and the speed of the drum is carefully regulated, so as to separate the mixture contained therein into (1) a creamy (fatty) milk, and (2) a skimmed milk. The two portions so separated are then led off separately by suitable openings in the centrifuge.

The analysis of each of these portions shows that the creamy milk has the same quantity of fat as is found in human milk, while about two per cent. of the casein is contained in the skim milk, and the remainder, about 1.7 per cent., remains in the creamy milk. The chemical composition of fat milk is shown in the following table:

	Proteid.	Fat.	Sugar.	Ash.
Fat milk	1.76	3–3.5	2.5	0.35
Human milk	1.03	3.5	7.03	0.21
Cow's milk diluted with one-half water	1.76	1.6	2.5	0.35

If, now, three or four grams of milk sugar be added to every one hundred cubic centimetres of fat milk, the percentage of sugar is brought up to the level of sugar in human milk. This addition is made before sterilizing. The fat milk has the advantage over the diluted milk of having "a higher percentage of fat," and also it curdles more slowly than diluted milk and the curd forms a more flocculent precipitate.

According to Escherich the following amounts should be used at different ages of infancy, feeding every two to four hours:

Infants under two weeks,	500 c.c. (17½ ℥)	in nine feedings.
" three to four "	750 c.c. (26 ℥)	" eight "
" four to eight "	1,000 c.c. (35 ℥)	" " "
" three to four months,	1,250 c.c. (42 ℥)	" " "
" five to six "	1,500 c.c. (50 ℥)	" seven "

Escherich gives in detail his experience in feeding with fat milk fifty infants in a hospital, including rickety and tuberculous children. He has certainly met with marked success. Some cases have been

under observation for six months. His article is published *in extenso* in *Mitteilungen des Vereins der Aerzte in Steiermark*, No. 1, 1895.

Baginsky[1] mentions Gaertner milk as a new form of food introduced. In our country Jacobi[2] states that Gaertner milk is applicable to the majority of infants who require cow's milk appropriately prepared.

During the last summer I proposed to test the efficacy of Gaertner milk. With this view I have subjected the milk to a very rigid test, inasmuch as the time chosen, from June to October, was the heated term, which is the worst for milk digestion, and the hygienic conditions of the infants were those found in the average tenement house, too well known to need description.

The guides for ascertaining the degree of assimilation were the following factors:

1. The child's general condition, as manifested by its appearance, appetite, and sleep.

2. The presence or absence of gastro-enteric disturbances, such as vomiting, colic, restlessness.

3. The condition of the stools, constipation or diarrhœa, the number of stools in twenty-four hours.

4. The gain in weight; weekly observations.

The nurses or mothers were instructed to note the amount of food taken and the number of stools in twenty-four hours.

We submitted the stools passed in twenty-four hours to Mr. Herman Poole, our chemist, whose chemical report is appended. Thus we have tried to ascertain how much proteids, fat, sugar, and salts were taken, how much absorbed, and how much was voided in the fæces without having taken part in metabolism.

The following cases will serve to illustrate the method pursued in attempting to solve the problem before us and the results obtained as regards the efficacy of the milk:

Case I.—Dorothy Shattuck, a prematurely born child, the labor having occurred in the middle of the eighth month of gestation. For three weeks after birth the child's mother fed her on Borden's "Eagle brand" condensed milk, and then, being discouraged with the results, gave the child to the care of Mrs. Turnure, who brought her to the clinic. For the past week she had fed the child on malted milk and a mixture of milk, cream, and barley water. June 16, 1897, the little patient first came to us at the German Poliklinik. She stated that the child had been getting worse, was extremely irritable, slept badly, had had persistent vomiting and diarrhœa, with six and more watery stools daily. It also had a hacking cough.

Status præsens: An extremely emaciated child, twelve weeks old, weighing 6 lbs. and 12 oz. The head is of normal shape; the face has a peculiar, senile expression; the fontanelles are open, but do not bulge. The scalp is of a reddish color, with here and there a furuncle. The face has a sallow, earthy color; the eyes are kept closed most of the time. The thorax is not deformed; the ribs are not beaded; the thoracic skeleton is sharply outlined; the skin is dry, yellowish. The upper extremities show thick epiphyses; thin, flabby, bluish skin; cold, weak hands; and thin, atrophic long bones. The reflexes are diminished, the grasp is weak. The abdomen is full and pendulous, the abdominal walls are very thin, the intestines are distended with gas. The skin in the groins is flabby; there are no dilated veins and no herniæ. The buttocks and genitals are covered with an erythematous rash (intertrigo); the anal reflex is normal; rectal temperature, 99° F. The lower limbs are similar to the upper—thin bones, thick epiphyses, atrophic muscles, bluish dry skin. The scapulæ project behind; the spine is not deformed; the whole appearance is one of extreme atrophy. The tongue has a white coating; gums normal; fœtor ex ore. There are swollen glands in the inguinal region and furuncles on the thighs. The child drinks water with avidity; a peculiar, lactic-acid smell is exhaled from the body.

Diagnosis: Athrepsia, catarrhus gastro-entericus, rachitis.

Treatment: (*a*) Hygienic: Daily baths; cleanliness in the mouth, clothing, bottles, nipples.

(*b*) Dietetic: The sole diet, Gaertner's mother milk. Three cans (one-third litre in each) in twenty-four hours; beginning with a few ounces at a time, and increasing the dose gradually until eight ounces are given at one meal, of which there should be six in twenty-four hours, *i.e.*, every three hours in the daytime and at longer intervals at night.

(*c*) Medicinal: None.

An irrigation with hot water was used to wash out the colon and rectum before the diet was begun.

June 23d, the child took the milk at first reluctantly; the first doses were vomited at once. The nurse persisted, however, and her efforts were rewarded, for in a few hours the baby began to take the milk in larger quantities and to retain it well. The vomiting and diarrhœa stopped—three stools daily. The child was quiet, and slept twelve to sixteen hours out of twenty-four. Looked cleaner and brighter.

June 26th, the general condition is the same; bowels regular, tongue clean, complexion more natural.

On July 14th the weight was 8 lbs. and 3 oz., a gain of 1 lb. and 10 oz. in two weeks; 26 oz. in fifteen days, equals 1⅔ oz. daily gain. The milk was continued in the same quantities; a fresh supply was furnished at the clinic on every visit. The child was seen two or three times every week.

July 29th, weight, 8 lbs. and 10 oz. Gained 7 oz. in fifteen days, or ½ oz. daily out of the 48 oz. of milk consumed.

August 4th, had an attack of vomiting and diarrhœa, which was relieved by one dose of castor oil. There are three or four stools daily.

August 7th, milk continued as usual. The child looks bright; face smooth and of a natural color. Sleeps well, appetite good.

August 14th, for the last two days there is vomiting following an attack of cough. Child takes her food well; mucous râles on both sides of the chest; temperature, 101° F.; diagnosis of bronchitis. A teaspoonful every three hours of mistura glycyrrhizæ composita, to which some belladonna had been added, relieved the cough.

September 4th, the child has a normal temperature, cough is stopped, general condition is good, digestive organs are in good order.

The child was not seen until September 20th. Weight, 10 lbs. and 14 oz. The child is still taking the milk, and appears to enjoy very good health.

Case II.—Abraham Friedman, one year old, was fed at the breast for the first seven weeks of his life. Since then he had been receiving condensed milk. On July 3d was first seen at the German Poliklinik, with the history of diarrhœa, twelve greenish stools a day, vomiting once or twice daily.

On examination, a pale, bloated child; skin flabby, smooth, and dry; fontanelles open, dentition retarded, ribs beaded, abdomen pendulous, limbs weak, and bones very thin. Weight, 17 lbs. 10 oz.

Diagnosis: Gastro-enteritis, rachitis.

Treatment: An irrigation of colon and rectum with a decinormal saline solution; five grains of beta-naphthol bismuth every three hours.

Diet: Gaertner milk, three or four cans daily, at intervals of three hours.

On July 7th the general condition is better, no vomiting, two or three stools a day.

[1] "Lehrbuch der Kinderkrankheiten," fifth edition, pp. 35–30.
[2] "Therapeutics of Infancy and Childhood," p. 508.

July 14th, the condition remains the same.

July 29th, no diarrhœa, no vomiting; has two stools a day.

August 7th, the child's weight is 20 lbs. and 10 oz.

September 3d, the child receives, in addition to the mother milk, soup and rice. The general appearance is better; two stools daily of a brownish-yellow color. The child was discharged cured.

Case III.—Abraham Bassick, seven months old, first seen at the dispensary July 21st. Previous history: Born at term; for the first three days after birth he received the breast, and then he was fed on condensed milk. The child has an erythema intertrigo and lichen tropicus. Now suffers with diarrhœa, vomiting, and colic. Child is considerably emaciated, and weighs 8 lbs. and 14 oz., including his clothes.

Diagnosis: Athrepsia infantum.

Prognosis doubtful.

Treatment same as in Case I. Feeding: Number of cans daily, three; number of meals per day, six; at night, two.

Clinical results: The child increased in weight; the condition of the gastro-intestinal tract seemed to improve while he was taking this form of food; there were no vomiting and diarrhœa for the first three days after the commencement of the feeding. The child was infected with measles on August 9th, and was removed from our observation. The child died of pneumonia, August 16th.

Case IV.—Grace Bliss, two months old, was first seen August 14th. Mother had a number of miscarriages and lost several children; has had several stillborn children, some covered with an eruption. The present child was born at term, weight not known; has been nourished at the breast until to-day. For the past two weeks the child has been restless, cries a good deal; coughs, has coryza; also has eructations and passes a great deal of wind; three or four greenish slimy stools a day.

The examination shows a large, square head, thick epiphyses, distended abdomen, beaded ribs, flabby skin. There are no eruptions, and their existence previously is denied. The temperature is normal; no enlarged glands. Weight to-day, 11 lbs.; the child has been losing weight gradually.

Diagnosis: Athrepsia, rachitis, lues congenitalis.

Treatment: The breast feeding is to be alternated with Gaertner milk, one to one and one-half cans daily.

The child was seen every other day until August 28th. General condition good, takes the milk readily, there is much less colic, the child seems more contented and more quiet; stools are yellowish and appear more normal in consistence.

On September 1st the child's weight was 11 lbs. and 11 oz., a gain of 11 oz. in two weeks. The child has been watched during the month of September, and has received small doses of calomel—one-tenth grain three times a day for its lues—besides a bichloride bath, 1 to 10,000, every third or fourth night.

We consider this case very much improved.

Case V.—Mary Burghardt, a premature child, born at the eighth month of utero-gestation. Mother reports that it weighed about two pounds (*sic*). It was first seen on the 1st of August. During the first week of life the child appeared fairly well, slept quietly, and took the breast without any signs of discomfort. The child is now eleven days old; we are told that it coughs, moans, and cries when touched. There are frequent, soft stools. The child is about one and one-half feet long, and weighs three lbs. The mother states that she has lost several children in their infancy and had several miscarriages.

Examination: The head is of normal shape, with the soft bones and open fontanelles at this age. The face has a senile expression, but the skin is of normal color. There is no eruption; there are no beaded ribs. The upper extremities are very thin, the hands cold, the feet cold. The veins are enlarged; the abdomen is distended, tympanitic on percussion. The mother states that the skin of the lower half of the body came off in large scales a few days after birth. The skin is dry and shrunken. Temperature, 101.6° F.; pulse, 138.

Treatment: Irrigation; calomel, one-tenth grain t.i.d. Gaertner milk, two ounces every three hours.

The diagnosis of the case was congenital syphilis and athrepsia infantum.

The child was reported considerably improved, but it was thought advisable not to increase the quantity of milk until the 28th of August, when the child received one-half ounce more at each feeding. The child was watched during the month of September, and is considerably improved to-day. Weight, 4 lbs. and 9 oz. on September 25th.

Owing to the coolness of the limbs, inunctions of oil were given every day following the bath, and the child's body was wrapped in cotton wool.

Besides the above cases we have had fifteen patients to whom Gaertner milk was given since the beginning of June last. In some cases it was necessary to add sugar to the milk, as many children objected to the taste. In one case (Case III.) no deductions can be made, owing to the child's infection with measles and pneumonia resulting fatally.

Cases I. and V. serve as splendid illustrations for the proper determination of the value of this food, as both were syphilitic and prematurely born children. The other two children (Cases II. and IV.), although much stronger at the commencement of the treatment, improved very rapidly. We sometimes diluted the Gaertner milk with equal parts of barley or rice water, and if this latter mixture was not retained, then the Gaertner milk was discontinued. In the above cases the milk was borne very well, and is continued up to the present day. Although our experience is not so large as that of Professor Escherich, we feel that we can indorse both his statements and those of Professor Gaertner.

The assimilation of this form of food, judging from the stools, is equal to that of any other modified milk. The German journals assert that rickets and scurvy can be prevented by using this milk. As our observations have not been carried on long enough, we cannot yet corroborate this.

As we frequently notice that some children show a distinct idiosyncrasy when given milk, so it was in one case in which neither cow's milk, nor modified milk, nor breast milk, nor Gaertner milk was tolerated. That child fared best on malted milk, properly diluted.

Conclusions.—The small amount of proteid matter contained in the milk appeared to be very easily assimilated in the cases above mentioned. Case I. is a splendid illustration of a tolerance of this form of feeding, when neither cow's milk, condensed milk, nor malted milk was retained. We felt greatly encouraged, especially in the very hot July days, to find this baby gaining in weight, for it must be remembered that this child, in our city with poor hygienic surroundings, gained, from the end of June to the 14th of July, 26 oz. in fifteen days.

Case II., suffering from summer complaint about the same time, early in July, made very rapid progress, and while it could not digest a dilution of one-third milk and two-thirds barley water without passing six or eight stools a day, fared very well on the Gaertner milk.

Case III. was under observation from July 21st

until August 9th, and, although progressing favorably, unfortunately contracted measles and died.

Case IV., an emaciated child, had been receiving breast milk which did not satisfy it. It frequently nursed from thirty to thirty-five minutes at the breast. The child's mother insisted on nursing it, and thus we gave mixed feeding, alternating the breast milk with the Gaertner milk. Thus the child has received from two to three cans of milk per day, without showing any evidences of colic, and without having gastric or enteric disturbances. The treatment has been continued for over two months.

Case V., the prematurely born child with congenital syphilis, was certainly one which was well adapted for the trial of this form of feeding. When she was first seen there were thick, cheesy stools, which, after the gastro-intestinal tract had been cleaned and feeding changed, showed an entire cessation of the colicky symptoms. When commencing this treatment, the child having previously fed on cow's milk, I ordered all milk to be stopped, and fed the child on barley water and rice water for three days, after which I gave Gaertner milk, one ounce every three hours on the first day, two ounces every three hours on the second day, three ounces every three hours on the third day. Considering the syphilitic condition and the fact that it was a premature child, the increase of 3 lbs. and 7 oz. from August 11th until September 25th, during a period of six weeks, speaks for itself.

In conclusion I desire to thank George Saxe (M.S. at the Columbian University), and Dr. McConville, Dr. De Hart, and Dr. Emil Joel for kind and valued assistance.

CHEMICAL REPORT, BY HERMAN POOLE, U.C.S.

The chemical examinations were made with the idea of working out some connection between the substances ingested and those excreted. To this end the milk fed was analyzed and from this the quantity of each constituent fed to the child daily was determined. The fæces were also examined so as to ascertain the quantity of undigested fat and casein voided. The results of both sets of analyses are given below, the fæces examinations being tabulated and plotted for the better elucidation of the facts.

The Milk.—The milk used in feeding the children contained the following: Fat, 3.05 per cent.; casein, 2.09 per cent; milk sugar, 6 per cent. Specific gravity, 1.0275. Reaction, faintly alkaline.

When cold part of the fat separates out, forming a layer on the top of the liquid. On being warmed and thoroughly shaken, this is completely emulsified and distributed through the fluid. Its appearance is that of a good, rich milk, in taste a little sweeter than ordinary cow's milk; and it is more liquid and mobile.

Each can contained ⅓ of a litre or 20.34 cubic inches, and weighing nearly 9½ ounces. Of this there was: Fat, 0.289 oz.; casein, 0.198 oz.; milk sugar, 0.569 oz.; total, 1.056 oz.

Each child consumed from three to four cans of the milk per day and hence used: 0.867 to 1.156 oz. of fat; 0.594 to 0.792 oz. of casein; 1.707 to 2.276 oz. of milk sugar.

The milk was perfectly sterilized, a can remaining open for five days without thickening or showing acidity. The can analyzed had a shot of solder in it, which was perfectly bright, showing no chemical action and consequently no solution of lead.

The Fæces.—The chemical examination of the fæces was made with a view of obtaining, as nearly as possible, the percentage of undigested fat and casein. To this end the nurses were instructed to deliver at the laboratory three times a week the napkins used during the previous twenty-four hours. They were put into cigar boxes and kept in them until examined, which was on the day of receiving them. In some cases they were in very good condition, but many times they were dry and hard, the deposit adhering so firmly to the cloth that it was almost impossible to remove sufficient for analysis and have it free from adhering cotton fibre. This was especially the case when cotton flannel was used, as was frequently done.

In all cases except No. 1 (Shattuck) the weight of the fæces given is below that actually voided; in case No. 2 as much as twenty-five per cent. can be added to the amount given; with Nos. 3 and 4 at least fifty per cent., and on some days the amount obtained for analysis was not one-half of that actually voided.

The amount of moisture was of course much influenced by that of the liquid excretion, which naturally varied considerably. Still, to avoid necessity of laborious analysis, the hypothesis was adopted that the amount of moisture absorbed from the fæces by the cloth was equal to that added by the liquid excretion. In some cases I think this was correct; in others it is doubtful, especially when the fæces as voided were very thin and the napkin had evidently been kept long enough to become dry. This was a matter very hard to regulate, and must be accepted as found.

The physical appearance did not vary very much in individual cases, except in times of intestinal disturbance. After a few days the cloths of Case I. would have the fæces in a single mass, and of such consistence that over ninety per cent. of it could be easily removed. While the child was suffering from an attack of the diarrhœa, as shown by a rise in the curve, of course such a condition could not be expected. There was a decided improvement in the color in each case, it changing from a dead clayey appearance to a more or less decided yellow, with occasionally a greenish tinge. When dry, as was sometimes the case, the color was uniformly brown or dark brown.

In most cases the fæces at first were very thin and spread all over the cloth, but with those continued for a time this character changed to becoming firmer and more collected in one place. Some of the cases were so poorly taken care of that no mention need be made of the condition, it being hardly possible to obtain a sufficient quantity for satisfactory examination.

With one exception the smell was uniformly very faint and not of an offensive character. The exception is the case of the Bassick child, which was fed with egg albumen in addition to the milk. One of the other cases showed a faint skatol odor twice, but in none of the others was it noticed and in this case there was not sufficient skatol to admit of separation. On many days the lactic-acid odor was not perceptible, although litmus paper showed a faint acidity.

The reaction was almost uniformly acid, not strong at any time, and not measurable except in very few instances, and in these only to a very small fraction of a per cent. (0.005) as determined with decinormal ammonia solution. On some days no change in moistened test paper could be observed after fifteen minutes. No decided alkaline reaction was found except once, and this was in a dried sample, the reaction of which may have been influenced by the urine present.

The quantity in the same case did not vary very much. When a very large figure is given there was evidently an accumulation of two days, as was shown by the physical character. As mentioned above, in some cases I was not able to remove more than half of the total, and of course the amounts given do not fairly represent the quantity. This is true with all cases except Case I., which will average within ten per cent. of the total voided. It is impossible to impress the kind of people from whom these were ob-

tained with any idea of care in this regard, and the cloths brought to me show it.

Remarks analogous to those made regarding the amount of excretion apply as well to the water contained. Still a fair average can be found and will probably be near the correct one. In most cases I was obliged to put all together, wet and dry, to have sufficient for analysis, and this at times caused an abnormal number to appear as the water content. This is notably the case with the Bassick child, in which the water content dropped on one day to twenty per cent., the cloths being practically dry. It was also noticed in regard to this one that in this instance the ordinary strong smell was absent.

In each case the quantity of fat and casein decreased after the milk was used, and remained at a lower percentage. This does not apply to the Bassick case, and in fact this case was amenable to no law but that of uniform filth. Whenever a temporary sickness occurred the percentages would rise, and with the Shattuck child this rise also occurred nearly simultaneously with her being taken to Staten Island, where, although she was reported in good health, the percentages kept higher than when she was in the city, and on her return to the city they fell again. Still, in none of these cases of rise in percentage did it reach that point which was attained at the beginning of the experiments. No notice is taken in these results of the quantity of fat which exists in the fæces combined with calcium, iron, alumina, etc., as insoluble soaps. These have undergone some change in the system, and only the undigested or unchanged fats which were soluble in ether were determined.

The methods used for determining the fat and casein were those mentioned in my paper read before the American Chemical Society at Detroit in 1897. The fæces were dried at 90° F., then at 110° C., and the ether extract taken. This ether extract containing also cholesterin with fat was saponified with alcoholic potassa and the cholesterin taken up with ether. The fat-acid soap was then decomposed by hydrochloric acid and the fat determined. The residue from the ether extraction was then treated with water and with alcohol. The residue thus obtained containing the undigested casein and the epithelial cells from the intestinal tract was digested with diluted hydrochloric acid for ten to twelve hours, and this solution used to determine the nitrogen by the Kjeldahl method. Casein was considered as being fifteen per cent. nitrogen.

Of course these methods may be open to objections, but I know of no better ones, and after trying several others decided that they would suit the investigation and its requirements the best, and I actually believe that the true state of affairs has been shown better than it would have been by any of the methods previously used.

The following tables show the results of the examination, giving the date of receiving the fæces, the general appearance, consistence, reaction, quantity in grams that could be removed from the cloth, and the percentages of water, fat, and casein obtained by the methods given above. The percentages of cholesterin are not given, although they were of course obtained. They did not run in a uniform proportion to the fat, being at times very much larger than at others.

Discussion of the Curves.—The curves are made by using the days of the month as abscissas and the percentages as ordinates. The zero point at the intersection of the axes is then the date of the commencement of the experiment on the line of the abscissas and 0 per cent. on the line of the ordinates.

CASE I.—DOROTHY SHATTUCK.

Date—1897.	Appearance.	Consistence, etc.	Reaction.	Quantity, Grams.	Water, Per cent.	Fat, Per cent.	Casein, Per cent.
June 28th	Clayey	Thin	Acid	28	67.7	5.66	1.06
June 30th	Clayey	Soft	Acid	23	75	4.72	1.06
July 3d	Yellowish	Soft	Acid	26	73.3	3.8	1.16
July 6th	Slight yellowish	Soft	Acid	30	76.1	2.25	1.2
July 8th	Yellowish	Lumpy	Faint acid	29	68.8	2.25	1.12
July 10th	Yellow	Lumps	Nearly neutral	10.8	69.9	3.2	1.06
July 12th	Yellow	Lumps	Neutral	35.7	65	3.24	1.08
July 14th	Yellow	Lumps	Neutral	38.6	65	2.99	1.09
July 16th	Yellow	Lump part quite dry	Faint acid	62.5	55	3.49	1.29
July 18th	Yellow	Lumps	Faint acid	42.6	71.5	2.46	1.05
July 20th	Yellow-brown	Lumps	Faint acid	15.8	63.2	2.5	1.12
July 23d	Three yellow, one brown	Three soft, one dry	Very faint acid	51.8	51.2	2.23	0.79
July 30th	Yellowish	Lumpy	Neutral	33	61.2	2.5	1.85
August 6th	Yellow-green	Soft	Acid	21	75	2.92	1.5
August 13th	Yellow	Soft	Neutral	18.4	70.6	3.99	3
August 23d	Yellow-green and dark	Mixed	Neutral	12.7	69	3.66	2.9
August 27th	Yellow	Soft	Very faint acid	29	69.26	3.4	2.45
August 29th	Yellow-green	Soft	Very faint acid	23.4	63	3.65	1.92
			Average	27.96	67.2	3.25	1.48

CASE II.—ABRAHAM FRIEDMAN.

Date—1897.	Appearance.	Consistence, etc.	Reaction.	Quantity, Grams.	Water, Per cent.	Fat, Per cent.	Casein, Per cent.
July 6th	Clayey	Thin	Acid	9.8	77.95	7.66	2.92
July 10th	Smeary, yellowish	Thin	Faint acid	5.2	60	5.18	3.06
July 12th	Yellow-brown	Thin	Faint acid	7.7	72.83	4.01	2.05
July 18th	Yellow-brown	Soft, strong smell	Faint acid	33.44	65.14	3.09	2.03
July 23d	Two yellow, one brown	Soft	Faint acid	19.36	70.2	3.15	1.68
July 28th	Yellow-brown	Soft	Neutral	6.6	65.66	3	1.54
August 2d	Yellowish	Soft	Acid	12.6	69.18	3.29	1.86
August 6th	Yellow, green, and brown	Soft	Faint acid	8.76	74.89	2.83	1.25
August 9th	Clay yellow	Soft, strong smell	Acid	10.56	75.12	3.25	1.79
August 11th	Yellowish	Thin	Faint acid	9.32	76.24	3.43	2.03
August 16th	Yellow-green	Very thin	Faint acid	5.12	79.69	4.49	
August 23d	Brown	Pasty	Faint acid	17.13	71.84	3.43	2.42
			Average	11.92	71.57	3.83	1.64

CASE III.—ABRAHAM BASSICK.

Date—1897.	Appearance.	Consistence, etc.	Reaction.	Quantity, Grams.	Water, Per cent.	Fat, Per cent.	Casein, Per cent.
July 2[illegible]	Too small quantity for examination.						
July 23d	Yellow-brown	Soft, strong smell	Acid	4.[illegible]	78.4	4.28	3.54
July 28th	Brown	Dried	No reaction	5.4	20.53	4.7	4.5
July 30th	Yellow and brown	Thin	Faint acid	5.3	75.45	3.45	3
August 2d	Yellow and brown	Slimy, strong smell	Faint acid	7.8	55.5	4	2.55
August 6th	All dark but one yellowish	Hard, but one thin and strong smell.	Faint acid	6.33	55.78	4.23	2.79
			Average	5.87	57.13	4.14	3.27

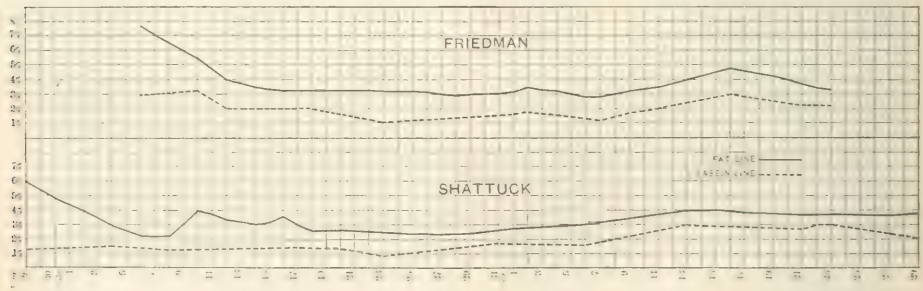
CASE IV.—GRACE BLISS.

Date—1897.	Appearance.	Consistence, etc.	Reaction.	Quantity, Grams.	Water, Per cent.	Fat, Per cent.	Casein, Per cent.
August 18th	Yellow	Soft-dried	Very faint acid	3.75	53.25	21.06	4.02
August 23d	Yellow-green	Firm	Very faint acid	3.95	46.55	22.45	4.07
August 27th	Yellow	Dried lumps	Very faint acid	4.25	55	18.36	3.63

The Shattuck curves: The curve of the casein percentage runs very even until the latter part of July, the time when the child was taken out into the country. While she was there her health was reported good except at the middle of August, when she had an attack of diarrhœa, which lasted some time. This is plainly shown on the curve, both casein and fat lines responding to the conditions. Why the curves rose about July 29th is not explained. The fat curve made a decided downward movement from the beginning, and except for the fluctuations due to intestinal troubles remained low; in all cases it remained lower than it was at its inception. This curve, like that of the casein, tends upward about July 29th, and does not return to its former low figures.

The Friedman curves: With these curves, as with the Shattuck ones, the effect of the feeding is shown by a downward movement. The two lines run closer together than in the Shattuck case, and both respond to the diarrhœa which commenced August 1st and was at its height at about the 17th. The fat curve seemed to respond more quickly to changes in the intestinal tract than did that of the casein, and at times no change in the casein could be determined when a marked one in the fat was evident. At other times, however, from some cause, the casein showed a change not to be noticed in the fat.

The curves of the other cases are not plotted, as they were soon discontinued, and the data obtained were not considered sufficient.



What Constitutes a Maid.—The supreme court of Vermont has decided, in an action of indictment for adultery, that a maiden is "a young unmarried female, not necessarily a virgin."

DIABETES MELLITUS AND ITS TREATMENT: REMARKS BASED ON CLINICAL EXPERIENCE.[1]

BY HENRY S. STARK, A.M., M.D.,

NEW YORK.

In contemplating the character and nature of diabetes mellitus, we are once more confronted with the almost legendary bugbear that, despite all the boasted progress of the medical sciences in our own times, there are still more medical mysteries in heaven and earth than were ever dreamt of by medical philosophers. That this disease is one of the most conspicuous examples in illustration of this text becomes painfully apparent when we recall the slight progress made in our knowledge of it. Pathology has been practically a dead letter, bacteriology has revealed nothing characteristic or constant, while recent elaborate studies of human blood have borne no fruit whatever. Diabetes, therefore, has to this day no definite status as a pathological entity, being known rather as a symptomatic complex or clinical picture, much the same as exophthalmic goitre and certain other medical nondescripts are. It is generally admitted that, in order to establish the identity of a particular disease, it becomes necessary to show that the disease in question is produced by a special cause manifesting itself by distinct pathological conditions; and, further, it must be shown that the particular disease is characterized by distinctive features pertaining to its symptomatology and clinical picture not common to other affections. I scarcely believe that diabetes mellitus comes within the pale of these conditions, and on that account its place in our nosology is still in question. True, there

[1] Read at the meeting of the section on general medicine, New York Academy of Medicine, November 17, 1897.

are extant various theories of its origin and of the nature of the lesion; of these some are radically divergent, while all are based on assumption rather than on the results of post-mortem examinations, and it is just on this account that our knowledge is too presumptive and too ambiguous to be construed in any one constant way. We cannot therefore be expected to accept as incontrovertible truths facts which only hold true at the bedside or on the vivisectionist's table, but which lose their significance in the post-mortem room.

Among the various organs to which was referred the lesion of diabetes mellitus, the most prominent are the liver, the pancreas, and the medulla oblongata. Authorities accordingly speak of hepatic, pancreatic, and cerebral diabetes, respectively. As far as the importance of this classification is concerned for clinical and therapeutical purposes, I have found that I could in most instances discard it without detriment to the health of my patients; in point of fact, I am frank to confess my inability in most instances to differentiate between these varieties. The discrimination from a therapeutical standpoint is scarcely necessary, for viewed in this light the disease has always been a puzzle. The very fact that such divers and ofttimes diverse drugs have been recommended for the cure of it is the very best evidence to prove how inefficient they all are. This postulate holds true for many other affections, while the converse of this proposition, to my mind at least, is just as true—that, whenever any one drug is recommended for the cure of a host of affections, a catholicon as it were, the presumption is strongly in favor of the claim that it is next to useless in most of them.

The first factor in diabetes mellitus is to establish the existence of the disease; this, in view of its unascertained pathology, is not so easy as would appear on first thought, for I know of no disease in which it is so difficult to determine where physiology ceases and where pathology begins. Acute or chronic glycosurias are not, *per se*, sufficient evidence to warrant a diagnosis of diabetes, for we know that both forms of saccharine urine may occur under conditions which are compatible with the enjoyment of good health. We may have a normal or a pathological glycosuria of transient duration; thus also a normal or physiological glycosuria may follow an overindugence in carbohydrates, or may even follow unusual muscular fatigue; in the same way also a temporary pathological glycosuria may be artificially induced by the exhibition of certain drugs, most of which are too familiar to require enumeration; thus also this condition may be produced by lesions of the brain, spinal cord, or nerves. And yet not one of these conditions constitutes diabetes mellitus. Therefore the question arises: When can a person be said to be suffering from diabetes? I believe from my personal experience of numerous cases that two or more pathological phenomena must obtain before a positive conclusion is warranted; namely, chronic glycosuria, polyuria, and polydipsia, and a general deterioration in health depending upon these phenomena. Whenever this triad of symptoms is present, a diagnosis is justifiable.

From a therapeutic standpoint this distinction is of considerable importance, for there comes a time in the course of all chronic glycosurias when we must pass judgment on the case in order to adopt suitable remedial measures. I do not think the criterion suggested by me is too far-fetched, although I can readily understand that some practitioners, particularly life-insurance examiners, would take exception to it. The point, however, to be emphasized is that neither acute nor chronic glycosuria without a depreciation of the general health ought to be considered diabetes mellitus. The presence of sugar in the urine, just as the presence of albumin, has a certain diagnostic value, whose importance is in direct ratio to the changes in the general state of the patient's health.

While on the question of diagnosis I wish to allude to certain signs and symptoms which are not usually mentioned as such in the more familiar text-books, and whose presence, singly or in combination, ought always to arouse suspicion of this disease. Among these evidences of the affection may be mentioned the following: Periodic attacks of headache in obese subjects over thirty-five years of age; extreme fatigue after a short but violent exertion, and prolonged fatigue of twenty-four to forty-eight hours after a slight exertion, both forms occurring in adults; slowly failing vision in the aged or quickly failing vision in the young; certain signs and symptoms referable to the mouth, such as unusual redness of the buccal mucous membrane combined with acid saliva and decaying teeth. This is a combination we frequently encounter in middle-aged women. Two varieties of symptoms referable to the heart and its functions; one set of cases simulating an attack of angina pectoris, *e.g.*, pain in the left præcordial region, radiating up to the shoulder and down the arm, accompanied by dyspnœa and cardiac oppression; a second set of cases which present the physical signs of cardiac hypertrophy or of arterio-sclerosis. This latter set of cases may be met with not infrequently in obese male subjects, with florid expressions and with otherwise healthy appearances. In reference to these cardiac symptoms, it is necessary to state that I do not claim an etiological or a pathological relationship between diabetes and heart disease, nor do I claim that the inroads of the disease exhibit a special predilection for the heart. I am merely reverting to these symptoms and organic changes as frequent coincidences and as sequelæ in the course of diabetes, when perhaps there may be no other palpable deviation from sound health. Still another train of symptoms which has aroused my suspicion of diabetes mellitus was referable to the nervous system. This set was characterized by marked nervousness. The patient, usually an old man, would be possessed of an ungovernable temper, which was aroused under the slightest pretext; generally he would have a morose expression, would be impatient and easily irritated. This set of peculiarities is so familiar, and forms such a classical picture, to German practitioners and even to the laity, that whenever met with in an old man he would be at once labelled by the knowing ones as a person who probably was a victim of diabetes. Other symptoms which should put the clinician on his guard are unusual pallor, premature grayness, slow healing of wounds, and premature sexual weakness.

À propos of the question of diagnosis, I wish here to allude to a possible vagary or anomaly of diabetes, a condition which I might be permitted to style "aglycosuric diabetes" — that is, diabetes mellitus without the presence of glucose in the urine. To illustrate: I have at present under treatment a woman, aged forty-five years, who furnishes all the classical symptoms of diabetes mellitus—namely, marked emaciation, a general nervous and mental depression, polyuria, a ravenous appetite, an uncontrollable pruritus vulvæ; her urine is always of high color and specific gravity, but never shows any trace of glucose. This patient is under my observation for nearly five years, during which time any number of tests and of all kinds were made by myself and others, and yet there never was detected even a trace of sugar in her urine. The clinical history and the character of the urine would enable us to exclude diabetes insipidus. Here, then, is a type of disease which has not yet been recognized in our nosology. The clinical picture conforms most perfectly with diabetes mellitus, and

yet the urine never reacts affirmatively. I have seen a few of such cases, and it is my invariable custom to look upon them as diabetes mellitus and to adopt treatment accordingly.

Before touching upon the treatment of this disease, I wish to make certain observations regarding its prophylaxis. For while we cannot in most instances radically eradicate the disease, we can in a minority of cases prevent its appearance in a number of subjects whose physiological demeanor and whose physical condition plainly indicate that they are candidates for this disease. My experience has taught me one or two points of practical importance which I shall incorporate in these remarks.

First and foremost, when confronted with obese male subjects over forty years of age, physicians should always insist upon and impress their *clientèle* with the importance of suitable muscular exercise. From general inclination such subjects are averse to any such indulgence, for obesity and exercise seem to be diametrically opposed, while obesity and laziness are synonymous. Obesity and diabetes are ofttimes concomitants. If such subjects are of the Hebrew faith this injunction applies with double force, for it is only too well known that this race is peculiarly and unaccountably susceptible to this affection. That the muscular system is largely involved in the glycosuric function is now well established on a physiological basis, for it appears that this system serves as a glycogen reservoir just as the liver does; and that under certain abnormal conditions the quantity stored up is not consumed, but rather finds its way into the circulation and thence into the urine. There is a set of benign cases in which the symptoms have been made to disappear by simply getting the patient to take suitable muscular exercise. This exercise must not be carried to the point of fatigue, but must be taken in moderation and in accordance with fixed regulations.

Another point of practical importance is that the older members of a family in which the diabetic dyscrasia prevails should religiously eschew foodstuffs rich in carbohydrates, while the younger members should indulge in such articles in moderation. Heredity is now known to play an important rôle in the etiology of this trouble. I have seen any number of cases in which this causative factor was pronounced. Thus I have seen three sisters affected, three brothers, father and two sons, grandfather and grandson. Strangely and probably only coincidentally, I have twice observed the disease occurring in husband and wife.

Third precaution—corpulent individuals suffering from gout should positively abstain from sugar and starches, on account of their greater liability to the disease. It would appear from the foregoing prophylactic measures that obesity is one of the principal events in the history of diabetes. That is precisely the experience of most clinicians.

Still another precaution is that all persons who by reason of their occupation or inclination lead an indoor, sedentary life, but whose minds are sedulously occupied, should be warned against their predisposition. Prolonged mental strain or exhausting intellectual occupations are important factors in the etiology of this disease. We constantly meet with cases of glycosuria in which no other causative factor can be discovered.

The medicinal treatment of this disease would furnish a splendid text for a sermon on therapeutics. I believe every drug mentioned in or out of the pharmacopœia has at one time held sway. With the exception of opium and its alkaloids, all have lost their hold on the professional mind. Probably eighty per cent. of physicians are to-day employing morphine, opium, or codeine in the treatment of diabetes. As long as pathology is helpless satisfactorily to account for the disease, so long will its treatment by drugs be empirical and conjectural. I have employed almost every drug advocated, and have finally discarded all save opium and its alkaloids.

At the Eleventh International Medical Congress, held in 1894, at Rome, Monin, of Paris, in an article on the treatment of diabetes, strongly advised the use of permanganate of potassium in the treatment of the rheumatic and hepatic varieties, claiming for this salt that it "invigorates the vital forces, reduces thirst, causes a remarkable diminution of sugar in the urine, but an increase in the number of red globules, and if hepatic congestion be present the liver is reduced in size in twenty days." He prescribed ten drops of a five-per-cent. aqueous solution *ter in die*, and also advised a hot eight-per-cent. infusion of malt at mealtimes. Immediately following the publication of these facts, I also began the use of this salt in the treatment of diabetes. I did not, however, restrict myself to the rheumatic and hepatic varieties, but employed the drug indiscriminately in all types. I have up to date treated about fifty cases of diabetes with the above solution, and with a stronger solution. Many of these cases remained under my personal supervision for several months, and some for several years. In connection with the exhibition of the drug, a moderate antidiabetic diet was insisted upon. I am now in a position to state, as the result of my experience with this drug, that with the exception of a very few cases I do not believe my patients were at all benefited by this mode of treatment, and, further, that I never obtained the favorable results described by Monin. In most cases a mild drug gastritis supervened, rendering its further employment undesirable. In a few cases the drug was discontinued on the appeal of the patient. I have now relegated the salt to an oblivion, as far as the treatment of diabetes is concerned, having satisfied myself of its inefficiency. I believe there is no published record in American medical literature of the use of permanganate of potassium in the treatment of diabetes.

I know of no disease in the treatment of which the personal equation enters so largely as in the disease in question, and just on that account the treatment to be followed in a given case should be determined by individual needs rather than by general considerations. Idiosyncrasy is an important factor. Discretion and good judgment on the physician's part are ofttimes more serviceable than drugs. A blind indiscriminate resort to drugs, in connection with a sudden stoppage of all foods containing sugars and starches, has often resulted in more harm than benefit. It appears to me that it is unwise to cut off suddenly and entirely all such articles of food, just as it is suddenly to stop the use of opium or alcohol in persons who are addicted to their uses. Such drastic measures act as a shock to the system, from which it naturally recoils. If the disease is at all amenable to treatment, it must be attacked by siege rather than by assault. The physician who studies the stereotyped recommendations of the text-books will not meet with half the success that the physician will who studies his patient. While I am ready to admit that I cannot point to any pathological evidence in corroboration of these facts, yet I can submit clinical evidence in substantiation. From a physiological standpoint these facts are almost axiomatic. Physiology teaches that sugar is a constant ingredient of the human economy, and that, deprived of all natural supplies, the system craves for it as it would for salt, but not so markedly. It is reasonable to assume that nature would not have supplied sugar to the body if she did not intend it to fulfil some useful function. The elimination of glucose from the urine

is not in itself an element of danger. Sugar can be demonstrated in the blood and urine of diabetics for days after all carbohydrates have been suspended, showing almost conclusively that even with an exclusively nitrogenous diet there is an invariable supply of sugar in the economy, and that the source of supply is the ingested proteids themselves—that is, the albumin derived from animal food. Since, then, it is known that even albumin may be and is partially converted into sugar, those physicians who advocate total abstinence from carbohydrates might just as consistently advocate a total abstinence from nitrogenous or animal food, on the same principle.

There is a set of cases in which the abrupt suspension of carbohydrates is a positive danger. I refer to those diabetics in whom a rapid emaciation, depending upon a gradual disappearance of the fat of all tissues and organs, is the most pronounced symptom. In consequence of the absorption of the fat of the body, there is a gradual loss of strength and flesh. Now, in view of the physiological fact that the ingested carbohydrates are partially converted in the human economy into fat, just what the system most requires now, the logical sequence would be to make up for this loss by administering foods that contain starches and sugars. This clinical experiment I have tried time and time again, and I verily believe with good results. I therefore allow moderate quantities of carbohydrated foodstuffs in these selected cases, and I have reason to believe that I have tided more than one rapidly emaciating diabetic over a critical period. In these cases also I do not entirely forbid malt or spirituous beverages; on the contrary, I advise and allow their use in moderation. It seems unreasonable to withhold alcoholic stimulants entirely from persons who are accustomed or possibly addicted to their uses, and who are daily losing strength and flesh by reason of such privations. There are certain diabetics, and I have several in mind at this time of writing, who indulged in alcoholic stimulants, contrary to my orders, and who were never the worse for it. The best guide for gauging the quantity of carbohydrated food that is permissible in a given case of diabetes is furnished by a weekly comparison of the body weight of the patient with the quantity of glucose eliminated. Thus if the patient's weight remains stationary or increases, while the quantity of sugar excreted remains fixed or nearly so, the amylaceous food is doing no harm; conversely, if the weight steadily decreases while the glucose increases, the carbohydrates are severely contraindicated. There is a set of cases, usually severe, in which the urine always reacts affirmatively to the yeast test, despite an exclusively nitrogenous diet. Here again the course to be pursued as far as the dietary is concerned should be a compromise one; that is, the three classes of food—carbohydrates, proteids, and fat—should be included in proportions compatible with the conditions. Some dry acid wine, such as Moselle, or white and red Rhine wines, or a light red wine such as claret, is permissible and even indicated. These wines contain a minimum of sugar, while their fermentation has been completed before bottling.

It is always important in the intelligent treatment of this disease to ascertain the quantity of urea eliminated with the urine; for this knowledge furnishes a clew regarding the rapidity and degree in relative terms of tissue destruction or of retrograde metamorphosis. The ratio between the ingested nitrogenous food and urea eliminated, while in no instance a fixed quantity, nevertheless operates in accordance with the fixed laws of metabolism. It is evident that, armed with a knowledge of the rate of urea excreted, the physician is in a position to direct the patient regarding the quantity and the quality of his food. With a knowledge of such a ratio, we have also a guide to maintain a nitrogenous equilibrium, a physiological state which in all diabetics ought to be a matter of solicitude, for by watching this standard we can at times avert the coma or uræmia that may be attributed in certain instances to the enforced conditions of diet; that is, to the unusually large quantities of proteid foods. It is right here that the personal equation in a given case of diabetes enters, and it demonstrates how true the statement is that each case is a problem by itself. It must be apparent that to treat a case of diabetes conscientiously and intelligently we must have a knowledge of the quantity of urea eliminated in the urine. The urine should be tested for urea once or twice every month. There are several methods in vogue. The apparatus and method devised by Doremus are sufficiently correct for all clinical purposes. This method is based upon the chemical fact that hypobromite of sodium decomposes urea into water, nitrogen, and carbonic acid. A graduated scale on the ureometer indicates, approximately only, the quantity of urea in a given quantity of urine. The weekly or fortnightly variations can thus be rapidly estimated.

Considering the valuable data to be derived from a knowledge of the comparative quantities of urea eliminated, it is no exaggeration to claim that its determination is paramount only to a knowledge of the quantities of glucose eliminated. At times it is the only clew which heralds an attack of uræmia or of coma, and oftener it is the only available method to determine whether the economy is surcharged or overburdened with the nitrogenous elements of an exacting, artificial diet. In this connection it is well to remember the fact that diabetic urine contains an excess of urea, a phenomenon by no means strange when we take into account the proteid character of the alimentation; and secondly, the rapid tissue destruction, muscular, adipose, and otherwise, that is an invariable accompaniment of this disease.

From what has been said about urea, it may be reasonably inferred that a like claim will be made regarding the presence of albumin in the urine of diabetics. Albumin is present in about one-third of all cases of diabetes. If present, its quantity should be determined for precisely the same reasons as have been stated above for urea. For the quantitative test I usually employ Eschbach's albuminometer. An albuminuria in a diabetic does not necessarily indicate renal disease, but when it does the question of alimentation will tax the practitioner's ingenuity to the utmost, for it is known that the diet indicated in diabetes is contraindicated in nephritis. Here, then, is a set of conditions or rather complications which will require careful discrimination. In this set of cases the safest plan of operation will be to gauge and compare the quantities of glucose, urea, and albumin, in order to arrive at a working hypothesis, and in this manner to find and to maintain an equilibrium that best suits the exigencies of the case.

There are certain points in the treatment of this disease which have been so well established by time and experience, concerning which there is such widespread unanimity of opinion, that they are equivalent to truisms, and on that account I purposely refrain from mentioning them in this paper.

In a bird's-eye view of this paper, two propositions will stand out from all others as the most important—to wit, that the new and the abnormal ingredients of the urine should be measured, the results being reserved for future reference as an aid to the dietetic treatment; and secondly, that an exclusively nitrogenous diet will often prove to be a menace rather than a benefit to health.

151 East Seventy-Second Street.

PAIN, OPIUM, AND APPENDICITIS.—A PROTEST AND A PLEA.

By ADOLPH KUTT, M.D.,

Even fifteen and twenty years ago one met surgeons who had no great affection for opium in the treatment of peritonitis; but to-day may be one-half or more of the surgeons give it a distressingly cold shoulder. Physicians, on the other hand, are as a rule as fond of this magnificent drug and its derivatives as ever; and I think, speaking as a general practitioner, justly so.

This difference of faith and practice is conditioned by professional habits and experience, besides social circumstances which affect both classes somewhat differently. Pain no doubt has a religious and metaphysical aspect which may be consoling enough to some from a theoretical, or a devotional, or an academic point of view, but when it affects the flesh and bowels of men, women, and children, metaphysics is thrown to the winds and a physician, usually not a surgeon, is called in to put a stop to it as speedily as possible, and by means less excruciating and appalling than the pain itself. To accomplish this end, opium in some form is applied. Afterward the surgeon may be needed. The physician prepares the way for him, and makes his exit easy.

Of late, surgeons have claimed appendicitis to be a surgical disease; but general experience and statistics do not altogether justify the claim. In only a small percentage of cases the surgeon's services are needed, but in every case that comes under medical care the possibility of the surgeon's help is never to be left out of consideration—and only in these senses is appendicitis a surgical disease.

To the writer it seems that surgeons are somewhat paradoxical concerning the administration of opium and its derivatives for the relief of pain. They claim that opium masks the disease—in what way it is not always easy to get definite ideas or indications from them. Physicians know from experience, and many surgeons agree with them, that the severity of the pain is not indicative of the gravity of any particular case of appendicular inflammation. Very painful appendicular trouble may be and is often recovered from within a week's time, and, again, this disease has killed a patient within forty-eight hours without having given rise to much extraordinary pain. Furthermore, the location of the pain is not by any means definitely fixed. All that the symptom pain does for us definitely in the way of diagnosis is to direct our attention to the abdomen for the source of trouble. Pain as such is of only minor importance in arriving at a diagnosis of appendicitis. Such being the case, why not then relieve the patient from pain? Does opium mask the other symptoms and signs of appendicitis or those that indicate its progress for better or worse? A practical experience in hospital and private practice of twenty years' duration urges the writer to answer positively, No! Over and over again he has found in cases of appendicitis and other forms of peritonitis that patients complain of pain on movement, or when the affected regions have been palpated or manipulated, while they were tolerably comfortable under varying doses of opium. Furthermore, opium, far from interfering with the functions of diagnosis in these diseases, also has an indirect curative effect by more or less controlling the local inflammation, by reducing circulatory pressure and diminishing intestinal peristalsis.

To conclude: It has not been the object of this paper to antagonize the surgeon and his due share in the management of appendicitis, but simply to insist on two facts; namely, that pain as such and as a symptom of appendicitis is of but subordinate importance as a factor in diagnosis, but often of pressing and paramount importance respecting therapeutical indications which are best carried out by the judicious administration of opium or its derivatives, oftentimes in large and generous doses. Opium can do no harm to the patient suffering from pain in the course of appendicitis, unless the calm and comfort which it brings benumbs the diagnostic capabilities of the managing doctor. The man who cannot diagnosticate a case of appendicitis and differentiate it from other acute intra-abdominal affections of a suppurative and non-suppurative character which are initiated with and accompanied by pain as a matter of course, ought not to treat any case of abdominal pain unassisted. An incompetent diagnostician will make havoc with even a consulting surgeon, as well with opium as with any other remedy. Thus when opium does harm to a patient suffering from appendicitis, the harm should be attributed to a bad diagnosis, and not to the opium; and, finally, it should not be overlooked that pain as such does not settle the question for operation or diagnosis, and that opium is the only remedy that can kill a killing pain.

406 West Thirty-[illegible] Street.

ELECTRIC TREATMENT IN GOUT AND THE URIC-ACID DIATHESIS.[1]

By ROBERT NEWMAN, M.D.,

From careful observation and experience the author asserts that gout and kindred diseases can always be checked, relapses prevented, and in many cases cured, by the judicious application of electricity, particularly with the static current.

To this association three papers have been contributed, bearing on the subject under consideration. The first was read in 1891, at the first annual meeting, by Dr. W. F. Robinson, on "Electricity in the Treatment of Rheumatism." He recommended the galvanic current in affections of one or two joints, and static electricity if the rheumatism is generally diffused in the body, in which case he gives the static sparks. Applications may be made on alternate days, lasting ten minutes.

At the same meeting Dr. Margaret A. Cleaves read a paper on "The Uses of the Galvanic Current in Articular Inflammatory Exudations." The treatment was by the galvanic current, constant or interrupted. In one case after thirteen *séances* it was followed by faradization. The point taken is the use of electricity during an acute stage instead of waiting for the chronic state. The argument is that electricity can be used in an acute stage, that there is no danger of developing more acute inflammation. By waiting for the advanced stage the case is made more difficult to handle, thickenings of the articular tissues, contractions of limbs, exudations, impairment of movement, even ankylosis being met with. Such teachings are more modern, very rational, and deserve much consideration in the use of electro-therapeutics.

At the sixth annual meeting at Boston in 1896, Dr. J. Griffith Davis contributed a very practical essay, "Uric Acid—The Rôle of Electricity in Its Treatment." Advanced grave cases with complications were cured with the faradic current, but from later observations the good results of the static sparks were acknowledged. Dr. Rockwell[2] says that the galvanic

[1] Read at the seventh annual meeting of the American Electro-Therapeutic Association, in Harrisburg, September 21, 1897.

[2] Rockwell, E.: "International System of Electro-Therapy," p. 33.

current in the treatment of gout and rheumatism should be selected on theoretical grounds, but from his own experience he is in favor of faradization, and the higher its tension the greater appears to be its analgesic properties. For this reason the static induction current, the tension of which is enormous, is often serviceable.

Cataphoresis can be used to introduce therapeutic substances into the system by electricity, in which case it is difficult to say whether the medicine or the electricity gives a benefit. Edison[1] has made experiments with cataphoresis in gouty concretions as follows: A galvanic current of twenty milliamperes was passed through a jar containing an aqueous five-per-cent. solution of lithium chloride, in which the patient immersed his hand up to the wrist. The other hand was similarly immersed in a solution of common salt. The current was given four hours a day for six consecutive days. The size of one of the joints was diminished and pain relieved.

The writer has tried this treatment but found it too heroic, painful, troublesome, requiring too much time, with results not in proportion to the process. Besides, patients as a rule will not submit to four hours' daily treatment.

As a rule galvanism has been recommended in these diseases by former authors. Professor Senator[2] (Berlin) suggests the descending galvanic current in rheumatism; Remak[3] uses strong galvanism. The papers mentioned are rational; they are written with an honest purpose, with close observation of results, and must be accepted as reliable. There is no contradiction even if different currents of electricity have been used and reported successful. There is only one electricity, which is always mingled with some magnetic power; but there are different currents, instruments, and ways to apply it as an electro-therapeutic measure; which to choose, in the particular case, is the art of the physician. Each author mentioned has good reason for applying the current indicated according to the disease, its stage, symptoms, indications, and complications, and the patient himself. The writer would select the galvanic current in cases as mentioned by Dr. Cleaves and others. The static and faradic currents belong to the same class, only one has a higher tension, and as such should be selected in appropriate cases. The writer is familiar with the wonderful power of faradization in absorption of fluid in anasarca, as Dr. Davis has used it. The reasons for selecting a particular method or current will be given later, after a general consideration about uric acid.

Uric Acid.—The literature on uric acid in disease is very abundant, and theories and practice of different writers vary greatly, so that mooted questions arise, and therefore also arise doubts about the present status of many diseases and their treatment. In many ways acknowledged authorities make just opposite statements. The writer knows his shortcomings and his inability to settle such questions, and will not attempt to make positive statements. He also finds that his experiments and the tables thereof are not of any practical value. Hence he offers only observations and references which will show the diversity of views.

Excretion of Uric Acid.—According to Professor Wormley the normal standard of excretion of uric acid is eleven grains daily. In contradiction our modern physiologists state that uric acid seldom, if ever, exists in a free state in normal urine.[4] In normal urine uric acid is combined with sodium, ammonium, potassium, calcium, and magnesium. Therefore the presence of uric acid in the urine manifests a constitutional disease, in which one or several organs are involved, as the liver, assimilation in general, stomach and bowels in particular, the blood, kidneys, ureter, bladder, urethra, etc. As a rule we are told that the retention of uric acid in the system is the cause of disease, while some may state that the uric acid is a consequence of the disease.

The quantity of uric acid in the system cannot be known, because, if the urine contains a large percentage of uric acid, that does not indicate the degree of excess in the system, nor does a clear urine with little or no uric acid prove the absence of uric acid from the system.

The reaction of urine with uric acid is generally considered acid, and a consequence of faulty diet, but it has been also observed that during an abundance of uric-acid excretion the reaction is decidedly alkaline. One observer found a uric-acid diathesis from the drinking of alkaline water.[1]

The cause of uric acid and accompanying gout is generally traced to overfeeding and a consequent plethora, which, however, do not explain the extreme anæmia and weakness observed in many cases.

The presence of uric acid is found in many diseases, of which the following may be mentioned: angina, bronchitis, catarrh, mitral stenosis of the heart, dyspepsia, diseases of the liver and bowels, nephritis, anasarca, headaches and hyperæmia of the brain, lead poisoning, genito-urinary inflammations,[2] neurasthenia,[3] rheumatism, gout, atheroma in arterioles.[4] The following are some of the conclusions of Dr. Pearce's paper:

"That disturbed metabolism is the cause *sui generis* of a number of symptoms in many constitutional diseases.

"That finding, as we have found, such variations in the quantitative findings of uric acid in the same case under apparently similar symptomatology, and with much variation in diet, exercise, etc., we must assume that the cause in many cases is not dietary indiscretions or idiosyncrasy.

"That certain persistent occipital headaches, not relieved by proper glasses or eye treatment, may be due to uric acid deposited in the meninges."

At the last meeting of the American Medical Association in June, 1897, at Philadelphia, in a discussion on gout, Dr. H. C. Wood made some remarks that deserve mention. "He wished it clearly understood, in the first place, that all our scientific knowledge of gout at present amounted to little more than a mass of trundling expectation upon which hereafter was to be built some true knowledge."

The field of uric acid in disease is so wide, and our knowledge about it so indefinite, that it prompts the writer to abandon the larger field and confine himself to gout and its electric treatment, giving good reasons for the selection of the proper current.

Gout may be acquired, and acute or chronic; of the latter, gout as an inherited disease will be particularly considered in this paper.

The Theory of Gout.—There are different theories about the cause and progress of gout and its treatment. The following appear worthy of note:

Gout is a constitutional disease. During painful attacks there is a retention of uric acid and its salts in the system and in the blood. The diathesis being present, faulty digestion causes an attack. The manner of the production of uric acid is not sufficiently

New York Medical Record, November 15, 1890, p. 540.
: Ziemssen: "Pathology and Therapy," vol. xiii.
[2] Remak: "Galvano-Therapie," Berlin, 1858, p. 413.
[4] Flint's "Physiology," p. 116.

[1] Dr. W. W. Reed, Fowler, Col., Journal of the American Medical Association, August 28, 1897.
[2] "The Relation of Uric-Acid Excess to Genito-Urinary Inflammations," by Bransford Lewis, M.D., Journal of Cutaneous and Genito-Urinary Diseases, July, 1897.
[3] "The Rôle of Uric Acid in Neurasthenia," by F. Savary Pearce, M.D., Virginia Medical Semi-Monthly, June 25, 1897.
[4] Dr. N. S. Davis, Jr., meeting of the American Medical Association, June 4, 1897.

known. The spleen is probably a factor in its causation.[1]

The theory of Garrod[2] is that the kidneys are diseased. An acute relapse of gout is caused by the irritation in the tissues pregnant with retained uric acid. Prognosis in chronic gout is that generally it ends with death, either after long sufferings through complications or suddenly, as in apoplexy or angina pectoris.

Professor Senator says that treatment effects amelioration and cessation of attacks, but no permanent cure; relapses appear at *locus minoris resistentiæ*.

Treatment consists in medicines, diet, exercise, mineral water, and electricity.

1. Medicines have been recommended in great variety and combinations. Some benefit typical cases and may not help others. Sometimes all are unsatisfactory, and one remedy which always has cured one patient may suddenly prove useless for the same individual. Ebstein says alkaline remedies are to be used, not abused. In some cases, however, alkalines aggravate and acids may benefit. Therapeutics of all kinds and forms have been used, but to enumerate them here would be useless.

2. A specific diet ought to be good, but the statements of authorities are very contradictory. Some order a vegetable diet or milk, and no meat; others say meat only. Dr. Senator recommends a mixed diet with avoidance of fat. One patient did not improve on vegetables; was told to eat less of vegetables, more of meat, and improved at once. Almost all physicians prohibit coffee, tea, and alcoholic liquors, which appears to be rational, but in practice we find that patients need whiskey as a diuretic, and grow worse and weak if the whiskey is omitted. My friend, Dr. A. T. E——, says he has attacks of gout, and cures himself by drinking champagne, while other patients provoke an attack by drinking champagne. Dr. Armstrong[3] in the *Journal of the American Medical Association*, May 1, 1897, states that he gives only red meat and hot water.

3. Exercise, active or passive, is perhaps one of the best remedial agents, because it regulates the circulation, stirs up the action of the different organs to a normal state, and thereby eliminates the effete material from the body. Bicycle riding is undoubtedly good exercise.

4. Mineral waters, drunk at the spring, have done good for various reasons, of which one is the execution of all strict orders from the physician at the spring. Carlsbad is the principal place where patients are sent. However, many sufferers get well from electric treatment without ever being at Carlsbad. The writer knows also of some cases which were benefited by drinking imported Teplitz water, which is pleasant to the taste and acts on the mucous lining, and particularly on the kidneys, as a valuable diuretic.

Electricity, sometimes in combination with but often without the aid of any other remedy, has positively cured rheumatism and gout. Different instruments and currents may be used with success, as indicated in the papers mentioned before. In some cases it will be well to vary the mode of application. Gout may be acute and acquired, or hereditary. In the first form a positive cure can be promised in almost every case. The chronic form is more difficult to cure, and the treatment must be continued over a longer period and new attacks guarded against by the early application of electricity. If some cases of chronic gout are not cured, at least the single attacks are, and relapses can be prevented by attention and proper treatment in time, when the system manifests any abnormality. This rule has particular reference to the treatment of hereditary gout with the static current, and to give evidence of this is the particular purpose of this paper.

Static Electricity.—First it must be shown what qualities the static current possesses which make it desirable to choose it in these affections, and what effect it may have in mastering and correcting the irregularities in the system.

Static electricity has the same properties which are attributed to general electricity. It has a high-potential, high-frequency current. The physiological effects of high-frequency, high-potential currents are so well described by Dr. W. J. Morton, who is the pioneer in the therapeutic use of static electricity, and his writings have been so often quoted, that the writer can well omit repeating and referring to them.

We use static electricity in different ways—as massage, as an induced current, in which shape it takes the place of faradization, but generally as a spark or breeze in different varieties. As a rule the patient is placed on an insulated platform, with which the positive pole of the machine is connected. The electricity is thereby concentrated in the platform, and the patient becomes the end of the positive electrode, in which the electricity accumulates. The other electrode connected with the negative pole is managed by the operator and brought near the patient's body. Sparks or breezes, as the case may be, are given, or, more correctly, taken from the patient. For any particular reason the poles may be reversed if the operator sees any indication.

The curative power of the static application has been tried fully as follows:

1. Static electricity is generally diffused in the body, and penetrates deeply through tissues and joints.

2. It acts as a general tonic.

3. The breeze allays any pain, in most instances in five minutes. In very painful affections of the joints it needs several applications before the pain and infiltration are removed; but when an attack is in progress, after three applications in a single day freedom of motion and cessation of pain should be expected.

4. Headaches and confusion of the brain and the uneasiness of the mental forces are removed by the breeze.

5. It equalizes the temperature and restores it to a normal degree, no matter if the temperature has fallen or been raised through the disease. (Dr. Cleaves has made valuable observations on this point.)

6. The circulation is equalized; one distressing symptom in gout is the feet being so cold, like ice—a feeling as if they do not belong to one's body, numb, so that locomotion is almost impossible. The sparks will equalize the blood circulation, and thereby remove that distressing symptom.

7. The animal heat is favored, the action of the skin restored, and even diaphoresis evoked.

8. It stimulates the organs to a better secretion. The liver, bowels, kidneys, etc., which were sluggish or were interrupted in their actions, will resume their function.

9. It favors the excretions of effete material, purifying the system of uric acid, etc.

10. It removes nervous debility.

11. There is an absorption of inflammatory products, in joints as well as of fluids, as we find in anasarca.

12. It replaces exercise and acts as passive motion.

These effects are well established, and have been observed by many authors, as well as by the writer on himself and on other patients.

Analysis for Uric Acid (after no treatment and after electric treatment).—The following analyses by Mr.

[1] Ranke, H. "Beobachtungen über Harnsäure." Munchen, 1858.

[2] "The Nature and Treatment of Gout and Rheumatic Gout," by Alfred Baring Garrod, F.R.S., M.D., London, 1859.

[3] "The Value of an Exclusively Meat Diet in Chronic Gout," Journal of the American Medical Association, August 14, 1897.

Murray, a practical chemist, of the urine of a patient having hereditary gout are submitted to show the relative excretion of uric acid at different periods of treatment. One pint of the quantity voided during the last twenty-four hours was submitted for analysis in each instance. The result was as follows:

Specimen I.—No treatment. September 9, 1897, two weeks after a slight gout attack. During these two weeks the patient had not had any treatment. After a hot day forty-six ounces was passed in twenty-four hours, of which one pint was submitted for analysis, with the following result:

Total quantity for twenty-four hours, 1,305 c.c.= 46 oz. Color, pale, cloudy. Odor, urinous. Reaction, strongly alkaline (ammoniacal). Specific gravity, 1.020 at 15° C.

Deposit, quantity, and general appearance: Abundant, light, flocculent. Phosphates present, albumin present. Uric acid, 0.334 gm.=5 gr. for twenty-four hours. Microscopical examination—triple crystals and amorphous phosphates.

Specimen II.—After three days' electric treatment. An attack of gout beginning; liver sluggish; tongue, thick white furred; left foot very œdematous and painful; impossible to wear a boot; general uneasiness. Static sparks were given for three days, every day for ten minutes, which treatment prevented a serious sickness, and cured. Treatment was given on September 12th, 13th, and 14th. No medicine, no particular diet. September 15th, one pint for analysis of fifty-nine ounces of urine passed in twenty-four hours. Report received as follows, No. 143:

"The Merck Analytic Laboratories,
"New York, September 17, 1897.

"Physical and chemical character: Total quantity for twenty-four hours, 1,745 c.c.=59 oz. Color, pale; odor, strong. Reaction, acid. Specific gravity, 1.020 at 15° C.

"Deposit, quantity, and general appearance: Small phosphatic deposits present. Albumin present, after persistent and careful tests. Uric acid, 0.1360 gm.=2.09 gr. for twenty-four hours. Microscopical examinations show nothing particularly pathological."

On comparison of the two specimens we find that after the treatment by the static electricity for only three days and during a gouty attack, the patient was cured, the attack abated, the urine became acid, phosphatic deposits and albumin were less, and the excretion of uric acid was reduced considerably; while the first specimen, taken when the patient was apparently well, without any electrical treatment, showed more pathological changes of a grave character, in which the larger amount of uric acid is the most important point. To recapitulate, the uric acid in the two cases was: without treatment, excretion of uric acid, 0.334 gm. for twenty-four hours; after three days' electric treatment, excretion of uric acid, 0.1360 gm. for twenty-four hours.

Hereditary Gout.—While it is admitted that gout is a diathetic disease, such diathesis may be entirely congenital and inherited, in which case the afflicted are not able to acquire or prevent the disease. The statistics of Scudamore prove the statement, as in his observations of five hundred and twenty-three cases of gout he traced three hundred and nine to inheritance, the disease having existed in one or two of previous generations. Even Garrod states fifty per cent. as hereditary. The writer has authentic assurance of inheritance and will state only one family history, and from his own observation. The disease ran through three generations, in two continents, and the observations begin with the grandmother, who died in 1836 in Germany. She had been married twice, had four daughters, two by each husband. All four daughters married; all had gout and died from complications: one of apoplexy in 1838, one of angina in 1840, and the last had severe attacks and died of anasarca in 1875, at the age of sixty-nine years. Some of the male cousins of the old lady suffered also with gout. The children of the daughters of the third generation all suffered with gout. One widower married again and his second wife had three children, which are well and still alive, while the three children of the first (gouty) wife all died in consequence of complications of gout; the last son in 1888. Two children of the daughter who died in 1875 went to America, had severe attacks of gout, and the daughter, a widow, died with meningitis in 1888, while her brother succumbed to heart failure in 1886, both with complications of gout and during attacks. The children of the other two daughters were reported dead, except two males, who in 1890 led a miserable existence in Germany and had gouty spells with deformities of the joints. The sufferers in this family were mostly females, none of whom have been reported as high livers; none drank liquors or beer; of some the writer knows positively that they never drank, and others may have drunk a glass of wine on particular occasions like birthdays. This history has been mentioned to show (1) that the gout was inherited, that (2) it could not have been caused from faults in diet or drinking liquors, and (3) that it occurred mostly in females, against the reported statistics which show a very small precentage of females having gout.

The clinical history of chronic gout has been often and well described by many authors; hence only some symptoms will be mentioned here, for the purpose of showing the indications for making static applications. After the patient has had experience for years, he may anticipate each new attack and watch for the same. It generally begins with some dyspeptic symptoms: the appetite is failing, the liver is sluggish, the bowels are constipated; gases in the bowels annoy; there are headache, general depression, failing of mental brightness, no inclination to move about, a slight rise of temperature, a beginning of stiffness in the joints, pain and swelling of the metatarso-phalangeal joint of the great toe, insomnia, general restlessness, pruritus, cloudy urine with excess of uric acid. If only some of these symptoms are observed, static electricity is indicated, as sparks; and in most cases this treatment is so successful that amelioration is produced at once, and after several applications the patient is cured of that attack and restored to his usual health. Medicine is not necessary. If the right time has passed over and the symptoms progress with severe pain in one or more joints, with œdema, so that walking is impossible, the static applications must be oftener made, about three times a day to the swollen joints. The breeze may be applied, or an electrode used in massage; breeze to the head is very beneficial and agreeable. If the disease is neglected, the next step in its progress is increased pain, more joints are affected, the veins are enlarged, more uric acid is retained in the system, and nephritic colic ensues. Cystitis or even urethritis and immobility are increased; there are delirium, excruciating pains, etc. These complications may cause death.

If the static electricity is applied at the right time with care and attention, every attack can be allayed or even prevented, so that the patient is kept comfortable and in apparent good health. This electricity will do the work without any other measures, but adjuvants are not contraindicated and may be used. In all cases under his observation the writer has succeeded perfectly, as stated. As an illustration he will report now phases of his own case:

Case of Hereditary Gout.—Medicine failed, static electricity succeeded. R. N—— has inherited gout

from his grandmother. He has had attacks for twenty years, which became in time more severe and frequent. He has had the usual symptoms, excruciating pains, with all the sufferings described in text-books. Often he could not move about at all, or, if a little better, locomoted in agonies on crutches. Some attacks were aggravated with colic, during which kind friends watched for an opportunity to perform laparotomy for suspected appendicitis. Medicines allayed pain sometimes, at others the same remedies as well as different ones failed. The climax came in September, 1892, when it seemed that in addition acute articular rheumatism complicated the case so much that the pain was constant and excruciating in the joints affected, that any motion or a turning in bed was an absolute impossibility. The case was then treated by a physician of the highest standing and reputation, a professor in the largest college of New York, a man of ample means, a gentleman in every sense of the word, whose attention—a work of love—could not be exceeded by any one, and whose kindness never will be forgotten. The treatment consisted in medicine, pushed for many weeks, and gave no relief or benefit. The prognosis was bad, and ended in the forecast that even if the patient recovered from the present condition it would be impossible for him to exist without spending four or six weeks every year in Carlsbad. The patient could not take more medicine, grew very weak, in which state he was seen by several members of this association, who never expected to see him alive again—in fact he was once declared dead. At a critical moment Dr. Nunn and our lamented member, Dr. Hutchinson, suggested whiskey and beef juice to sustain life, which resulted in marked benefit. Improvement followed through time and sustaining measures, but the patient remained in a low state, crippled, and obliged most of the time to move about on crutches. In the beginning of 1893, friends recommended static electricity, and the first applications were given kindly by Dr. Margaret A. Cleaves three times a week, so that in due time the patient could walk well without any support, without pain. In the spring he met in a car his former medical attendant, who was surprised to see him looking so well, and would not believe that static electricity, without any medicine, had made the improvement. The static applications have been continued at home, whenever required. Sometimes on purpose treatment was delayed until a new attack had been so far advanced that the joint of the great toe was swollen, and the pain increased to such a degree that when he arose in the morning it was impossible for him to use the limb for walking, and locomotion had to be made with a crutch downstairs to the office, where static electricity was applied. The first *séance* ameliorated the bad symptoms, the second application made the state comfortable, and the third—all in the same day—cured the attack. No extra diet was enforced (whiskey moderately used acted as a diuretic and benefited much). Occasionally alkalies were added, which never benefited and sometimes even increased the excretion of uric acid and the general irritability. Through the static-electricity treatment the patient has been kept well, so as to enjoy life without any serious sickness for nearly five years. The hereditary gout is not eradicated, but all acute attacks have been warded off by the timely use of the static machine. The treatment consisted in sparks and breezes as indicated.

Conclusions.—1. There is a variety of causes and symptoms of gout.

2. The diet and treatment, etc., cannot be stated as a routine for all cases alike.

3. It is wrong to treat the disease; the patient must be treated as an individual, according to indications.

4. There are some points in gout and the uric-acid diathesis which are not understood at present.

5. Hereditary gout exists, and will manifest itself in individuals without their own fault.

6. Hereditary gout as a diathesis cannot be eradicated by any treatment, nor is it the consequence of overfeeding or the use of fermented liquors, for the reason that it has been observed in females who dieted and never drank liquors or beer.

7. Static electricity is the best treatment in hereditary gout, and will prevent attacks, if used judiciously at the right time, and thereby keep the patient comfortable and apparently well.

8. Static electricity and other electric currents will cure many of the other varieties of rheumatism and gout.

[illegible]

Progress of Medical Science.

Streptococci of Erysipelas.—At the last meeting of the Société de Biologie, Dr. Lemoine reported that he had isolated from four cases of erysipelas four streptococci, all of which proved inoffensive to rabbits vaccinated with Marmorek serum, although they were rapidly fatal to others. The streptococcus of erysipelas is therefore not always specifically different from that of Marmorek.—*Le Bul. Méd.*, October 31st.

Blastomyces in Epithelioma.—In a study of blastomyces found present in certain epitheliomata, Binaghi (*Zeit. für Hyg. und Infect.*, vol. xxiii., fas. 2) concludes, from the constant presence of parasitic forms of characteristic feature readily distinguished by coloring stains and other chemical substances, that they are to be regarded as specific blastomyces. They are not found in other tissues, either normal or pathological. That they are not accidentally present, but are causative agents of the disease, is to be inferred from their regular disposition and the relation which they bear to the cells of the new growth.

Diagnostic and Therapeutic Utility of Lumbar Puncture.—Monti (*Archiv für Kinderheilkunde*, B. xxiv., H. 1 and 2, p. 94) reports the results noted in twenty-one cases—fifteen of tuberculous basilar meningitis, five of acute epidemic cerebro-spinal meningitis, and one of acute hydrocephalus secondary to cerebro-spinal meningitis—in which lumbar puncture was employed for diagnostic and therapeutic purposes. In the cases of tuberculous meningitis he found puncture to be entirely without diagnostic or therapeutic value. In cases of acute cerebro-spinal meningitis, examination of the fluid obtained by puncture afforded certain reliable indications as to the nature of the disease. In cases, however, in which the acute stage has already been passed and only symptoms of hydrocephalus are present, examination of the cerebro-spinal fluid yields no reliable diagnostic information. Frequent repetition of the puncture in cases of cerebro-spinal meningitis, with evacuation of sufficient quantities of fluid, is not without favorable influence upon recovery, at least in some cases and at an early stage. The evidence, however, is considered not yet conclusive. Stadelmann (*Deutsche medicinische Wochenschrift*, November 18, 1897, p. 745), from observations in a considerable number of cases of tuberculous meningitis, purulent meningitis, cerebral abscess, cerebral tumor, cerebral hemorrhage, embolism, and thrombosis, arrives at the conclusion that lumbar puncture is without therapeutic value. In diagnosis it is of significance only when it yields a positive result, while no conclusion is to be drawn from negative findings. Meningitis is to be diagnosticated only when bacteria are found in the turbid fluid removed by puncture.

MEDICAL RECORD:

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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TYPHOID FEVER FROM INFECTED MILK.

THE typhoid epidemic at Paterson, N. J., which has been traced to one source of milk supply, affords an exceedingly apt illustration of the real dangers which await innocent and unsuspecting consumers of a widely used and very essential article of food.

While the health officer of Paterson deserves much praise for the prompt and efficient manner in which he traced the source of infection, it is nevertheless a great pity that there was any occasion to demand his skilled services. In the instance in question the same old story of origin is told, in somewhat different form, it is true, but with the same moral at the end. A certain dairyman, acting as a distributing agent for a number of neighboring small dealers, used the water of an infected pond for cleansing his cans. Within twelve feet of the place of washing there was a pipe which carried the drainage from an outhouse infected by typhoid discharges from his sons, who during the preliminary stages of the disease also worked in the dairy. This milk was distributed to such a widely extended district that it is as yet impossible to learn the actual amount of damage that has been done, for, generally speaking, no one can tell whence his milk may come or through how many polluted hands and foul washings it may pass before it reaches his table.

We have still in our mind similar relations of cause and effect in connection with other epidemics of typhoid from milk infection, notably those in Bay Head and Montclair, N. J., in 1894, and in Stamford, Conn., in 1895. In all these the origin of the disease was traced directly to typhoid bacilli conveyed in milk contaminated by dealers having typhoid fever in their families. In the Bay Head epidemic a cowherd, while suffering from walking typhoid, did all the milking for a dairy and infected the milk with his unclean hands. The epidemic in Montclair started from a baker who, while caring for a case of typhoid fever, repeatedly washed his infected hands and allowed the drainage to enter a well, the water of which was used for washing cans in which ice cream was made. In the case of the Stamford epidemic, which was remarkable for the number of persons stricken, the disease was spread by a camp of Italians who infected a well in its immediate vicinity. The water from the latter was used by one milk dealer for washing his cans, and to this particular source were traced fully three hundred and sixty of the reported cases.

These instances of the spread of the fever by milk prove what can be done by competent investigation and systematic examination of the circumstances connected with its spread; but how many similar cases are there in which no such pains are taken and in which the origin of the disease is simply unexplained? Notwithstanding what may be said to the contrary, it is still a generally accepted fact by the profession that typhoid fever never originates *de novo*. It is safe to say that, whenever sufficient pains are taken, the disease can always be traced to a given point of transmitted infection.

This fact, it seems to us, cannot be too forcibly impressed upon the medical man whenever he is called to a new case. If he has not the time or opportunity to trace the particular invasion to its source, his bounden duty is in the direction of making an immediate report of the existence of the fever to the district health authorities. It is quite true that the attending physician can give all the necessary sanitary directions which may guard against the spread of the disease, but in matters concerning the health of a neighborhood exposed to a common contamination he is virtually powerless to act, save by suggestion and advice. If the physician who attended the fever cases at the dairy in question had done his full duty, how much sickness and perhaps death would have been avoided, and how many victims of his culpable neglect might have been spared their present suffering!

DEFECTIVE MEDICAL EDUCATION.

THE epidemic of yellow fever in the South may turn out, after all, to be not altogether an unmixed evil. If by its means more attention should be paid to the study of bacteriology and the etiology of yellow fever itself should be made clear, then it may be said that the good it will have done will outweigh the evil. *The Hospital* of October 9th has an editorial referring to a speech made by the dean of St. George's Hospital at the opening of the winter session of the medical school. In this speech some of the defects in the system of modern medical education are pointed out, and particularly the want of knowledge in Great Britain in regard to tropical diseases. These remarks of Dr. Manson were full of truth, and apply in a lesser degree to the course of study in use in this country. There is no doubt that America is far ahead of England in matters bacteriological, but here, as there, the young medical men who are turned out by the thousands yearly are hardly so thoroughly equipped in practical medical knowledge as they might be. Dr. Manson shows that the curriculum is decided by the examinations, and that a student will not trouble himself concerning any subjects outside the scope of these examinations. Therefore (as doubtless not infrequently happens) when he becomes the proud possessor of a license to practise, he may and probably will be completely ignorant of many diseases. In both countries

a large proportion of medical men will practise in hot climates, and their training is too often not of a nature to fit them for tropical practice. Without a doubt the curriculum in England is not calculated to do so.

According to *The Hospital*, the fact is notorious that men newly qualified, and who should be conversant with the latest improvements and developments in medical science, display a total lack of this knowledge.

SHALL THERE BE A MEDICAL COMMISSIONER OF CHARITIES?

With the approaching change in our municipal government, there comes into existence a new and greatly enlarged department of charities. Henceforth the public charities of the counties of New York, Kings, Richmond, and a part of Queens are to be combined under a single commissioner, having its central office in New York. The occasion seems to us fraught with the deepest interest to the medical profession and to the public. Already the question is being very earnestly and thoughtfully discussed, both in the profession and by workers in charities: Why should there not be henceforth a thoroughly qualified medical commissioner in this governing body? The reasons given in favor of that proposition are, in our opinion, not only unanswerable, but so imperative that the profession ought to bring them to bear upon the appointing power with all the force necessary to their full recognition.

Let us consider the special functions of this department of charities. First, the institutions under its management are hospitals, dispensaries, and asylums. The New York division alone contains four dispensaries, treating over one hundred thousand yearly, and sixteen hospitals, three of which are the largest in the United States. In New York and Kings new hospitals are constantly being both planned and constructed, and the creation of these institutions is to continue from year to year as the wants of the sick poor demand. It follows that the duties of the commission will be chiefly devoted to the work of hospital construction and management, while it may safely be stated that the current every-day duties of the commissioner of the boroughs of Manhattan and the Bronx will be nine-tenths of a purely medical character. Second, an examination of the public charities of New York proves the folly of committing the establishment and management of these institutions entirely to unskilled laymen. For fifty years the department has developed without the slightest regard to scientific methods. With the most beautiful and healthful sites for the development of a great system of public charities, the finest in the world, New York has to-day to show for the millions of money expended on this department a large number of uncouth, ill-placed, and worse-constructed buildings, scattered indiscriminately over the islands of the East River. Third, if we examine these institutions, we find the most crude and inefficient methods of organization and an almost total lack of useful classification of their inmates. Here is a population of seventy-five hundred people, representing every phase of destitution, without the slightest effort being made to study the conditions which brought them to this estate, and without a suggestion or even a thought of applying those remedial measures which would enable them to become self-supporting.

We believe that if a thoroughly competent medical man had been in that commission for the last quarter of a century, we should to-day have a department of public charities unrivalled in this or any other country. Our profession has been far too negligent of its duty to the public interest in allowing this department to develop from year to year under the blighting influences of political partisanship, without even raising its voice in protest. Shall we allow the present opportunity, when the combined charities of the greater city are to come under the control of an entirely new commission, to pass without an effort being made to secure the appointment of at least one medical commissioner? It must be assumed that the incoming political party is desirous of giving to the new city a popular administration of the several departments, and to this end will adopt any reasonable departure from old methods. From every point of view it is apparent that a medical commissioner, especially for the boroughs of Manhattan and the Bronx, whose public charities consist entirely of hospitals and asylums, is not only desirable but absolutely necessary for their efficient management and future proper development.

PUBLIC MONEY FOR PRIVATE CHARITIES.

The annual protest of the large majority of the medical profession of this city against the appropriation of public money for private charities has again been fruitless of the desired results. The Medical League, the Medical Society of the County, and the County Medical Association, through their representatives, made a vigorous fight before the board of estimate and apportionment on Wednesday of this week, and brought to the surface of public discussion many of the vital questions which lie at the root of the present abominable and outrageous methods of dispensing medical charity. In spite of the forcible arguments to the contrary, the board in question voted the sum of $1,312,420 for the very questionable purposes named.

It was very justly claimed by the opposers of the measures that in most of the cases in which claims were made the different institutions were distinctly private enterprises that throve by the annual begging, and gave no adequate returns in really charitable work for the donations received. Some of these, it was urged, either had large annual incomes of their own, were managed wholly in the interests of medical schools, or were carried on for the benefit of close corporations, which seemingly were above all the usual liabilities of strict business accountability. All of which is strictly true, with great shame be it said.

While it is fair to say that there are several really charitable institutions in this city that deserve help from the public, the number is so exceedingly small, as compared to that of the unworthy ones seeking such aid, that one-tenth of the amount of the appropri-

ation would be all that would be actually and legitimately needed. Our good mayor whose charming weakness and genial flexibility are so charitably excused by his friends, voted for the full appropriation. Probably in the excitement of the moment, with his usually irresistible propensity to do something startlingly inconsistent, he forgot the little speech he made at a recent doctors' dinner, in which he declared, as solemnly as was possible for the occasion, that one of the greatest abuses of charity was the appropriation of public money for private purposes.

WANTED, A SANITARY CLEARING-HOUSE.

The usual crop of typhoid cases is attributed by Dr. Edmund Glynn to the holidays. The *British Medical Journal*, referring to this, says that "it is almost a pity that there is not in England some sort of sanitary clearing-house to deal with accidents of this kind. Surely the origin of typhoid contracted at a watering-place ought to be investigated. There is a sort of conspiracy of silence on the part of the sanitary authorities of many watering-places which augurs an evil conscience on their part." While we are far from saying that the city health officer is always right in looking abroad rather than at home for the origin of his typhoid cases, we think it might be not amiss if medical men when asked to recommend a health resort would give the preference to such as are least guilty of this policy of concealment.

News of the Week.

Associated Health Authorities. — At the annual session of the Associated Health Authorities, held at Woodbury, N. J., on November 29th, Dr. Henry Mitchell, New Jersey, secretary of the State board of health, delivered an address on "Boards of Health." Dr. M. P. Ravenel, of the University of Pennsylvania, read a paper on "Tuberculosis and Milk Supply." Dr. T. B. Rodgers read a paper on "The Relation of Contagious Diseases of Animals to the Public Health."

The Plague in India.—The epidemic of the plague shows no sign of abatement at Poonah, Surat, and elsewhere in the Bombay presidency. It has extended to Belgaum and Ahmednagur. At the latter place two-thirds of the inhabitants have already sought safety in flight. The health authorities of Bombay reported that there were twenty-six new cases of the plague, and ten deaths in that city on November 23d.

Sickness and Death in Havana.—It is stated in the latest issue of the public-health reports of the Marine Hospital service that there were six hundred and nine deaths in Havana during the preceding week, equivalent to an annual rate of 158.3 per 1,000. This estimate is only approximate, and it is believed that many deaths, ten per cent. or more, are not reported. According to this report there are about three hundred cases of yellow fever in that city. There were twenty-four deaths from that cause during the week, but two of that number occurring among the civilians, the others in military hospitals. The deaths from enteric, malarial, and the so-called pernicious fevers show a marked increase over the preceding week. The deaths from intestinal diseases are about one-third of the total deaths, but nearly half of those occurring from enteritis are from starvation pure and simple.

Yellow Palms in Typhoid Fever. — A writer in *The Lancet* says that he has remarked in cases of typhoid fever a yellow discoloration of the palms of the hands, which is usually noticeable in the second week and gets darker till the crisis, then gradually disappears as the temperature regains the normal. He asks whether this is a pathognomonic symptom of the disease, or whether it has been merely a chance occurrence in his cases.

A Life of Pasteur.—It is announced that M. Vallery Radot, the son-in-law of M. Pasteur, has nearly finished the biography he has been busy on for some time past. It relates the story of M. Pasteur's life, and includes extracts from his letters.

A Tragedy and a Fortunate Escape.—Last Saturday Thomas Button bought a can of sauerkraut. His wife opened it and put the kraut on the table for dinner, raw. In the can was a piece of meat which was thrown to a small house dog, and he ate it. Mr. Button did not eat of kraut, but his wife did, and shortly after she vomited violently a number of times, and about half an hour after the meat was given to the dog he was found under the bed dead. Mrs. Button thinks a cup of hot coffee was all that saved her life. —*Altoona Journal.*

The American Society of Naturalists. — The American Society of Naturalists and the affiliated societies will meet at Ithaca, N. Y, on December 28th, 29th, and 30th. The other societies meeting with the naturalists are: the Association of American Anatomists, the Association for Botanical Morphology and Physiology, the American Morphological Society, the American Physiological Society, the American Psychological Association, Section H (anthropology) of the American Association for the Advancement of Science.

Medical Periodicals in the United States. — We find, from a newspaper directory recently issued, that the medical profession of that country supports directly or indirectly 275 periodicals, of which 10 are issued weekly, 11 fortnightly, 225 monthly, 6 bi-monthly, and 23 quarterly, with a combined yearly circulation of 16,017,200 copies. Estimating that there are in round numbers 120,000 medical men of all schools north of the Gulf of Mexico, of whom probably not over 80,000 subscribe to a medical journal of any kind, this vast amount of literature seems an enormous burden to carry.—*Health*, November 13, 1897.

A New Pædiatric Journal.—Dr. Jules Comby, of Paris, formerly editor of the *Revue de Médecine Infantile*, which ceased publication about a year ago, is about to establish a new journal, entitled *Archives de Médecine des Enfants*. The new archives will be

published by Drs. Lannelongue, Grancher, Hutiner, Sevestre, Moizard, Brun, and Marfan, under the editorial supervision of Dr. Comby. The journal will appear monthly, beginning with January, 1898.

"The Philadelphia Medical Journal."—The Philadelphia Medical Publishing Company has been incorporated under the laws of Pennsylvania, for the purpose of publishing a weekly medical journal to be known as *The Philadelphia Medical Journal*. The management of the organization has been intrusted to a board of trustees, including representatives of leading medical schools and other public-spirited individuals. Dr. George M. Gould has been chosen editor, and it is expected that the first number of the new publication will appear January 1, 1898.

Physicians in Columbus.—An item is on its rounds through the papers, medical and lay, to the effect that there are thirteen hundred physicians in Columbus, Ohio, or one to every seventy-seven people. The *Columbus Medical Journal* corrects this, saying that there are only three hundred physicians, or one to every four hundred and sixteen people. So there is still room for one more in that pleasant and healthful city.

Obituary Notes.—Dr. Julius A. Skilton died on November 20th, at his home in Brooklyn. He was a surgeon during the civil war, and was later a war correspondent in Mexico during and after Maximilian's defeat. He was for some time consul-general in Mexico City, and finally made his home in Brooklyn. He had not practised medicine for a long time.—Dr. George H. Horn, of Philadelphia, who had been for many years secretary and librarian of the American Philosophical Society, died on November 25th, aged fifty-eight years. He was graduated in medicine from the University of Pennsylvania, and was an honorary member of a number of European scientific societies. He was president of the American Entomological Society, and next to the late Dr. John Labonte he was looked upon as the leading entomologist in America. He was active in the Academy of Natural Sciences, and for some time served as its corresponding secretary. His death was the result of apoplexy, from which he suffered a first attack about a year ago.—Dr. R. N. Short died suddenly at Mechanicsburg, Pa., on December 1st, of heart disease, at the age of sixty-six years.—Dr. E. L. Welling died at Pennington, N. J., on November 29th, of heart disease. He was a graduate of Princeton University and of the medical department of the University of Pennsylvania. He was secretary of the Third Corps Union, which was originally organized for the relief of wounded soldiers, but after the war became entirely social. He was for many years chief surgeon of the New Jersey national guard. In 1896 he became chief surgeon of the Soldiers' National Home, at Hampton, Va., which position he held for about a year, resigning on account of illness.—Dr. Martin Van Winkle, of Little Falls, N. J., died on November 29th, of apoplexy, at the age of seventy-three years.—Dr. Alexander W. Stein died at his home in this city, on December 6th, at the age of fifty-seven. He was born in Hungary, but was brought to this country by his father when four years old. He was a graduate of the New York University Medical School in the class of 1864. He was visiting surgeon to the City Hospital, professor of physiology at the New York College of Dentistry, and a member of the County Medical Society and the Academy of Medicine.—Dr. William N. Gilchrist died at the Windsor Hotel, on December 3d. He was born in Kortright, N. Y., in 1823, and after being graduated from the Vermont Medical College, came to this city in 1847, practising his profession until he retired, about fifteen years ago.—Dr. James Olmstead died at the Hotel Grenoble, in this city, on December 4th, at the age of forty-eight years. He was graduated from the Yale Medical College in 1874. For the past eleven years he filled the post of superintendent of the Connecticut State Hospital for the Insane at Middletown.—Dr. Harrison Willis, a prominent homœopathic physician of Brooklyn, died in that city on December 2d, at the age of sixty-one years. He was a graduate of the Cleveland Homœopathic Medical College in 1864.

The Late Dr. Harrison Allen.—At a meeting of the Philadelphia Neurological Society, held on the 22d of November, the following action was taken:

"*Whereas*, The Philadelphia Neurological Society has heard with great regret of the death of Dr. Harrison Allen, it desires to offer its sympathy to his family and to give expression to its sense of the great loss which has been sustained by science and the medical profession.

"Dr. Allen was deeply interested in neurology, not only as a human and comparative anatomist, but also in various practical directions, as indicated by his valuable contributions to this society and other medical bodies.

"Charles W. Burr, M.D., *President.*
"William G. Spiller, M.D., *Secretary.*"

The Marine Hospital Service.—In the report of Surgeon-General Wyman, of the Marine Hospital service, recently forwarded to the secretary of the treasury, it is stated that, during the fiscal year ending June 30, 1897, there were 54,477 patients treated at the hospitals and dispensaries under charge of the surgeons in the service. This was 673 in excess of the number treated there the previous year; but the total expenditures from the Marine Hospital fund ($538,356) were $21,000 less than those of last year. Naturally a considerable portion of the report is devoted to a consideration of the recent visitation of yellow fever in the South. Up to November 10th the number of cases officially reported was 4,198, with 423 deaths. New Orleans had 1,722 cases and 244 deaths. The surgeon-general says that there is little doubt that the work which was done by the Marine Hospital experts had a marked effect in controlling the spread of the disease and preventing a much more extensive epidemic. How the disease gained admission to this country has not yet been satisfactorily determined. The report gives a description of the national quarantine stations,

and an account of the measures taken to enforce the national regulations at certain points where the precautions taken by the local authorities were inadequate. An effort was made more than a year ago to supplant the national quarantine station on Ship Island by a State quarantine on a neighboring island nearer the shore, but it failed. The report states that attempts have been made by certain parties to excite concern respecting the Ship Island station on account of its alleged proximity to the shore. It has, the report says, been stated that the island is five miles out, whereas it is really twelve. Dr. Wyman repeats his recommendation for the enactment of a national quarantine law, but says that if a new law cannot be passed the strengthening of the present law is a matter of urgency, so that effective measures may be taken to prevent interference with interstate commerce, while also preventing the spread of disease.

Appointments at Manhattan Hospital. — Dr. Charles E. Norris has been promoted from the position of medical interne at the Manhattan State Hospital to that of junior physician. Other changes in the medical staff of this institution include the appointments of Dr. John H. Crosby as junior physician, and of Dr. Erving Halley and Dr. David E. Marshall as medical internes.

An Epidemic of Measles.—The newspapers report that a very extensive epidemic of measles is prevailing in Springfield, Ohio. On the first day of this month one hundred and fifty-one new cases of the disease were reported, and one hundred and thirty-nine cases the following day, making a total of eight hundred cases up to that date. The character of the disease is in general mild and the mortality rate is comparatively low.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending December 4, 1897. November 29th.—Passed Assistant Surgeon S. S. White detached from the *Concord* and ordered to the *Wheeling*.

A Russian Society of Ophthalmology.—The Russian minister of the interior has confirmed the constitution of a new medical society, to be called the St. Petersburg Ophthalmological Society. Dr. Dobrovolski has been elected president of the new society; Dr. Belliaminov, vice-president; and Drs. Gagarin and Sergiev, secretaries.

An Association for the Spread of Skin Diseases is what the French army might be called, if the story told of the wretched condition of the reserves in France is true. It is said that epidemics of skin diseases constantly appear among them, and these are traced to the clothing with which they are supplied, and which is described as frequently filthy and tattered in condition. The reserve force numbers about one hundred thousand men.

Dr. Conrad Diehl, a practising physician of Buffalo, N. Y., was chosen mayor of the city at the recent elections. The *Buffalo Medical Journal* says that his majority was so considerable as to speak strongly of his personal popularity.

The Massachusetts State Hospital for Consumptives, recently built under authorization of an act of legislature passed in 1895, will be ready for the reception of patients early in the year. The buildings consist of an administration building in the centre of a group of low, one-story wooden buildings, arranged upon the arc of a circle, and alternately long and short, in order that free access may be given to the sunlight. The buildings on one side of the group are for men, and the others are for women. Each long building has seven private wards, nine by twelve feet, with open fireplaces; also a general ward, twenty-five by ninety feet, with accommodations for twenty-two patients, each such ward having large brick fireplaces and a ventilating shaft. There is also a "sun room," composed wholly of glass, twelve by twenty-seven feet. This is surrounded by a wide veranda. In the small buildings the general wards have only ten beds each. These wards also have their sun rooms. The hospital is located at Rutland, Worcester County, which lies at an elevation of about twelve hundred feet above the level of the sea. Unfortunately the institution will have accommodations for only about one hundred and fifty patients.

A New Adulteration.—The department of agriculture has discovered that many creameries are using an emulsion of cottonseed oil, which, added to the cream, increases the butter product per gallon of milk, with small chance of detection and a large increase of profit.

A Students' Hospital at Cornell University.—The residence in Ithaca of the late Henry W. Sage has been presented by William H. Sage, of Ithaca, and Dean Sage, of Albany, to Cornell University, for a students' hospital, and, besides equipping it, the donors will endow it with $100,000. The house is located on a plateau, half-way between the city and the campus, standing well above surrounding houses, yet easily accessible by street cars. All necessary additions and alterations will be made. The total amount of the gift, it is believed, will exceed $200,000.

College of Physicians of Philadelphia.—A stated meeting of the College of Physicians of Philadelphia was held on December 1, 1897, the president, Dr. J. M. DaCosta, in the chair. Dr. John B. Deaver read a paper entitled "*x*-Ray Pathology of Fractures about the Elbow," illustrated by stereopticon views. Dr. William S. Forbes showed skiagraphs from a case of anterior dislocation of the head of the radius, and Dr. J. K. Young exhibited a case of fracture of both bones of the forearm near the elbow, with good movement at this joint. Dr. F. Savary Pearce read a paper entitled "A Study of the Blind." The president delivered his annual address; the secretary, the treasurer, chairmen of committees, and clerks of sections made annual reports; and nominations were made for officers and members of elective committees for 1898.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, December 2, 1897.

EDWARD G. JANEWAY, M.D., PRESIDENT.

Nominations.—*Vice-President*, Drs. O. B. Douglas and W. H. Katzenbach; *Recording Secretary*, Dr. Louis Faugères Bishop; *Corresponding Secretary*, Dr. M. Allen Starr; *Treasurer*, Dr. Henry E. Crampton; *Trustee*, Dr. A. M. Jacobus; *Chairman of Committee on Admissions*, Drs. Henry Ling Taylor and Gorham Bacon; *Committee on Library*, Drs. Joseph Collins and Edward D. Fisher.

Suppurative Otitis Media, its Complications and Treatment.—DR. GORHAM BACON presented a paper on this subject. He said that suppurative otitis media was caused by cold, influenza, exanthematous diseases, diphtheria, typhus and typhoid fever, bronchitis, cerebro-spinal meningitis, pneumonia, tuberculosis, the puerperal state, syphilis, sea bathing, injuries to the drumhead, and the snuffing up of solutions for nasal catarrh. Dentition played an important rôle in its development, as did also adenoid growths and enlarged tonsils. Scarlet fever, diphtheria, measles, and influenza were responsible for most of the cases, so that it was of the greatest importance that the ear should be carefully examined, and, if need be, treated in connection with these disorders. In children the temperature was apt to be very high, and the attack might be ushered in by a convulsion or by severe vomiting. When the pain persisted after the ear had begun to discharge, it was probable that the periosteum of the external ear was involved or that the mastoid was implicated. The most frequent seat of perforation was the lower anterior or posterior quadrant. Acute purulent otitis media might terminate in recovery, with or without permanent loss of hearing, or the disease might become chronic.

In the acute inflammatory stage Dr. Bacon said it was important to apply the artificial leech at once, close to the tragus, and endeavor to abort the disease. If the drumhead bulged, a free incision should be made into it. This should be done only under the guidance of the eye and with the aid of good illumination. If the free incision was not made and proper drainage not established, there would be great danger of the otitis media becoming chronic. If the disease became chronic—th t is, in Shrapnell's membrane—the cavity should be enlarged and the endeavor made to wash out the secretion with a syringe. Granulations should be destroyed by the application of chromic acid or by the use of the curette. If this treatment failed, a cure could be effected in many cases by excision of the ossicles and curetting the attic. Some of the results of chronic otitis media were the formation of granulations and polypi, caries of the ossicula and temporal bone, mastoid disease, suppurative meningitis, cerebral abscess, pyæmia, and septicæmia. In cases of acute otitis media, if the temperature remained high after the incision of the drum membrane and the opening of the mastoid cells, one should think of a complicating pneumonia or perhaps of a sinus thrombosis. In cases of acute mastoid disease the operation should not be deferred until redness and œdema of the tissues over the mastoid appeared and the auricle stood out prominently from the head. In making the diagnosis the two mastoid processes should be compared, as in some persons pressure on an uninflamed mastoid process would cause pain. In the first stage of mastoid inflammation, secondary to acute suppurative otitis media, after incision the artificial leech should be applied, and also the Leiter cold coil, but the latter should not be left on for more than forty-eight hours, for if the symptoms had not subsided by that time immediate operation was indicated. The incision should be made close to the auricle, from the tip to the upper border of the pinna. This incision could be enlarged in both directions if complications existed. When pus was found in the antrum and upper part of the mastoid, it should be remembered that the tip might contain pus, and if this was not liberated it might burrow down into the tissues of the neck, and give rise to septicæmia. When caries of the tympanic roof took place, a collection of pus was frequently found in the temporo-sphenoidal lobe.

Symptoms of Cerebral Abscess.—Cerebral abscess almost always occurred in connection with chronic purulent otitis media. The first stage of abscess was usually marked by irritability, pain, nausea, and vomiting, with a diminution or cessation of the discharge. A symptom of importance was a sudden change in the disposition or temperament of the patient. When pus had formed in the brain, there would be usually a distinct lowering of the pulse rate and a subnormal or but slightly elevated temperature. When aphasia developed in such a case, it was an important diagnostic sign of abscess of the temporo-sphenoidal lobe. Inflammation of the optic nerve was also sometimes present. In cerebellar abscess the most characteristic symptoms were severe headache, nausea and vomiting, vertigo, and facial paralysis. The external auditory canal should always be carefully examined in every case of suspected cerebral abscess. When thrombosis of the lateral sinus was present there would be severe headache, high temperature with decided fluctuations, nausea and vomiting, overdistention of the superficial veins in the mastoid region, and swelling of the tissues around the tip of the mastoid would sometimes be observed. If the jugular vein became involved there would be hardness and tenderness along this vein.

Begin Operating at the Antrum.—It seemed to the speaker important that the opening of the antrum should be made the starting-point of the operation. If caries of the tympanic roof was detected, the opening should be enlarged so as to admit of thorough inspection of the dura. Sometimes a thrombosis would be found in a sinus, even though an exploring needle had withdrawn fluid blood. If the symptoms indicated abscess of the cerebellum the sinus should be exposed first. The question of ligating the internal jugular vein in cases of thrombosis here was still a mooted question. Personally he did not think this was necessary. Pressure should be made on the neck from below upward along the course of the internal jugular vein, in order to remove the thrombi in the end of the lateral sinus. If the flow of blood could not be reestablished from the lower end of the sinus, it became necessary to ligate the internal jugular vein, especially if there was tenderness or induration along the vein. He had never seen any bad results from exploring the different parts of the brain, if care was exercised and the operation was done under strict asepsis. Rapidity of operating was of considerable importance. After evacuating the pus from a brain abscess, great care should be exercised in syringing the cavity. Boric acid should be used, and afterward a loose packing of iodoform gauze. This was preferable, in his opinion, to the use of drainage tubes.

DR. M. ALLEN STARR said that most of the cerebral complications were observed in connection with chronic cases of suppurative otitis media. One should be chary, however, about making a diagnosis of brain abscess in these cases on the first appearance of cerebral symptoms; it was better to watch the case for two or three days before deciding, as not infrequently apparently serious cerebral symptoms would gradually disappear as a free discharge from the ear was established.

Diagnosis of Cerebral Abscess.—The diagnosis of cerebral abscess was a most difficult one to make, and one could not rely implicitly on any one of the symptoms, but must decide after a careful study of a number of the symptoms. Although almost all observers agreed that subnormal temperature is the rule in brain abscess, he had seen with Dr. Bacon a case in which the temperature reached to 105° or 106° F., and was so irregular as to suggest pyæmia and thrombosis of the lateral sinus. Again, much stress was laid upon the presence of a cerebellar gait, yet this was often the result of irritation of the auditory nerve or of irritation of the semicircular canals. Optic neuritis was sometimes present, but not often, probably because there was no time for it to develop.

Locating the Abscess; Visual Aphasia.—Above and back of the ear was the region of the brain concerned in the storage of the memories of the sounds of words. If this part of the brain was injured, the person became unable to understand what was said to him. Again, everything that we called to mind by our visual sense employed the function of the occipital lobe of the brain—the visual centres. The connection between the hearing centres in the temporal lobe and the visual centres in the occipital lobe was made by a long tract lying under the cortex of the brain—a distinct association tract. When this tract was destroyed, as it often was, in abscess of the temporal lobe, if one asked such an individual what some object was that was held up before him, he recognized the object but could not call it to mind and name it, because of the destruction of this association tract. Dr. Starr said that this peculiar lack of association was an important symptom to elicit in cases of suspected abscess of the temporal lobe, yet it was not commonly mentioned in text-books.

Dr. R. F. Weir gave reminiscences of the earlier days of his experience in the New York Eye and Ear Infirmary. He had operated upon nine patients in cases of cerebral abscess of otitic origin, five being extradural and four cases of sinus thrombosis. Of the former only two recovered, and of the latter only one recovered. It was worthy of note that all the recoveries occurred in private practice, and this was probably to be explained by the fact that hospital cases usually came under observation too late. One of the earliest and most successful operators in this class of cases was Schede. Personally his enthusiasm regarding the surgery of tumors of the brain and of epilepsy had cooled off to an extraordinary degree, because such operations at best were usually only of very temporary benefit. In former days sinus thrombosis terrified the surgeon; now it was even more satisfactory to treat than the ordinary cerebral abscess, because its symptoms were usually recognized quite promptly and the cases were treated with facility by those who, by observation and some experience, had acquired the necessary boldness. Although sinus hemorrhage was alarming to witness, we had learned that it was more easily controlled than that from any of the large veins.

Cold Applications Dangerously Misleading.—Dr. A. H. Buck said that he could not agree with Dr. Bacon regarding the advisability of using the Leiter cold coil in the treatment of acute otitis media. In this early stage one must choose between hot and cold applications. In his opinion, both of these agents were vasomotor stimulants, and they relieved the pain through this vasomotor action by diminishing the pressure on the sensory nerve fibres of the inflamed part. Heat had no power to benumb sensation, while cold would do so when carried beyond a certain point. This very application of cold, therefore, served to mislead us, for it was largely by the persistence of pain that we were informed of the necessity of going further and operating. It was probably for this very reason that the reader of the paper had advised that the cold should not be applied longer than forty-eight hours. The application of ice appeared to be getting very popular in this country, and for this reason he felt called upon to emphasize the fact that it was a very deceptive agent.

Dr. H. Knapp reported several cases bearing upon the subject under discussion. In one of these a subsequent post-mortem examination afforded proof of the fact that exploratory punctures might be made freely without giving rise to any irritation or bad results. A colored plate was exhibited from another case, in which an abscess almost completely filled the temporosphenoidal lobe, and was surrounded by a small zone of softening and redness, yet all the rest of the brain was healthy. He felt confident that if this abscess had been operated upon a week earlier, the patient would have recovered.

There was a tract a little deeper than the one referred to by Dr. Starr, which had been found to be implicated in only eight or ten cases of brain abscess. Dr. Weir had stated that acute ear disease only exceptionally gave rise to cerebral abscess, yet according to recent statistics nine per cent. were due to acute otitis media—not only the extradural abscesses, which were very common, but the real cerebral or cerebellar abscesses. These statistics had probably been largely influenced by the prevalence in recent years of epidemic influenza.

Compact Bony Mastoids Specially Troublesome.—Mastoid processes having a structure of compact bone often gave rise to most perplexing symptoms. In these cases there would usually be pain, not only in the mastoid region, but also in the occipital region, and often little or no discharge. Moreover, this pain would be quite variable, ceasing at times altogether. Pain on pressure was of special significance in localizing the inflammatory focus. Even at operation these compact mastoids gave a good deal of trouble, because even if one found the usual "bead of pus" this frequently would not lead the operator to the main collection of pus. In these cases of compact mastoids it would be found very much easier to trephine in the ordinary way, above and behind the ear, into the cranium, and from there explore the middle cranial fossa.

Dr. Robert Abbé said that the discussion had shown most clearly the great risk of allowing a purulent otitis to go on after the onset of serious symptoms. Hemorrhage, sinus pyæmia, and cerebral abscess were the great dangers to be feared. If the mastoid was operated upon quite early, the involvement of the sinus would be exceedingly slight. If, however, the operation was deferred, the signs and symptoms of sinus pyæmia would soon make their appearance—tenderness and induration along the jugular vein. Many of these cases, operated upon at such a late stage, would inevitably terminate fatally, even after the most radical operation. When the cases had gone on to the formation of a cerebral abscess, surgery held out comparatively little prospect of recovery.

Dr. Edward D. Fisher said he thought the question of temperature was important in making the diagnosis in these cases of meningitis and cerebral abscess. The hebetude present in cases of cerebral abscess was a distinctive feature, and optic neuritis was not uncommonly present. In some cases there were but few symptoms during life, and the diagnosis would be made only at the post-mortem examination. The speaker then referred to a case of chronic otitis media which had been operated upon, and a fruitless search made for pus. The patient recovered well from the operation, and afterward had four or five attacks of coma lasting for a few hours, preceded by headache, dizziness, and symptoms pointing toward a cerebellar abscess. There had been no optic neuritis and no elevation of temperature. It was probable that in this

case there was some disease affecting the semicircular canals.

Dr. E. B. Dench referred to the value of local blood letting in the very early stages of an acute catarrhal otitis media. When there was a true cellulitis present, however, he thought time should not be wasted in trying local depletion. The incision into the drum membrane should be early and free, but he did not favor the use of a gauze drain afterward. Of seventy-two patients upon whom he had operated by the removal of carious ossicula and curettage of the tympanic cavity, forty-four were cured; in nineteen the discharge had greatly diminished; the result was unknown in eight; and one had been recently operated upon and was still under treatment. The Stacke operation had been done in twelve instances, eight patients being cured and four improved. Out of one hundred and sixty-four operations he had had but ten fatalities. His experience with epidural abscess consisted of six cases, all of which had terminated in recovery.

Rapid Operating Important.—If an intracranial complication was suspected, time was an important element in the operation; therefore if there was not free drainage from the external auditory meatus he believed in entering the cranial cavity at once through an incision so extensive as to allow exploration of the cerebellar fossa, the middle and posterior cranial fossæ, and the lateral sinus, as well as to enter the antrum, if this was necessary. One should not undertake a mastoid operation without the strictest aseptic precautions. Personally, he never began such an operation without expecting to open the cranial cavity or explore the sinus.

Occasional Absence of Pain.—Dr. J. A. Booth said that he did not think optic neuritis was a frequent symptom of abscess of the brain, except in cases of abscesses of the cerebellum. In two mastoid cases that had come under his observation the pain had been absent, although it was usually a prominent feature. It had been claimed that this exceptional absence of pain was due to the development of a special toxin having anæsthetic properties.

Prevention of these Dangerous Complications.—Dr. E. Gruening said that if the general practitioner would promptly and properly incise the drum membrane there would be no brain abscesses or sinus thromboses to treat; but, in order that general practitioners should be able to do this, they should receive in their student days better instruction regarding the examination and local treatment of the ear.

Dr. Bacon, in closing, said, regarding the use of hot and cold applications, that he had never had any satisfactory results from the former. The reason he had advised stopping the use of the cold coil after forty-eight hours was that this application did certainly mask the symptoms to some extent. It was his practice to remove the coil at the end of forty-eight hours, and watch both the temperature and the pain for a few hours, and examine the ear carefully. In regard to the question of abscesses returning, he said that he felt that there was always this possibility unless every portion of diseased tissue was removed at the operation.

Dr. Bacon then exhibited two brains, one showing a cerebellar abscess and the other a temporo-sphenoidal abscess with carious bone.

National Bureau of Health.—Dr. A. Jacobi, on behalf of the old committee, reported that, as its sphere appeared to be too restricted to meet the present necessities of the country, the committee recommended the appointment of a new one which could more effectually deal with the urgent and complex sanitary problems of the present time.

The old committee was discharged, and, on motion of Dr. Jacobi, the president was requested to appoint a committee of five, of whom he should be one, to consider questions of public health and hygiene, particularly with regard to the better control of infectious diseases, and to prepare a bill to be presented to the United States Congress, either independently or in conjunction with commercial bodies.

SECTION ON GENERAL MEDICINE.

Stated Meeting, November 16, 1897.

Louis Faugères Bishop, M.D., Chairman.

Studies in the Isolation of the Bacillus Typhosus as a Means of the Diagnosis of Typhoid Fever.—Dr. Philip Hanson Hiss, Jr., read a paper with this title. He said that recent experiments on animals whose resistance had been reduced by exposure to noxious gases showed that under such circumstances they could be successfully inoculated with cultures of the typhoid bacillus, and certain phenomena resembling typhoid fever thereby produced. Up to about 1890 the characters of the typhoid-bacillus growth and the other means of differentiating this bacillus from the colon bacilli were few and indefinite, and, as the means of differentiating the typhoid organism from these other colon bacilli became more accurate, the difficulty of isolating the bacillus typhosus from the fæces was greatly increased, and the opinion gained ground that the typhoid bacilli were not found in the stools. In the various bacteriological studies of typhoid fever attempts had been made to separate the specific bacilli from the fæces, urine, and perspiration, and from blood obtained by puncture of the spleen. The last procedure proved too dangerous for general adoption. The examination of the urine gave better results than the blood. Neumann had found the typhoid organism in eleven out of forty-six cases, and another observer had found the bacillus in one case as early as the third day of the disease. There was some reason for believing that the bacilli were found only in those specimens of typhoid urine which contained albumin. The examination of typhoid urine, nevertheless, had been shown to be a practical and important procedure. According to the best modern observers, the typhoid organism could be recognized ordinarily in from forty-eight to seventy-two hours. The colonies were much smaller and of a brighter color than those of the colon bacilli. In April, 1896, Dr. Hiss said, he had begun some investigations on the behavior of various bacteria with certain solid media, and particularly of the bacillus typhosus. Two media were devised—one for the differentiation of the colonies of typhoid bacilli from the colon group by plate cultures, and the other for tube cultures. These media were composed of agar, gelatin, sodium chloride, meat extract, and glucose, in varying proportions, acidulated slightly with hydrochloric acid. On the plate cultures the bacillus typhosus developed into small colonies, with irregular outgrowths and with fringing threads. The colon colonies, on the other hand, were much larger and darker, and as a rule did not form threads. After inoculating these culture media with the specimen of fæces, the cultures were kept in an incubator at a temperature of 37° C. The organisms isolated in this manner had been subjected to the usual tests for recognizing the bacillus typhosus, and definite and positive proof of their identity had been obtained by several observers. Seventy-eight cases had been investigated in this way. Forty-three were reported as clinical typhoid, of which thirty-seven were in the febrile stage and six were convalescent. In a number of instances only one stool had been examined, and the case not further followed, but even then 66.6 per cent. of the cases had given positive results in the febrile stage. But the

most interesting results had been obtained in a series of cases from the New York Hospital. Of these twenty-six cases, twenty-one were in the febrile stage and five were convalescent. Of the febrile cases nineteen were thoroughly investigated, and in seventeen, or 89.5 per cent., the typhoid bacilli were found in great numbers. In the other two the plates were not satisfactory and death occurred early. The bacilli were isolated as early as the sixth day, and as late as the thirtieth day, and in a case of relapse on the forty-seventh day of the disease. The bacilli seemed to be more numerous in the stools after the tenth or twelfth day. In one non-febrile case the bacilli were found on the tenth day of the disease, and after three examinations with the Widal serum test had given a negative result. The fact that the specific bacilli were present in the blood, the spleen, and the urine, and often early in the disease, seemed to indicate that the bacilli occurred more generally throughout the body than had been heretofore supposed, and that they probably did not reappear in the intestinal tract in great numbers until about the time of the breaking down of the intestinal lesions. The bacilli disappeared rapidly from the stools after the fall of the temperature, and when they persisted there seemed to be a special liability to relapse.

Compared with Widal's Test. — Comparing this method of examination with the Widal test, it would be found to possess the advantage over the serum test of positively demonstrating the typhoid-fever infection in a large proportion of cases, whereas the serum reaction might indicate past or present infection, and even then was not always to be relied on.

Dr. William H. Park said that he had had a fair experience with the different methods of isolating the typhoid bacilli, and he was positive that of those hitherto devised this method of Dr. Hiss was by far the best. Elsner's method was often difficult of application, especially in warm weather, and one could not hope to find the colonies under forty-eight hours. By the method described in this paper the bacilli presented as a rule a characteristic appearance, not only as to their general size, but because of the presence of the characteristic threads. Of course, some other bacilli undoubtedly made threads, and it was possible for even an expert to be occasionally deceived. The tube medium seemed to him far ahead of anything of the kind that he had before seen. All of the bacilli so far tested by Dr. Hiss with this medium had been absolutely differentiated, the one from the other, but he had noticed that unless the media were prepared very carefully this differentiation would not occur. As to the practical value to the physician, the speaker said that one could not hope to get positive results in much more than fifty per cent. of the cases, although a larger percentage had been obtained from hospital practice, where more attention was paid to the collection of the stools for examination. Like the sputum examination in phthisis, if the bacilli were found, it was helpful; if not found, the examination was of no value. The same was true of the Widal reaction. It was probable, therefore, that the method would not be used in a routine way, but only in certain doubtful and puzzling cases. It was in this way that the Widal reaction had demonstrated that certain types of fever formerly considered to be typhoid were really not typhoid fever.

The Necessary Apparatus Obtainable at the Health-Board Stations.—Two small bottles had been devised—one for urine, and one for fæces—and these were to be kept at the various board-of-health stations throughout the city for the convenience of physicians. The fæces were collected by means of a glass pipette furnished with the rest of the apparatus.

Typhoid Fever Located in the Kidney.—Dr. W. Gilman Thompson said that in one recent case at the Presbyterian Hospital the value of the test had been demonstrated very conclusively. The patient had had some fever and a tumor of the kidney, which was supposed to be a collection of pus. It was not thought at the time that the case was one of typhoid fever, but the diagnosis had been made by the Hiss method. It was one of those rare cases of typhoid fever located in the kidney. The patient made an excellent recovery, and the tumor disappeared without operation or special treatment.

Dr. T. M. Cheesman said that he felt that the Hiss method was a radical departure from all previous ones, as hitherto the effort had been to inhibit the growth of other micro-organisms. On the other hand, the experiments of Dr. Hiss were made with the idea of obtaining a medium which would enable the typhoid bacillus to grow at its maximum. He had himself examined the typhoid stools in a great many instances in an effort to obtain the typhoid bacillus, and he had been uniformly unsuccessful by the older methods. He had examined the urine in half a dozen instances, and had been successful only once. He had also examined the typhoid spots, and in no case had been able to discover the presence of the specific bacillus. He had examined the blood from finger puncture in twenty-five cases without once finding the bacillus. Elsner's method had given him no better results, and he had found that at the end of forty-eight hours other micro-organisms were very liable to appear and to simulate what Elsner had described as the typhoid colony. He felt, therefore, that Dr. Hiss had done much by his studies to elucidate this difficult problem of isolating the bacillus typhosus, yet there was certainly a great deal more to learn.

Dr. Hiss, in closing the discussion, said that the percentage of positive results in the examination of only one stool was about fifty. In one case at the New York Hospital he had made four examinations of the stools with negative results, yet subsequently the urine had been found to contain the bacilli.

Typhoid Fever in the Aged.—Dr. Morris Manges read a paper on this subject. Many recent text-books, he said, made the statement that typhoid fever is very rare after the fortieth year. Flint, in the last edition of his text-book, had stated that the susceptibility to typhoid infection was not great after the fiftieth year, and still less after sixty years of age, but he had seen several cases occurring about this period of life. Other authors had stated that the apparent immunity from typhoid fever in later life was probably due to the fact that the individuals had been previously rendered immune by an attack of typhoid fever.

Frequency.—Dr. Osler had informed him that out of three hundred and eighty-nine cases at the Johns Hopkins Hospital up to May 15, 1895, five patients, or 1.3 per cent., were between sixty and seventy years of age. Dr. Manges said that in the present year five patients, all over fifty years of age, had come under his own observation. Two of these had been at the Mount Sinai Hospital—one a man of sixty-three, and the other a woman of seventy-two. The third was a man of sixty-two, and the two others were sixty-five years of age. Three of the cases were typical in every way, but two presented the appearance of a pneumonia. These senile cases were often marked by an insidious onset and rapidly increasing depression of the vital forces. Through the kindness of Dr. Tracy, of the board of health, he was able to present the following figures: Of 3,644 persons reported dead of typhoid fever, 610 were over forty-five years of age, 414 between forty-five and sixty-five, and 96 were sixty-five or over—in other words, 14 per cent. were forty-five and over, 11.3 per cent. were between forty-five and sixty-five, and 2.6 per cent. were sixty-five and

over. It should be remembered also that these figures were collated from the deaths from this disease. According to a table prepared for him by Dr. W. H. Park, from cases brought to his notice in connection with the examinations for the Widal reaction, of 124 persons of whom the ages were given, 118 were forty-five years old and under, and 6 were between forty-five and sixty-five.

Symptomatology.—The symptomatology was quite varied in the aged. The onset was often like that of some simple digestive disturbance; epistaxis was infrequent; the fever was not marked, and was very irregular; the roseola was often absent, and if present was exceedingly scanty and atypical; the abdominal symptoms were not pronounced; enlargement of the spleen was slight or wanting; severe intestinal hemorrhages were common. On the other hand, the pulmonary symptoms were always pronounced—congestion, hypostasis, and pneumonia being very common, and often leading to a faulty diagnosis. In a case cited by Dr. Osler the evening temperature at one time was only 97.5° F.; there were hemorrhages scattered under the skin; and the urine contained a moderate quantity of albumin, with granular and hyaline casts. For a few days the temperature was normal or subnormal in the morning, and rose to 100° or 101° F. in the evening. The ecchymosis increased, and then pulmonary symptoms appeared. The case was thought to be one of pneumonia occurring in a debilitated and aged subject, but at the autopsy, made by Dr. Welch, the anatomical diagnosis was typhoid fever, recent croupous pneumonia, and enlargement of the spleen. In this case there were no clinical features in any way characteristic of typhoid fever, and the typhoid state was thought to be secondary to the pneumonia. The extensive cutaneous hemorrhages were such as were frequently seen in the protracted cachexia of old people. In these old people nephritis frequently occurred, and asthenia was always a marked feature, the patient looking more seriously ill than the symptoms and signs would seem to indicate. The duration was very irregular, and convalescence very protracted. Death frequently resulted from syncope.

Author's Cases.—The speaker then briefly referred to the five cases that had come under his observation. The first patient was seventy-two years of age, and complained chiefly of some abdominal distress, with pain over the thorax and on swallowing. There were pneumonia at the right base, slight enlargement of spleen, and some albuminuria. The case resembled a senile pneumonia, and death occurred with pulmonary œdema. Cultures made post mortem from the spleen and from the blood of the inferior vena cava gave pure growths of typhoid bacilli. The second patient, sixty-three years of age, had complained of chills, fever, headache, and sweating for some time prior to admission. There was no eruption or enlargement of the spleen, and the temperature range was anything but characteristic of typhoid fever. The fever assumed after a time a hectic type, which seemed to indicate a septic process. The Widal reaction was negative, but puncture of the spleen after death gave pure cultures of typhoid bacilli. The next patient was sixty-two years of age. When seventeen years old he had had a typical attack of typhoid fever, with a brisk intestinal hemorrhage in the third week. He presented a typical range of temperature in this second illness. In the next patient it had been found difficult to make the diagnosis until the Widal reaction had been obtained on the seventh day. He had some bronchitis and a scanty roseola, associated with slight splenic enlargement. The last case ran the ordinary course of a mild typhoid. The patient stated that he had been ill for over three weeks before admission, with headache, slight cough, and great dryness of the mouth. The liver and spleen were slightly enlarged, and the abdomen was somewhat tympanitic, but there was no eruption. The Widal reaction was negative at the first examination, but was positive two days later, and continued throughout the active stage of the disease.

Treatment.—The indications were to combat the adynamia by tonic treatment, to guard against pulmonary complications, and to watch the right side of the heart. Baths were to be avoided, because of the atheromatous condition of the blood-vessels. Cold enemata or tepid baths might be resorted to.

Watch the Pulmonary Second Sound.—Dr. Andrew H. Smith said that it was only in recent years that the profession had come to realize that typhoid fever could occur late in life. Disease processes were not easily taken on in proportion as the other processes were sluggish, and this probably explained the comparative infrequency of typhoid fever in old age. The condition which existed as a part of senility was not like the diminished resistance observed in younger persons. All the clinical symptoms were as a rule less pronounced than in younger subjects. For example, there was less headache in the typhoid fever of the aged; so with the epistaxis and with the typhoid eruption. The feebleness of the circulation in older persons also gave rise to certain special features. Thus the bronchitis so commonly observed in younger persons would take on the form of broncho-pneumonia in the aged. The feeble action of the heart naturally predisposed to lung disorder. It was important for the physician, therefore, to know the amount of accentuation of the pulmonary second sound, as indicative of the condition of the right heart, and also of the obstruction in the pulmonary circulation. It was always comforting in these cases to find a good pulmonary second sound. In these aged individuals, as a result of the feeble circulation there was a greater tendency to thrombosis and gangrene. Thrombosis of the iliac vein was not uncommon, and a certain proportion of these patients presented gangrene of the lower extremities. He would feel unwilling to subject these old people to a cold bath, although cool enemata and tepid bathing might be very well borne. We should watch particularly for cold extremities and everything indicating impending failure of the circulation. Alcoholic stimulants were indicated in these subjects more than in younger ones. The fact that the liver and spleen were not likely to be so greatly engorged constituted another evidence of the sluggish disease action to which he had already alluded.

Dr. W. Gilman Thompson said that he had looked over the records of typhoid fever cases at the Presbyterian Hospital for the last ten years. Of these four or five hundred patients, only seventeen were over forty-five years of age, only six over fifty, and only two past sixty years of age. These two latter were interesting as demonstrating the possibility of a very typical attack at this advanced age. It had occurred to him that the atypical condition in some of the cases described might possibly be due to a previous attack of enteric fever. The patients to whom he had referred were sixty-seven and sixty-nine years of age respectively, and both had derived the disease from a common source, yet these individuals did not give evidence of extreme senility.

Dr. William H. Thomson said that last October he had observed at the Roosevelt Hospital a case of typhoid fever in a person sixty-two years of age; its course had been perfectly typical, and had been complicated with pneumonia, but the patient had recovered.

Dr. Manges, in closing the discussion, said that the text-books would lead us to suppose that the reaction of these patients to the disease was a sluggish one, but in practice this was not the case; the reaction to the

fever in the typical cases was as obvious as in younger persons. In the atypical cases only was this sluggish reaction noted. The pulmonary disorder would be most likely to attract attention. It was probable that partial immunity was conferred by a previous attack of the disease earlier in life, yet one of his patients had had a prolonged attack of typhoid fever when seventeen years of age, and had lost the immunity conferred by it to such an extent that his attack late in life was a typical one.

Diabetes Mellitus and Its Treatment; Remarks Based on Clinical Experience.—Dr. Henry S. Stark read this paper (see page 844).

Diabetes is Physiology Perverted.—Dr. William H. Thomson said that he looked upon diabetes as a unique disease, because it was the disease which departed from the great principle that "pathology is physiology under difficulties." Diabetes, instead of being "physiology under difficulties," was "physiology itself perverted." It was a disease in which bread, instead of being the staff of life, became itself the direct means of crippling, if not destroying life. The only other disease approaching diabetes in this respect was Graves' disease, because here butcher's meat was as poisonous as saccharine food was to the diabetic. For years the liver had been examined again and again in all cases of diabetes to discover some pathological change, and of late years the pancreas had come forward in this connection, but in a most tantalizing way. There were unquestionably some cases of diabetes in which the destructive change had occurred in the pancreas, yet in others there would be typical and even fatal diabetes without any pathological change being demonstrable in the pancreas. Traumatisms to the spine and cerebral traumatism had been known over and over again to be the beginning of a history of diabetes, and injuries to the abdomen, particularly blows over the liver, had been known to give rise to a typical and even fatal traumatic diabetes. The fact that the carbohydrates were absolutely necessary as fuel for muscular function, Dr. Thomson said, was one of the greatest discoveries of modern physiology. The discovery that there was a difference between the thermogenic functions of muscles and their contractile functions, and that the thermogenic function was the important one, at once showed that it was the oxidation of the carbohydrates, mainly in the muscular system, that kept up the animal heat. The question then arose: May there not be some fault in that system which will account for the symptoms of glycosuria? This singular disease, diabetes, demonstrated to us more conclusively than anything else the imperfections in our knowledge of physiology. The reader of the paper had spoken of glycosuria as though it were not diabetes, and of albuminuria as though it were not Bright's disease. He did not believe in physiological albuminuria or glycosuria, for he had repeatedly noted, in records extending over many years in private practice, that a very slight glycosuria or albuminuria had eventually developed into diabetes and Bright's disease respectively. Glycosuria was the first step toward diabetes, and the degree of severity varied very greatly in different individuals. Our clinical experience taught us that there was a very great difference in the disease depending upon certain factors. Foremost among these he would put age. The younger the person, the worse the prognosis. The only cases in which he was not very much disturbed by finding glycosuria were those of silvery-headed men and women. Those who became diabetic under twenty years of age usually exhibited a very uncontrollable form of the disease. He was firmly of the opinion that it was not the sugar that caused the fatal explosions of diabetes any more than it was the urea in Bright's disease that gave rise to the symptoms of uræmia, but that certain changes occurred in the sugar and allied bodies through the operation of toxins. These toxins were responsible for the development of acetonuria. He was always alarmed when a diabetic patient had a sweetish breath. Another important and closely related clinical fact was the disappearance of the urinary pigments. We had much yet to learn regarding the significance of pale urine in both diabetes and Bright's disease.

Opiates Should be the Last Resort.—He had always maintained that opium should be the very last resort in diabetes instead of being the sheet anchor, as many physicians seemed to believe. The preparations of opium should be used in diabetes, not as curative agents, but rather as a means of smoothing the path to the grave. His treatment of diabetes consisted in the systematic use of intestinal antiseptics, and he was especially strenuous on this point if he feared the supervention of coma. He also believed in the administration of arsenic, cod-liver oil, and iron, and sometimes of phosphorus and alkalies. He maintained that these agents were curative in a certain proportion of cases, particularly in those developing after forty years of age. He was always pleased to learn that a diabetic patient was gouty, because this materially improved the prognosis.

Diet Should Not be too Exclusive.—He was, however, in hearty accord with the reader of the paper regarding the matter of diet. If under a diet containing carbohydrates we found that the patient was not losing weight or developing special diabetic symptoms, no matter if the sugar still persisted, we were justified in keeping up such a diet. He had seen harm done by a too rigid exclusion of carbohydrates from the diet of diabetics. Bread could be taken in the form of very thin slices, so thoroughly browned as to be more than toasted. In his experience potatoes had not been nearly so injurious to diabetics as the cereals. He would much rather have a diabetic take a moderate amount of potato than the special diabetic breads. The question of prognosis should be determined by an experiment to ascertain the extent to which the sugar diminishes under a rigid exclusion of carbohydrates for a period of three days. If the proportion of sugar remained relatively high, the prognosis was certainly far more serious than when the reduction in the quantity was more prompt.

Premonitory Symptoms of Diabetes.—Regarding the early symptoms of diabetes, the speaker said that the great majority of diabetics had sugar in the urine only intermittently at the outset. For this reason the urine should be repeatedly examined if a patient exhibited a decided form of nervous dyspepsia, or a condition of nervousness formerly unknown to the individual, or a tendency to pharyngeal catarrh, or when there was a tendency to cramps in the calves of the legs in the early morning. This last symptom was also common in gout and in chronic endarteritis, but when these conditions could be excluded the symptom was one strongly presumptive of diabetes. Under such circumstances the physician should examine both the morning and evening urine for several days.

Take Warning from a Family History of Gout or Obesity.—Dr. Walter Mendelson said that we had had impressed upon us the fact that diabetes was really the symptom complex arising from several causes. Clinically we could distinguish two varieties—those cases which were very amenable to treatment, and those which progressed more or less rapidly in spite of all treatment. In glycosurics one would usually find a history of obesity or gout in the patient or in other members of the immediate family. This indicated a general state of faulty metabolism. The reader of the paper had very rightly insisted upon the fact that when there was such a family history special care should be taken regarding diet and exercise in

early life. After one had once become quite obese, it was very hard to get rid of the condition. He agreed with Dr. Thomson that a person who exhibited transient glycosuria was always in a condition to develop true diabetes on very slight provocation.

The Body Weight a Guide in the Treatment.—In the treatment we should never aim to cut off the carbohydrates entirely; this might be an ideal treatment, but we should ever keep in mind that the patient is not a chemical laboratory. Instead of estimating the urea, one could be guided in the treatment by weighing the patient. He had observed no strikingly good results from the administration of such drugs as codeine. A sustaining treatment was, however, of importance, and for this reason he was in the habit of prescribing plenty of butter—it was usually more agreeable to the patient than cod-liver oil. Another important point in the management of these cases was to shield the patient from undue mental or physical strain.

Alkalies Most Valuable.—Dr. Max Einhorn was disposed to make a distinction between transient glycosuria and diabetes—in other words, sugar might appear in the urine from slight causes, and yet not give rise to actual disease. For example, the ingestion of an unusual quantity of sugar sometimes causes glycosuria. The severity of the affection could be fairly well gauged by the quantity of sugar excreted in the twenty-four hours. Severe cases might be found even at an advanced age. While there were apparently no specifics for this disease, the prevailing opinion seemed to be in favor of the administration of some preparation of opium in those cases in which sugar was excreted in large quantity and was not controlled by the dietetic treatment. Of all the recognized remedies for diabetes, it seemed to him that the alkalies were probably the most valuable. It was generally admitted that diabetic coma could sometimes be averted by the free use of alkalies. He did not think it was harmful to exclude starchy foods for a short time, but as a rule these foodstuffs should not be entirely prohibited. In his experience the cereals were better than potatoes, because they contain both albuminoid and starchy food; even untoasted bread had been well borne. The main point was not to allow too large a quantity of starchy food at any one time. Vegetables should be given freely, especially lettuce.

Phosphatic Diabetes.—Dr. Andrew H. Smith asked the reader of the paper whether, in those cases in which he had found no sugar and the urine was of high specific gravity, he had thought of the presence of a large quantity of phosphates. There was a variety of diabetes in which there was no sugar, but a large quantity of water was voided and a great excess of phosphates. It was so well known that diabetes frequently had its origin in great mental shock, or in a condition of prolonged mental strain, that we should give this very serious consideration. He had known bank presidents and others in responsible positions to be very markedly diabetic. When there was a well-grounded suspicion of diabetic inheritance, the younger members of the family should not be encouraged to select vocations in which there was likely to be much mental strain.

Locomotive Engineers Peculiarly Liable to Diabetes.—Dr. Smith said that, having learned that locomotive engineers very frequently became diabetic, he had applied to the actuary of the Brotherhood of Locomotive Engineers for statistics, and had learned from this official that this disease was three times more frequent in those following this occupation. This was not surprising when one reflected upon the constant strain under which the work of a locomotive engineer is done. He called to mind the case of a gentleman who became diabetic from the moment of a severe fright occasioned by a runaway accident. The worst thing we could do was to allow a diabetic patient to watch his urine and keep a record of its changes, as this furnished a constant additional shock to the nervous system.

Dr. Stark, in closing the discussion, said that his experience would not warrant his becoming alarmed if the urine contained some sugar after considerable horseback or bicycle riding, and particularly if the next day there was no longer any sugar in the urine. He was not familiar with the subject of phosphatic diabetes referred to by Dr. Smith. In the case that he had cited in the paper the urine had been constantly acid in reaction and free from sugar, nor did it present the characteristics of phosphatic urine.

SECTION ON GENERAL SURGERY.

Monday Evening, November 8, 1897.

W. W. Van Arsdale, M.D., Chairman.

The Lorenz Method in Congenital Dislocations.—Dr. Royal Whitman presented cases of congenital dislocations treated by the Lorenz method. Dr. Whitman said that double congenital dislocations caused great lordosis and wabbling gait. Single congenital dislocation caused lordosis and wabbling gait, but not so great as the double. He presented several illustrations of the condition in this deformity. There had been practically no cures in this country until recent years. Lorenz and others found that the true resistance lay in the anterior fibres of the muscles drawing the head of the femur up and back, and to restore the normal condition it was necessary to overcome this resistance. This was done by extension by means of weights, by extreme abduction and retention. The head of the femur, having been drawn down over the rim of the acetabulum, it was pushed forward to dilate the capsule, fixed, and thus the child was allowed to walk. The first case was that of a child with double congenital dislocation, whose left leg had been replaced with great force, but it had been necessary so to bandage the limb that it was not convenient for the child to walk, and so that portion of the treatment had been omitted. The fifth case was one that was seven years old, and it had required a weight of twenty-five to thirty-five pounds for four weeks before the operation, and when the bone went back it was with a tremendous jar.

Conservative Surgery on the Arm.—Dr. Robert T. Morris presented two cases. Dr. Marablat, of Elizabeth, had operated on the first patient presented. The man had been shot in the elbow by a tow wad discharged from a shotgun at close range. A four-inch incision was made and the damaged structures were removed, embracing the olecranon, a sharp piece of the ulna, and the end of the humerus. The radius remained principally intact. As a result of the operation the arm was shorter than the other, but the man had good use of it and the movements were good. The second case was that of a man whose arm had been run between a wheel and a belt, destroying all the structure about midway between the wrist and the elbow, except a strip of skin and the ulnar artery. The radius and ulna were resected, all the parts sutured, and now the patient had good sensation, could use the arm at ordinary work, could play the violin, and had a good grip in the hand. Dr. Morris spoke of a case in which he grafted three fingers on to a young woman's hand, and the operation was successful. After a short time the patient had good sensation in the grafted fingers, but from sensitiveness, feeling she was an object of curiosity, she asked him to amputate the fingers. He did so, and preserved them, and was

anxious to have an expert dissect them and find where the nerve supply was derived from.

Simple Fracture of the Clavicle Treated by Immediate Suture.—Dr. E. M. Foote presented a case of this nature. The patient was a boy who had his clavicle broken by a piece of machinery with no injury to the soft parts of importance. He was seen two days after the accident. The fracture could not be reduced, and four days after the injury an incision was made: the bones were exposed, but even then they could not be brought into position. The bones were drilled, then brought together, and sutured with kangaroo suture. The periosteum had been torn from a small part of the end of one fragment; this suppurated a little, but recovered, and now the union was strong. Dr. Foote said the operation was not a common one in this country. Spencer reported a few cases, and one case was reported in the *Annals of Surgery* last year, but in Europe a number of cases had been reported. The results were good. Many cases of broken clavicle healed without any treatment, but this method might be employed with good results in cases in which the fracture was irreducible or would not stay reduced, or in which there was interposition of muscle between the fragments, compound fracture, or hæmatoma. It might be employed as a secondary operation in case of pressure upon a nerve. Most operators had used silver wire and some silk, but there was no special reason why an absorbable suture should not be used.

Amputation of the Hip.—Dr. A. M. Phelps presented the case. The patient was a young woman. An aunt had tuberculosis and a paternal uncle died of phthisis. Her illness began three years ago. She had abscess of the left hip, which was enormously large. The veins of the abdomen were enlarged, the lungs showed crepitant râles on the right side, the patient was extremely anæmic, and it seemed that operation in her condition was dangerous. Her liver was enlarged, the urine contained casts and pus, and all indications pointed to amyloid degeneration of the liver and kidneys. On account of the extreme anæmia the blood was forced from the extremities into the trunk, and a bloodless operation was performed, with the exception that the parts were so soft and destroyed by the disease that the obturator artery could be only partially controlled. When the joint was cut down on, it was found that the disease had amputated the head of the femur. The specimen presented showed that the bone was very much destroyed, contained sequestra, and had been amputated by the disease process. The patient was as well after anæsthesia as before, but the ligaments on the extremities could be removed only one at a time or the patient would faint. By putting on flannel bandages and drawing tight and removing from one extremity at a time, the last one was removed at the end of twenty-four hours. After the operation the albumin began to disappear from the urine, the liver to diminish in size, the veins to become less prominent, and at the present time the patient was in good condition. The case was interesting on account of the bloodless operation, the effect of the operation upon the casts and pus in the urine, and the decrease in size of the liver, suggesting the possible effect of operation upon amyloid conditions. Dr. Phelps thought it was important in major operations, when there was danger from loss of blood, to drive the blood into the trunk. He thought the bloodless operation had reduced the mortality from very great to less than twenty per cent.

Operation for Hernia.—Dr. Samuel Lloyd presented a man upon whom he had operated for hernia, and presented photographs taken before the operation. These showed the hernia to be immense. It had been down for twenty years, and was so large that the man could hardly get about. At the operation it became necessary to invert the patient, on account of the pressing out of the colon and coils of small intestine. The man had not suffered any trouble on that side since the operation, but it was interesting to note that six months later there appeared a hernia on the opposite side, which showed that the side on which the operation had been made was quite strong.

Amputation of the Breast.—Dr. Howard Lilienthal presented a case which he thought was interesting from a diagnostic point. The case was that of a woman who had nursed a child, and three months after weaning had a swelling of the breast. He had amputated the breast, because he thought it was all affected. Examination confirmed the diagnosis of tuberculosis. No other organ was affected. The opening was very slow in healing, one place remaining open for fourteen months.

Carcinoma of the Breast.—Dr. Percy R. Bolton showed a woman in whom both breasts were affected by carcinoma. Dr. Tuttle had removed one, leaving the pectoral muscles, and he had later removed the other and had also removed the corresponding pectoral muscle. It was not easy to detect any difference in the strength of the two sides.

Dr. Charles N. Dowd presented a case to show the good result obtained in removing both pectoral muscles in operation for carcinoma of the breast. The statement had been made that the arm was weak after removal of the pectoral muscles, but this was not true in the case presented, for the woman worked right along and suffered no inconvenience—in fact, did not notice any difference in that side.

Dr. Morris, in discussing the case of fracture of the clavicle presented by Dr. Foote, said that by making a very small incision it was possible to drill a hole in one of the bones, and, making a groove in the other, fasten them by means of a trowel pin and get nice union. He wished to congratulate Dr. Lloyd on the good result in such a large hernia.

Dr. J. P. Tuttle said he was much interested in Dr. Lloyd's case, and wished to ask if he found any plates of cartilage in the scrotum. He then presented a specimen of a large cartilaginous plate which he had found in the scrotum in connection with a large hernia. It was situated between the gut and the sac, and the gut had to be dissected off from it.

Dr. A. Ernst Gallant said he would like to mention the case of a woman who had a hernia larger than the one in the case presented. The woman was sixty-two years old, and had been working since the operation, two years ago. He had found her suffering with distention of the bowels after operation, and the nurse using enema and other means to get the bowels to move. The house surgeon was going to operate to relieve the condition, when the speaker relieved the case by means of massage. Beginning at the ileo-cæcal region, he massaged the abdomen in the direction of the colon, and in a short time the bowels were relieved and the patient's suffering ended. In connection with the case presented by Dr. Phelps, he mentioned having seen an operation in the Royal Infirmary, Edinburgh, in which it was not possible to control the hemorrhage except by pressure upon the abdominal aorta, but this procedure worked admirably.

A Report of Thirty-Two Cases of Cancer of the Breast.—Dr. Charles N. Dowd read a paper on this subject. The purposes of the paper were two: 1st, To investigate the benefits to be derived from the operation; and 2d, to illustrate the technique. It could be safely stated that the mortality was less than twenty-five per cent., and the benefits to be derived from the operation were great, as the patient was relieved from the severe suffering and had the hope that there would be no recurrence of the disease. He had operated on twenty-nine patients since 1893. Only

six of these had been operated on three years ago. Of these four were alive and two died of metastasis of the lung. These patients were operated on by Volkmann's method. Of the remaining patients of the series, fifty-two per cent. were now alive, and most of the deaths were from metastasis. The most interesting question was how extensively the tissues should be removed in these operations. Halsted and Willy Meyer had advocated the removal of the pectoral muscles, and since that time this operation had been extensively used. It had been urged against this operation that it was a mutilation of the patient, and that there was a loss of power in the arm. He had operated on twenty-six patients by this method, and all had good use of the arm, although there might be a slight loss in adduction, though imperceptible to the patient. The other muscles acted to make up for the loss of the pectoral muscles. Sometimes there was œdema from removal of the longer veins, but this was temporary. It was said too that there was increase of danger, but this was unimportant. He had but one death, and that was in a woman seventy-three years of age and very weak. Some surgeons advised the removal of the pectoral muscles in the far-advanced cases and leaving them in the more recent ones, but this seemed to him unadvisable, for the greater the hope of saving the case the more thorough the operation should be, if any difference was made. Some argued that the glands from the posterior triangle should be removed. One could not well argue against this, but it was an important question. As to the removal of the skin, the operation should be to remove diseased tissue and not to make flaps for plastic operations. The method of dressing was of great help in healing the wound. The stretching apart could be relieved by putting on a rubber bandage and drawing the parts toward each other from the sides. If there was trouble in covering the wound, skin grafting was the best. It seemed a matter of importance to leave the subscapular nerve. Cases of local or recent recurrence were ones which showed the necessity for the most of the technique. Patients who had suffered very severely were much relieved by the clearing out of the cancer and by proper dressing, and became comfortable, usually getting out of bed about the sixth day and leaving the hospital in twenty-one days.

In discussing Dr. Dowd's paper, Dr. Bolton said he hoped to hear some evidence in favor of the Halsted operation over other operations. He had heard that patients lost the use of the arm to some extent when the pectorals were removed. He thought recurrence came oftener from the skin than from any other portion, which showed that the superficial lymphatics were most involved.

Dr. Meyer said he was much interested in the paper. He had advocated primarily cutting the tendon of the pectoralis major, and then the minor, and turning these muscles down and dissecting. Halsted's method meant cutting the muscles from the sternal end and splitting and working toward the attachment to the humerus. He thought the two methods were quite different. Halsted took three or four hours for an operation. He thought it best to remove both pectoral muscles. He had had nineteen or twenty cases, and had never seen one in which it was necessary to use a saline solution for intravenous injection. The assistant should not draw the muscle hard. In reference to Dr. Bolton's question as to the result upon the strength of the arm, he thought in every instance the result was better when the muscles were removed. Patients were not troubled with œdema and could soon move the arms. He thought the pectorals should be removed, especially as there were sometimes infected glands below the pectoralis minor.

Dr. Lilienthal said he was in favor of this operation, but the removal of the pectoral muscles must be accompanied by some loss of power; nevertheless, the loss was not so great but it was counterbalanced by the increased thoroughness of the removal of tissue that might cause future trouble. He would suggest to Dr. Dowd the use of zinc plaster instead of rubber, as the latter was more likely to cause irritation and produce sores.

Dr. Morris said the coraco-brachialis and deltoid carried on the work when the pectoral muscles were removed. In some very fat patients, when there was a deep hole it could be filled in with clots of blood, but these must be saved in saline solution while the operation was going on. In cases in which there was suffering from œdema, alternate dipping in cold and hot water would give relief. Some of his patients suffered from neuralgia, but authors did not say much about that condition.

Dr. Samuel Lloyd thought there was little doubt that the complete operation was the best. He favored beginning in the axilla, cutting the tendons of the muscles first, and cleaning the axilla without drawing on the muscles. This also avoided working in cancerous tissue toward the lymphatics of the axilla. It seemed important to him not to make tension across the axilla. He preferred to make flaps from contiguous skin.

The chairman called for Dr. H. A. Ochsner, of Chicago, who said he had come for the purpose of being instructed, and he had been. The profession of his city felt jealous of the New Yorkers, because they had such a handsome library, elegant meeting-place, and brilliant organization.

The chairman also called for Dr. W. J. Mays, of Rochester, Minn., who said he did not come to make remarks upon the valuable papers. In the operation leaving the pectorals there seemed to be more pain from contraction than in the Meyer operation. The paper showed that the best result could be expected when the operation was performed in the early stages.

Dr. Dowd said he had not used blood clots in filling in the wounds. As to resulting neuralgia, he had seen a good many cases of it, but they did not last very long—some perhaps for a few months, none ever more than a year.

Bottini's Method for the Galvano-Caustic Radical Treatment of Hypertrophy of the Prostate, with Demonstration of Instruments.—Dr. Willy Meyer read a paper on this subject. He said the surgeon found it difficult to advise the best method of radical operation for hypertrophy of the prostate gland, for there were many operations and the difficulty was in selecting the better one. This was especially so if the patient was over fifty years of age and refused to have the testicles removed or the vasa deferentia resected. Whether prostatectomy should be tried, or an effort made to influence the size by ligating the internal iliac arteries, or to establish suprapubic fistula with permanent drainage of the bladder, was a question. He had seen patients get along very well with a suprapubic fistula, but others suffered a great deal. We were indebted to Dr. A. Freudenberg, of Berlin, for calling attention to Bottini's galvano-caustic radical operation. It was strange that so excellent an operation should be used by only one man for twenty-two years, and that man the author of it, when the operation had been presented to the profession by the author. It was probably due to the fact that the instrument was made in Italy, and Bottini was ever expecting to make improvements. Now the instrument was made by W. A. Hirschmann, of Berlin, and its manufacture could be relied upon. Bottini first operated in 1875, using what is called the "cauterizzator" and incisor, in the shape of a catheter of medium calibre, with short beak, carrying a porcelain disc on a platinum plate about three-fourths of an inch

long. With this plate, made redhot with the electric current, he cauterized the prostate thoroughly at different spots, and if necessary repeatedly. When the eschar was pushed off, improvement began. Sometimes it was thirty days before the patient felt the change. Two years later he published five successful cases. Then he used only the incisor, which removed the mechanical obstruction to the outflow of the urine by slowly burning a groove or grooves through the same and not by superficial destruction. Dr. Meyer presented this instrument to the society. It was made with a male and female arm; the shank contained a platinum knife, about five-eighths of an inch long, which left the groove of the female arm on turning an Archimedean screw at the outer end of the instrument. A scale attached regulated the length of the groove to be cut. There was also a cooling apparatus which prevented injury to the bladder or urethra. The operation should be preceded by cystoscopic examination. This would exclude the possibility of vesical calculi, and then it was possible to diagnose the presence of a median lobe to the prostate. Dr. Meyer said he had done this, as operation afterward confirmed the diagnosis, and he mentioned it because Dr. Fuller maintained in the section on genito-urinary surgery that it was not possible. The technique of Bottini's method was simple. The bladder was emptied and irrigated; the posterior urethra locally anæsthetized with cocaine by injecting one and one-half drachms of a one or two per cent. solution directly into the posterior urethra or into the anterior, and gentle massage applied over the perineum. Five minutes later the operation could be performed. The bladder must be thoroughly emptied before introducing the cautery, for the cautery is then much more effective. It would be found in many cases that the gland surrounded the internal urethral orifice like a collar. Having tested the instrument to see if it is perfect in all respects and the cooling apparatus all right, Bottini burns three grooves—the first toward the symphysis, another just opposite directly back toward the rectum, and one through the lateral lobe that is the larger. Dr. Meyer described the operation in detail. The operation lasts, according to the number and length of the grooves cut, about five minutes. The patient suffers but little inconvenience during or after the operation. It had been performed without cocaine, and the patient said he preferred it to examination with the stone searcher. Soon after the operation the patient generally complains of a burning sensation on passing water. Most of them remain permanently out of bed, the general reaction being almost *nil*. If the bladder has been carefully irrigated there is no rise in temperature. In eighty cases Bottini had not seen a serious hemorrhage, and advises against the permanent catheter. The effect is often immediate. Even patients eighty years old, slaves to the catheter, commence to void the contents spontaneously a short time after operation. Dr. Meyer mentioned some of the theoretical objections to the operation, but experience had proven these unimportant. A careful observer had never seen a recurrence in twenty-two years. The writer gave a short *résumé* of the operations performed by different physicians and their results. He thought the operation should be given a fair trial, and if it should really prove to be of such great value in the greater number of cases of this dreadful disease, it would become a duty to place it first among the radical operations for hypertrophy of the prostate gland.

Dr. Alexander discussed Dr. Meyer's paper at length. He thought there was doubt as to the extensive use of an instrument with which it was necessary to work in the dark. All his remarks were necessarily theoretical, for he had not had any experience with the instrument. He believed that there were many cases in which it was not so much a question of operation as scientific surgical catheterization.

Dr. Meyer said there had been reported only two accidents. These were hemorrhage. With the perfection of the instrument as it was now made there was apparently no danger in the operation.

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, November 22, 1897.

Arthur M. Jacobus, M.D., President.

Address of the President-Elect.—Dr. A. M. Jacobus delivered this address, and, in doing so, presented an outline of what should be the work of the society for the new year. He said that he was heartily in favor of the dispensary bill of last year, if slightly changed, and believed that if physicians, like the members of other professions, would get together and stand by one another the result would be sure. But the desired reform could be secured only by legal enactment.

Regulations for Midwives.—As the Society of Medical Jurisprudence at the meeting this month had appointed a committee to investigate this matter, he suggested that the committee on legislation of the County Medical Society should confer with this committee, and report back to the society.

Public Hygiene.—Touching upon other matters relating to public health, the speaker suggested the establishment of water-closets at drug stores or other places, at suitable intervals throughout the city; the advisability of carefully looking into the claim that the asphalt pavements were injurious to health by forcing noxious gases into houses; and the sanitary aspect of the long school hours for young children, with desks not adjustable to the varying heights of the little pupils.

A Fighting Society.—In reviewing some of the past work of the society, the speaker said that certain persons had referred slightingly to the County Medical Society, dubbing it "a fighting society." As the society had fought persistently for the honor of the medical profession and for the public good, by endeavoring to suppress quackery, this assertion should be taken as a compliment; a society that did not have some of this kind of fighting-blood in it was not of much account.

The society began a series of prosecutions in 1880, shortly after the passage of the law against irregular medical practitioners. Since 1880, the counsel fees and other costs of these prosecutions had amounted to $36,567.39; the fines imposed amounted to $21,585, and the fines collected to $14,160. This left a large annual deficit in this account. Why the profession should be made to bear the cost of prosecuting irregular practitioners of medicine was hard to understand, but he has been informed that if this work were dropped by the society, it would not be taken up by the public prosecutor.

More Members Needed.—Unless more money was at their disposal, this good work must cease. The necessary funds could be procured only by increasing the annual dues or adding five hundred members. He was in favor of holding out the olive branch to those of special schools, providing they would abrogate their sectarian principles, as many of them had already done. The society should also welcome the return of those who left the society many years ago because of a wrangle over the phrasing of a series of bylaws.

Standing Committees.—The following committees were then appointed: *Committee on Ethics*—Drs. Robert A. Murray, *Chairman;* William Balser, Malcolm McLean, Robert Milbank, and J. Lee Morrill. *Com-*

mittee on Hygiene—Drs. J. Henry Fruitnight, *Chairman;* E. S. Bullock, Augustus Caille, Grace Peckham Murray, and Bernard Sachs. *Committee on Legislation*—Drs. Alexander Hadden, *Chairman;* James H. Burtenshaw, Thomas J. Hillis, John B. Huber, Maurice J. Lewi, Charles E. Lockwood, Evarts M. Morrell, Thomas E. Satterthwaite, George F. Shrady, Theodore K. Tuthill, Simon J. Walsh, and Wickes Washburne. *Committee on Prize Essays*—Drs. Simon Marx, *Chairman;* Robert H. M. Dawbarn and George C. Freeborn. *Auditing Committee*—Drs. Robert Campbell, *Chairman;* and Hobart Cheesman.

A Special Committee.—On motion of Dr. Satterthwaite, the following were appointed on a committee to consider the relations of the board of health to the medical profession: Drs. T. E. Satterthwaite, Alexander Hadden, A. Jacobi, H. G. Piffard, and Andrew H. Smith.

On motion of Dr. Piffard, the question of regulating midwives was referred to the committee on legislation, and the other matters alluded to in the president's address were referred to the committee on hygiene.

(Resolutions on the death of Dr. Avery were then adopted, and ordered sent to the medical journals.)

Prize Essay: A Contribution to the Pathogenesis and Etiology of Diabetes Mellitus.—Dr. Heinrich Stern was the author of this essay. The essay will appear in full in a future issue of The Medical Record.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, November 15, 1897.

I. Blake White, M.D., Vice-President, in the Chair.

A Study of the Nares and Pharynx in a Case of Hæmophilia.—Dr. Seymour Oppenheimer read a paper with this title. He said that the case to be reported presented a peculiar symptom group which rendered the classification exceedingly difficult.

The patient was a woman, thirty-two years of age, whom he had first seen in December, 1896. A younger brother had suffered from frequent and copious nasal hemorrhages during childhood, and had been accidentally killed before reaching adult life. The patient herself had been married eleven years, and had one boy, who was in good physical condition. She had enjoyed good health up to five years ago, when she had had "rheumatism of the heart." Four years ago it was noticed that the thyroid gland was increasing in size, but it gave no particular trouble, and medical advice was not sought. Later on she developed exophthalmos, together with almost all of the usual symptoms of exophthalmic goitre. In July, 1896, she first noticed a few small dark spots on her thighs. These disappeared in a few weeks. She then became very nervous and complained of frontal headache, which was relieved by the occurrence of profuse epistaxis. She next had an attack of angina pectoris, which was followed by some indigestion. These attacks were repeated at intervals, and the same succession of phenomena was usually observed. The purpuric eruption usually recurred about once in two weeks. Sometimes the epistaxis and purpura, especially the former, would replace the menstrual flow. All of these attacks came on without apparent exciting cause. A number of times the epistaxis began in the night, while she was asleep. The attacks of epistaxis were prolonged, and in one instance lasted for ten hours. The purpuric spots were not elevated above the skin, and were at first of a pink or red color, gradually becoming black, then yellow, and finally fading away. The eruption was most abundant on the inner surface of the thighs.

When she was first seen by the speaker her appearance was that of a chlorotic patient, and she then had some purpuric spots on her body. The turbinated bodies were found sclerosed, particularly the middle turbinate. After the nose was cleansed a minute ulceration was seen on the left side of the septum, over the situation of the anterior septal artery. The mucous membrane of the septum was congested and macerated, and the septum was thickened. On removing the blood coagula, it was seen that the tissues beneath were the seat of a general sclerosis. There were at this time no petechial spots on these tissues. As a rule, the blood would ooze from the nose, instead of escaping in a stream. In subsequent attacks of epistaxis it was found that the blood seemed to ooze from the inferior and middle turbinated bodies, and from the septum, particularly from the areas covered with cavernous tissue. The bleeding did not come from one or two points, but was comparable to perspiration in the manner of its escape. The hæmoglobin percentage was fifty-eight. As she was a poor woman, she could not be kept in bed and perfectly quiet. The only drugs that seemed to be of any avail were inunctions of the biniodide of mercury and tincture of belladonna, pushed up to twenty minims at a dose. In January the petechial eruption appeared for the first time on the posterior pharyngeal wall. She steadily improved during the spring, the attacks of epistaxis and the purpuric eruptions becoming less and less frequent.

The diagnosis seemed to lie between exophthalmic goitre, purpura hæmorrhagica, peliosis rheumatica, and hæmophilia, although practically it was between hæmophilia and purpura hæmorrhagica. In the latter the bleeding from the mucous membrane, the speaker said, was usually very severe, and was seen in young and delicate persons. This patient was an adult who had been strong and well developed previous to the eruption and the epistaxis. She appeared anæmic only when the attacks of epistaxis were very frequent, and the blood count rapidly returned to the normal. The oozing from the erectile tissue seemed to indicate a marked constitutional dyscrasia, and it was specially worthy of note in this case, because hemorrhage in cases of nasal sclerosis was quite rare. Before the occurrence of the hemorrhage there would be a feeling of fulness in the head, and especially over the bridge of the nose. On several occasions the nasal cavities were inspected shortly before an attack of epistaxis, and it was then found that the tissues became more and more turgid until the onset of the hemorrhage. The blood was watery, coagulated very slowly, and contained a small percentage of coloring matter and a large number of red cells. When epistaxis was the result of a constitutional vice it was likely to be bilateral, in contradistinction to the unilateral hemorrhage so commonly observed when the cause was traumatic.

Nosebleed in General.—Referring to epistaxis in general, the speaker said that shortly before an attack of nosebleed there was not uncommonly a peculiar pruritus, involving especially the anterior nares. This itching was peculiar, in that the scratching did not afford relief, and the pruritus was constant and resisted all the usual remedial measures. In a few cases it had seemed to him to be coincident with an excess of uric acid in the system. In the control of a severe attack of epistaxis he had found it convenient to cleanse the nose with a spray of peroxide of hydrogen under fifteen pounds' air pressure, and then astringents or the cautery could be easily applied if the source of the bleeding was found to be located anteriorly. It had seemed to him that in a general way the character of the bleeding indicated its source. Thus if the blood were bright red, not clotted, and

flowed in a steady stream, the anterior septal artery was probably the source of the hemorrhage. If the hemorrhage occurred in drops, it was probably from the septal or turbinal tissues. If the blood seemed to flow more into the pharynx, it would usually be found to come from the extreme posterior end of the middle turbinated body. Hemorrhage from the pharyngeal mucosa was most commonly due to such traumatism as the lodgment of foreign bodies.

Dr. F. J. Quinlan thought that many even alarming hemorrhages from the nose were purely local, and hence, instead of blindly packing the nasal passages with tampons, the parts should be inspected under suitable illumination, and, if possible, the bleeding point discovered and the hemorrhage controlled. He believed, with the reader of the paper, that many cases of epistaxis were due to reflex or constitutional causes, and sometimes to vicious habits. He had known it to be associated with masturbation and other conditions of genital irritation. Accompanying such irritation it would often be found that the nasal tissues were unduly engorged. Again, adenoid vegetations constituted an important factor in the etiology of the epistaxes of childhood. The part played by atrophic rhinitis had not been especially emphasized in the paper. It was almost instinctive for every person to make an effort to remove anything causing obstruction in the nasal passages, and therefore violent blowing and picking of the nose were often the exciting causes of nose bleed. In these cases there was frequently an atheromatous condition of the vessels which predisposed to hemorrhage. Another source of hemorrhage was an engorgement of the large plexus of vessels at the base of the tongue—that condition which Lennox Browne had denominated "throat piles." This plexus was frequently impinged upon by the epiglottis and the circumvallate papillæ at each act of deglutition. Again, the posterior tips of the turbinated bodies not infrequently became varicose. When this condition was marked, he thought one should hesitate about using a galvano-cautery or any escharotic which might break down the already partially disorganized vascular condition of the parts. The three cases of hæmophilia that he had seen had been traceable to some organic condition—in one case to incipient Bright's disease, in another to cirrhosis of the liver, and in the third to malignant disease. He had never seen a case of pure and simple hæmophilia. There was no better agent for causing a shrinkage of the tissues in the nose than cocaine. This application would, therefore, not only produce anæsthesia, but would diminish the hemorrhage and clear the field for observation. After this had been done, it would be found in probably eighty-five per cent. of all cases of epistaxis that the source of the hemorrhage was the little tubercle of the septum, almost on the floor of the nose, and that it could be easily controlled by pressure with a small pledget of cotton or by touching with a crystal of chromic acid or with nitrate of silver on the end of a probe. The application of the galvano-cautery was sometimes dangerous, because it broke down the already weakened blood-vessels. A great cause of epistaxis was an irregularity of the nasal septum and the consequent obstruction to the return of venous blood.

Dr. J. J. Concannon said that he had treated over one hundred cases of epistaxis, and believed that over seventy-five per cent. of them had originated from the septum. But the hemorrhage usually came from a number of small openings scattered over the septum, so that the application of a crystal of nitrate of silver or of chromic acid would not be sufficient. The cautery was in his hands the most successful application. Some of the worst cases of bleeding he had ever met with had occurred in women at the climacteric period, and the bleeding seemed to come from the middle turbinate in most instances. The application of a ten-per-cent. solution of cocaine would shrink up the parts sufficiently to enable the physician readily to find and control the bleeding point. It would be noticed sometimes that there was an alternate congestion of the turbinates. The books stated that this was a symptom of catarrh, but his experience had led him to believe that it was a perfectly normal condition.

Dr. George Tucker Harrison said that probably more cases of epistaxis were seen by general practitioners than by specialists. In the worst cases that he had met with he had invariably succeeded in controlling the bleeding by packing the nares with iodoform gauze. It was infinitely better than cotton.

Successful Operation on an Enormous Inguinal Hernia.—Dr. A. Ernest Gallant reported a case of inguinal hernia of enormous size upon which he had operated. He said that these cases had formerly been considered inoperable, but two successful cases of this kind had been reported in this city during the past year.

In April, 1895, a woman of sixty-two years had come under his care. She stated that twenty-six years ago she had felt a snap and that something seemed to give way in the left groin. A small protruding mass was noticed, and this mass increased in size with the birth of each of her four children. On several occasions the hernia had become incarcerated, and at the time of her admission to the Lebanon Hospital she was almost bedridden. A photograph was presented showing the condition of the patient before operation. The hernial mass extended half-way down to the knees.

A large incision was made, extending up on to the groin. The hernia was made up of two-thirds of the transverse colon, all of the descending colon, and considerable omentum. The wall of the sac was quite thin. The reduction was very difficult, the hernia being of such long standing and the abdomen quite flat. Sixteen inches of the small intestine was dissected with some difficulty from the lower part of the sac. Owing to the thickness of the ring it did not seem probable that the ordinary Bassini operation would be successful, and he had accordingly stitched the internal oblique, transversalis, and peritoneum to the inside of the abdomen, just at the angle of Poupart's ligament, and had then stitched the layers of Poupart's ligament to the external oblique and the fascia above, and had closed the skin. The skin incision reached down to the lower part of the labium majus and up for a distance of twelve inches.

Dangerous Distention of Bowel Relieved by Massage.—The patient rallied fairly well from the operation, but on the second day there was considerable distention of the bowel. She was given a saturated solution of Epsom salts at short intervals, and also enemata, but without result, and on the third morning he had been notified that the patient was suffering from intestinal obstruction and that an operation seemed to be demanded. The speaker said that in July, 1896, he had published a plan of treating cases of intestinal distention, which consisted in removing the dressings and applying systematic massage over the colon. This procedure was tried in the case under consideration, and in a few minutes a gurgling in the bowel was heard. The pain rapidly diminished, so that the massage could be carried on with more pressure. After about fifteen minutes there was a sudden explosion of gas, and from that time on the patient steadily convalesced. After leaving the hospital this woman was able to do washing and ironing, and attend to her household. He had seen her last in March, 1897, and she had then been in excellent condition. The result seemed to him specially satisfactory in view of the fact that this woman had been an invalid and bedridden for many years. He believed the good result to have

been due to the method of suture and also to the simple and ready method by which the great distention of the intestine had been relieved without further operative interference. Dr. Gallant said that about six weeks ago he had done a hysterectomy, and had had to remove two inches of the abdominal wall because of extensive cicatricial tissue. Within forty-eight hours the patient began to suffer a great deal from abdominal distention. She was subjected to this massage for fifteen minutes, with marked relief and benefit. The first case in which he had tried this method had been one in which the distention had existed for five days. After twenty minutes' rubbing the gas had been passed freely, and the patient had gone on to recovery. In addition to performing massage in this manner, the patient should be turned on one side to favor the escape of the confined gas. Cathartics did not meet the indications in these serious cases, but this simple method would be found both safe and effective.

Useful Genito-Urinary Instruments.—Dr. Ferdinand C. Valentine exhibited a number of genito-urinary instruments, which he said would be found as serviceable to the general practitioner as to the specialist. The first one was a convenient modification of the Guyon syringe. The second was a French urinal, so constructed that the distal end of a retained catheter was kept constantly immersed in an antiseptic solution, and the urine overflowed from time to time into a larger compartment. The third instrument was a modification of his own apparatus for irrigating the urethra and bladder. He had found it more convenient to substitute a metallic shield for the glass one. The soft-rubber tubing from the reservoir now passed through a split metallic tube, and by simply sliding a ring back and forth this split tube was made to expand and contract, and by pressure on the inclosed rubber tubing it perfectly and delicately controlled the flow of fluid through the latter. This modification had been found a very decided improvement on the older form of stopcock used with this apparatus.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

ROYAL COLLEGE OF SURGEONS, ANNUAL MEETING—ANOTHER UNIVERSITY SCHEME—M. CALOT AT THE CLINICAL SOCIETY, HIS TREATMENT OF POTT'S DISEASE—MEDICAL SOCIETY, CRETINISM, COLEY'S INJECTIONS—JUBILEE OF ANÆSTHESIA—THE TYPHOID EPIDEMICS THE LATE SURGEON O'GRADY—DEATH OF DR. CAGNEY—ROENTGEN SOCIETY.

London, November 1, 1897.

Sir William MacCormac, as president, took the chair at the annual meeting of fellows and members of the Royal College of Surgeons yesterday afternoon. He pointed out some of the more important items in the report of the council, most of which have been mentioned in this correspondence as the matters to which they had reference occurred. He also defended the statement issued on the occasion of the plebiscite of fellows as to the representation of members. This question was now brought before the meeting in distinct resolutions, on which the speeches resembled many that have gone before. By twenty-three to two a resolution was carried to the effect that the recent vote of fellows cannot be regarded as a final expression of opinion. Then by thirty-seven to one the meeting repudiated the claim of the council to represent the members as well as fellows, and demanded the franchise for members.

The meeting then considered the question of medical-aid societies, on which the sister college in Dublin has recently issued a statement against those who accept office under disgraceful conditions. Whether the corporations generally will follow remains to be seen.

A movement has been going on for some time to organize a teaching university, and a fresh scheme is about to be launched. It is a federation similar to that which failed to secure the indorsement of Parliament. It would leave the University of London as it is, and be itself a teaching one only. It is proposed to call it the University of Westminster. The weak point appears to me to include a faculty of theology. It may not be easy to get the government to adopt so risky a proposal.

Dr. Calot met with a reception by the Clinical Society which ought to disperse any doubts he may have entertained as to the cordiality of English professional feeling. There was a good audience to welcome the pioneer of the revival of a mode of treatment of Pott's disease by immediate reduction of the deformity, and even those who had most misgivings as to the value of the method were as hearty in their reception as those who were quite convinced. Messrs. Jones, Tubby, and Murray all had cases to relate, but as the discussion was adjourned I will postpone any consideration of this to make room for some of M. Calot's remarks, who spoke in French and was listened to with close attention.

He said that in treating Pott's disease the sole object he had was to correct the deformity. To attack the palsy or congestive abscess is to change a disease which has ninety-five per cent. of cures to one with ninety-five per cent. of deaths. The prudent surgeon's attitude was that observed in knee or hip disease. Hitherto the results of immediate reduction had been very favorable and he looked for further improvement in the future. Out of six hundred cases, of which notes had been furnished him from various countries, the fatality of one per cent. might compare well with other recognized operations. If, besides, he had met with three cases of paralysis following operation, it should be remembered that in Pott's disease paralytic complications occur in about one in five cases. Further, he had eight cases in which paralysis was relieved by his operation. The following cases were not suitable for the treatment: children in an advanced state of cachexia, those suffering from cough, those with congestive abscesses or with fistulæ, and those with hunchback of long standing which resist traction of from fifty to eighty kilograms.

M. Calot then detailed the treatment he adopts in cases of long-standing ankylosed deformity. Though it is possible, he holds, to reduce them by traction, it is more surgical to lay bare the adhesions and proceed to break them down by a plan varying with their position. Remote accidents, M. Calot said, are less to be feared than after-operations on the knee. When there is default of union, the latter can be brought about artificially by denuding the laminæ at the parts where they are in contact, and placing periosteum over the point of desired junction. He had provoked artificial union on ten occasions and was half inclined to recommend it as a routine procedure. The plaster apparatus he uses was then described. It is left on from three to five months if the child is doing well, and may have to be renewed once or even twice. The ultimate duration of treatment varies. In acute cases it is the duration of Pott's disease itself, one or two years; in curvature representing a past Pott's disease it might not be more than from four to eight months.

At the Medical Society's meeting Dr. Colman showed a girl of nine and a half years as an example of partial cretinism. She was just three feet high and weighed only two stones two pounds. Stunted growth, absence of any accessible thyroid, fat mases in the anterior tri-

angles of the neck, thick lips, and puffy eyelids were the signs of cretinism. Lordosis and prominent abdomen were also observed when the girl came under notice last June. There was, however, entire absence of the usual nervous symptoms, and the girl was intelligent, bright looking, and had reached the second standard at school. She was put on three grains of dried thyroid extract, and in the four months has grown two and a half inches, and her appearance has become less characteristic. Dr. Colman suggested there might be an accessory thyroid which sufficed for the nutrition of the brain but not for the body. The president remarked that there might be other cases of partial cretinism which it would be well to observe and treat with thyroid.

Dr. Carr showed a girl who had lost what he described as the typical cretinoid appearance which she presented in February, 1896, when she was five years old. Treated with thyroid she now presents a healthy aspect, goes to school, and gets on there. Her weight has increased from twenty-four and a half to thirty-seven pounds, and her height from thirty to thirty-seven and a half inches.

At the same meeting Mr. Mansell Moullin showed two cases in which inoperable tumors had, he said, almost disappeared after repeated injections of Coley's fluid. One tumor was in the groin, the other in the abdomen. They were considered sarcomatous, but there was no proof of their nature. They were certainly not gummata. If they had been inflammatory, they would almost certainly have suppurated. Mr. Cheyne remarked that the treatment seemed only to benefit spindle-celled sarcomata. Dr. Colman said he had examined two tumors post mortem, one ten days after Coley's injections, the other ten months after. In the first he found a cavity containing two drachms of yellow fluid, composed of broken-down cells; in the older case an ordinary cicatrix at the site of injection.

The Society of Anæsthetists held a *conversazione* last night to commemorate the jubilee of the introduction of anæsthesia. A number of interesting exhibits connected with the subject were shown, among which perhaps the most noteworthy were those of Mr. George Foy, of Dublin, whose "History of Anæsthetics" will be familiar to some readers.

The epidemics of typhoid, although diminishing, are still occupying our serious attention. In Maidstone the number of cases notified has reached 1,848, with some 130 deaths. At Lynn the medical officer of health reports that there has been exaggeration in the papers, and there is an abatement of the epidemic, only one death having taken place this week. But the total cases have reached 406, a large number out of a population under 19,000, and another death occurred yesterday, being the thirty-fifth. The Belfast report is 13 new cases for the week. At Clifton the plague seems stayed, but has affected 200 people and killed 15. Smaller outbreaks are reported in other directions, which it is hoped may be circumscribed.

Sir George Duffey, president of the Royal College of Physicians, Dublin, took the chair at an influential meeting, at which it was resolved to raise a memorial to the late Surgeon O'Grady.

James Cagney, M.D., A.M., etc., physician to the Hospital for Epilepsy and Paralysis, and electro-therapeutist to St. Mary's Hospital, expired yesterday morning from cardiac failure, in the course of an attack of typhoid. He held a number of other appointments, had contributed numerous papers to societies and journals, and translated Erb's "Electro-Therapeutics."

The Roentgen Society has had a successful *conversazione*, when Prof. Sylvanus Thompson, F.R.S., presided and spoke of the value of the rays in medical work. He also commended the secretary, Dr. David Walsh, and spoke of his book just issued on the subject in appreciative terms. Dr. Walsh is an enthusiast in the new science and physician to the Western Skin Hospital.

OUR PARIS LETTER.

(From our Special Correspondent.)

MEDICAL PARIS IN FULL SWING—REACTION CAUSED BY TOO STRINGENT LAWS—RE-ADMISSION OF FOREIGN STUDENTS—HIGH MORTALITY RATE FROM TUBERCULOSIS IN THE FRENCH ARMY—DEATH OF DR. EVANS—DECREASE OF CRIME, ETC.

PARIS, November 27, 1897.

MEDICAL Paris is again in full swing, the Place de l'École de Médecine is once more crowded with students hurrying to and fro to the various lectures, and one meets at every turn the carriages of professors and general practitioners dashing through the city to visits or consultations, or on their way to their services at the hospitals.

The reaction of the excessive and almost draconian laws, regarding the matriculation of foreign students at the Faculty of Medicine of Paris, has begun. It will be remembered that some years ago a too great number of foreign students matriculated at the faculty, and from this resulted an overcrowding to such an extent that the general council of the faculties was obliged to have recourse to certain measures; among others, that of sending provisorily a considerable number of the foreign students to medical faculties in the provinces. The general council of the faculties seems to have become convinced of the apparent harshness of this measure, and to have relented, for the necessary dispositions have been taken to re-establish the old order of things. The council of the University of Paris has decided that from the present academic year foreign students may be matriculated as in the past at the Faculty of Medicine of Paris. This is in my opinion a wise measure, and should be followed up by a relaxation of the restrictions affecting those who are already physicians and desire to practise in France—a free and republican country.

The tables of medical statistics of the French army for the year 1895, published by the minister of war, show that the general mortality of the army is augmenting every year; from 6.19 per thousand in 1893 to 6.26 per thousand in 1894, it reaches 6.86 per thousand in 1895. It is to the mortality from grippe that this augmentation in the total number of deaths is partly due. Every year since the pandemic of 1889–90, the army has had to pass through an epidemic of grippe; but, while the mortality from that disease was 50 per thousand in 1890, it attained 130 per thousand in 1895—that is to say, a figure almost three times as high.

But what gives most cause for reflection and alarm is that the number of deaths from tuberculosis is continually augmenting; for instance, 162 per thousand in 1893 and 1894, against 165 per thousand in 1895; from the tables of statistics the annual total mortality rate of the French army from tuberculosis may be fixed at 10 per thousand. This is doubtless due to a variety of causes, such as probable bad hygiene in barracks, the exposure of a soldier's life even in time of peace, heredity, overwork, etc. Nevertheless, taking into consideration the fact that an outdoor life is generally conducive to health, especially when coupled with exercise such as is had in military service, this high mortality from tuberculosis is, to say the least, remarkable, and no wonder that it is attracting professional attention. There are many pros and cons in the case, and it is impossible in the short space of one letter to go at all into the etiology. I am satisfied, however,

that, speaking generally, besides all the causes which favor the development of the bacillus of Koch, absinthe drinking and the almost universal habit of cigarette smoking—which, be it said *en passant*, is the very worst form of using tobacco—play a greater rôle than is usually admitted, not only in favoring the development of phthisis, but often as a direct causal factor.

By the death of Dr. Thomas W. Evans, probably the greatest dentist of our day has passed away. Dr. Evans, although never engaged actively in the practice of medicine, followed a regular course at the Jefferson Medical College of Philadelphia, of which city he was a native. During the Franco-Prussian war of 1870, at its very beginning Dr. Evans took great interest in sanitary matters, and was largely instrumental in organizing and establishing the American ambulance; and I well remember my visits to it on the old Avenue de l'Impératrice, just beyond the Arc de Triomphe. The doctor subsequently published a work on the subject. It was at this time that Dr. Sims took command of the Anglo-American ambulance, and left with it for the front, where it did such good service, especially during the battle of Sedan. Both of these ambulances were parts of the great Red Cross Society. Dr. Evans' wealth and success were due, first, to a natural mechanical genius, and to the influence which he obtained in higher circles during the second empire. By advice from those quarters he was enabled to make judicious purchases of real estate.

In Paris they are rather dilatory about publishing statistics. Those of the army mortality for 1895, mentioned above, are just out, as are also those of criminal justice, in which legal medicine is almost always so much interested. The report of the "keeper of the seals," which appeared a week ago, is satisfactory. According to this, for the first time in many years there is an important diminution, not only in the number of actual crimes committed in France, but in that of misdemeanors as well. The report goes back fifty years, during which period there has been a steady decrease in the number of murders by poison—thanks to the progress made in chemistry and legal medicine; parricides have also decreased.

Dr. Quinton, at the last meeting of the Biological Society, reported a rather novel experiment, as follows: "In order to confirm my hypothesis of the great value of sea water to the higher organisms, I practised on the dog intravenous injections of that liquid in extremely large doses; the animals got, effectively, in eight hours, sixty-six one-hundredths and even as much as eighty-one one-hundredths of their weight of sea water, and that without presenting the least accident." Why could not sea water be injected in the human subject as well as artificial serum?

"CURE" IN TUBERCULOSIS.

[illegible]

SIR: I read with a degree of interest Dr. Bogardus' remarks in your issue of November 13th, about the promiscuous use of the word "cure" in connection with the various remedies for tuberculosis. He is right. The use of the word needs qualification. Whether it be in connection with "tuberculin" (tuberculocidin, antiphthisin), or "serum," or "antitoxin" (by the way, another word that needs definition badly), etc., the word "cure" becomes almost bitter sarcasm in the face of the negative results that, candidly, have to be recorded.

As long as we have to deal with the condition that mixed infection presents, and there are at least ninety cases out of a hundred, I am afraid we shall not be able to effect a "cure" in its absolute meaning; not, at any rate, until we know more about the cell life, or until the inherited power of resistance comes to our aid in becoming so developed as successfully to resist the *casus belli* from the very outset. The first contingency is possible, the last one probable; but it will require generations of hygienic and sanitary prophylaxis. But, even so, it points out to us the fact, reinforced by the failures of the past, that the battle must be fought along nature's lines. To develop the power of resistance means to develop the general vitality, and the *rationale* of this must lead us to climatic treatment and hyperalimentation, supplemented, according to circumstances, by an auxiliary remedial one. And that is all medication possibly can be, that is, auxiliary. I mean, too, medication along general lines. "Specifics" should be tried on the dog.

The letter of Dr. Bogardus does not lead me to make any remarks about the climatic treatment or hyperalimentosis, but about the remedial one; so much the more, as I am perhaps, to a certain extent, responsible for the introduction of intratracheal medication by means of a syringe, not catheterization. Of all the methods of administration, I have in my particularly varied experience with tuberculosis found intratracheal medication, that is, more properly speaking, intrabronchial injection, the best. In the first place it does not interfere with the process of digestion. Whether it be with menthol, or guaiacol, or iodine, or iodol, etc., I know I bring the remedy *in situ*, right into the bronchus, from where it slowly diffuses throughout the lung tissue—the shortest cut to the spot of lesions. I am more sure the chemicals reach there in an undecomposed state than by way of the œsophagus; for Heaven only knows what metamorphosis they undergo in contact with the ferments and saline constituents of the alimentary tract. The operation of the syringe is easy; not difficult to learn after a few experiments, preferably on charity patients. And, best of all, there is as a rule immediate relief, not achieved by common expectorants, especially observable in the enervating, harassing, hacking cough of tuberculosis. Oftentimes I have been able to eliminate quickly by means of this intrabronchial injection asthmatic and pneumonic complications, and more often an underlying subacute bronchitis, with a corresponding improvement in the general aspect of the tuberculosis.

And one more word about "cure." With special reference to tuberculosis, considering its tendency toward the deadly triple alliance with the streptococcus and staphylococcus, if we, by means of any rational treatment, fight them to a standstill, even for a time—in other words, secure a postponement of death—we may well, at the present time and with our present knowledge, employ the word "cure" in a relative sense; and I believe that is the way most physicians take it in this connection.

JOSEPH MUIR, M.D.

234 WEST THIRTY-FOURTH STREET, NEW YORK, November 21, 1897.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending December 4, 1897:

	Cases.	Deaths.
Tuberculosis	180	53
Typhoid fever	40	7
Scarlet fever	124	13
Cerebro-spinal meningitis	1	2
Measles	269	11
Diphtheria	105	27
Laryngeal diphtheria (croup)	2	3
[illegible]	23	9

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Original Articles.

A CONTRIBUTION TO THE PATHOGENESIS AND ETIOLOGY OF DIABETES MELLITUS.[1]

BY HEINRICH STERN, M.D.,

NEW YORK.

I. Introduction.—Since Claude Bernard's ingenious experiments nearly five decades ago, it has been the endeavor of physiologists and observers to ascertain the pathogenesis and etiology of diabetes mellitus. The great number of diverse theories which thus have been advanced did in no way produce a clear conception of the true origin of this affection. Even the character and the course of this disease are ill-defined, and true diabetes mellitus, which alone I shall discuss in the following, is thought to be identical with a more or less complicated grave type of glycosuria, for the absence of glucose from the urine, or its disappearance from it, is deemed by even the latest writers and investigators the *a-priori* fact of the non-existence of diabetes mellitus.

In the writer's opinion, however, diabetes mellitus —that is, what is understood by this term to-day—is not a disease *per se*, but only implies a single stage in the course of a specific and general somatic deterioration. It does not occur as a definite and independent affection, but is the result of deteriorating processes, and in its course gives again rise to other symptoms and conditions. This diabetic glycosuria—which is wrongly styled diabetes mellitus—has its prodromata and its initiatory symptoms, its continuations, and subsequent conditions. In short, diabetes mellitus, as defined by others, is indicative of only one stadium of the general diabetic or glucose-generic deterioration.

The diabetic deterioration from the physiologico-chemical as well as from the clinical standpoint, may be divided into three great stages: First, the prodromic or preglycosuric stage; second, the period of glycosuria (the diabetes mellitus of to-day); and third, the postglycosuric stage or the period of auto-intoxication.

The preglycosuric stadium comprises a variety of disturbances which only of late have been recognized and pointed out as prodromata of diabetic glycosuria. This prodromic stage tends to show that what is called diabetes mellitus does not occur independently, but is preceded by a chain of more or less pronounced symptoms and conditions which are indicative of a general deterioration. The second stage—the glycosuria—offers a most characteristic and marked symptomatology, and therefore was always thought to be a separate and distinct disease, to which the term diabetes mellitus was applied. I consider the glycosuric stage the transitory period of the diabetic deterioration, as it is the forerunner or premonitory factor of the third stadium of this deterioration, the stage of auto-intoxication.

The duration of the third or postglycosuric stadium varies greatly in different persons. It may be persistent, especially in its lighter manifestations, for months before toxicosis is complete, but I have seen a few cases in which the condition of perfect auto-intoxication developed to all appearances within an hour's time, when the death of the patient ensued. This stage does not exclude glycosuria completely, but is always characterized by a diminished flow of saccharine urine with the presence of dimethyl-ketone in excess, of ethyl-diacetic, and of lævorotatory oxybutyric acids. In addition thereto, the present writer thinks that he has of late succeeded in identifying an abnormal chemical substance in the blood of diabetics who have died in a comatose condition. A conclusive statement, however, about his observations he deems somewhat premature, and beyond the scope of this treatise.

The so-called true diabetes I therefore designate as diabetic glycosuria, or the glycosuric stage of the diabetic deterioration.

All other varieties of glycosuria have nothing in common with the diabetic deterioration. They are without exception secondary disturbances which almost always pass away when the primary affection has disappeared, and are therefore more or less transitory in character.[1] They may occur as sequelæ of a number of diseases, of traumatosis, of hyperneuria and excessive nervous irritability, of childbirth, of operations, of different forms of alimentary disturbances, or as the result of hyperingestion of sugar or other carbohydrates, of the introduction of irritating substances, and of the administration of certain drugs, as strychnine, curare, and phloridzin ($C_{21}H_{24}O_{10}.2H_2O$).[2]

II. Pathogenesis of True Diabetes.—Pavey, from the standpoint of physiological chemistry, holds the liver responsible for the diabetic condition. In normal digestion the carbohydrates, he explains, are converted into maltose and not into glucose, dextrin being intermediate in the process. Maltose is absorbed and assimilated as such, and stored away as glycogen. When pure glucose is introduced into the stomach, he continues, it will readily be converted into maltose, under the influence of a special glucose ferment during gastric and intestinal digestion. This ferment can exist only in healthy venous blood. In the diabetic state, however, the blood enters the circulation of the liver in a condition of insufficient deoxygenation, thus giving rise to the production of a glucose-creating ferment. This imperfect dearterialization Pavey explains as due to vasomotor paralysis, especially of the vessels of the chylopoietic system. The glucose thus formed is an abnormal product, and, not being capable of assimilation, enters the circulation and makes its appearance in the urine.

The fact that carbon dioxide outside the body may retard the conversion of glycogen into glucose was utilized by Ebstein, when he advanced his explanation

[1] Being the prize essay read before the Medical Society of the County of New York, 1897.

[1] The primary affection, on the other hand, may be followed by a permanent disorder or structural change, and thus a chronic glycosuria, or conditions which favor or cause even diabetic deterioration, may be the consequence.

[2] Phloridzin is a crystalline glucoside which has been employed in the treatment of glycosuric conditions. Phloridzin diabetes, which is produced by overdoses or prolonged administration of the drug, is considered by many investigators a type of true diabetes, to which I cannot agree, as the disappearance of this form of glycosuria, almost in every instance, ensues soon after the withdrawal of the phloridzin or the diminution of its dose.

of the origin of diabetes, which ignores any local cause. His view is, in short: The protoplasm of the diabetic organism has an inherent defect, and varies from that of the healthy body; that from a known quantity of carbon-containing matter it forms less than the normal amount of carbon dioxide. The conversion of glycogen into glucose becomes inordinate—that is, larger quantities of the latter are produced, as the necessary amount of carbon dioxide with its retarding factors is not present in the diabetic state.

Cantani agrees that the body produces less carbon dioxide in diabetes than normally. He considers this, however, the result and not the causative factor of the affection. He is of the opinion that the carbohydrates are directly utilized in the animal economy, and does not believe that they are converted into glycogen and as such deposited in the muscles, liver, and other organs. He draws the conclusion that, if the saccharine and starchy ingesta had to be first converted into glycogen and then into glucose before the latter makes its appearance in the urine, the time left for such a conversion would be entirely too short.

If in the late stadium of diabetes a given quantity of sugar is administered to a patient, exactly the same amount of sugar may be obtained again in the urine, and it is unlikely that this would happen, Cantani says, if the sugar had to be first concreted into glycogen and then again into glucose. If the latter were the case, some of the sugar ingested by the patient would certainly remain in the system and be retained there as glycogen.

Lépine,[1] after numerous researches on the relation of pancreatic disease to diabetes, is of the opinion that the healthy pancreas normally produces a ferment which enters the blood through the lymph current. He assumes that this ferment, which after Nommès[2] he called "glykolysin," is effecting the dissolution of the saccharine substances in the system. The non-presence of this ferment in the blood he supposes to be the cause of diabetes.

In framing his theory Lépine started from the fact which had been first noticed by Claude Bernard, that the sugar disappears from drawn blood, attributing this disappearance to the action of the ferment which originates in the pancreas. The glycolytic ferment, he further assumes, is greatly reduced in blood drawn after the extirpation of the pancreas and in that of diabetics.

Seegen,[3] who after a number of experiments maintains that the liver produces sugar from albumin and fat and glycogen out of carbohydrates, when reflecting on Lépine's hypothesis about a glycolytic ferment of pancreatic origin, the absence of which would cause accumulation of sugar in the blood, makes the following point: Admitted even that the blood of diabetics possesses less glycolytic action than that of a healthy person, it need not follow that this indicated the presence during health of a special glycolytic ferment produced by the pancreas. (He observed that normal glucose will disappear rapidly from freshly drawn blood when the latter is kept at a temperature of 39° C., while a current of air is passed through it. To prove that the disappearance of the sugar was not due to the activity of the protoplasmatic substance, he killed the latter by adding chloroform. This made but a slight difference in the glycolytic action.) Seegen further remarks that, since the glycolytic activity is increased upon standing of the drawn blood for some time, the ferment may be produced rather by some alteration in the blood outside the body than by the pancreas, and argues that the blood in diabetes may contain something preventing glycolysis, so that, even if Lépine's experiments are correct, they do not necessarily indicate a diminution of the glycolytic ferment in the diabetic state.

Besides Lépine, a great number of investigators have made observations as to the relationship of the extirpation of the pancreas or pancreatic disease to diabetes mellitus. I mention only de Dominicis, Hédon,[1] Thiroloix,[2] Gley, Harley, Cappareli, von Mering and Minkowski.[3] The latter two especially have given a great deal of attention to this problem. Minkowski, speaking on the causes of diabetes after the extirpation of the pancreas, says, in short, the following: There is no doubt that the occurrence of experimental pancreatic diabetes is the result of certain disorders in the system, due to the removal of the pancreas. The nature of these disorders, however, cannot be told with any degree of certainty as yet.

In dogs and other animals, after the extirpation of the pancreas, grape sugar, that which is ingested as well as that which has formed in the system, is not utilized in a normal manner, and the deposition of glycogen in the liver does not occur normally. It may be assumed that there is a dependency between these phenomena. After removal of the pancreas there happens either an accumulation of something abnormal in the system, or a normal function disappears. That is, either the pancreas has normally the function to remove a ferment-like or toxic substance, whose retention in the system causes the elimination of sugar; or it is a normal function of the pancreas to effect the consumption of the sugar in the organism, and the deficiency of this function is the cause of diabetes mellitus.

The abnormal accumulation of sugar in the blood in pancreatic diabetes is undoubtedly the cause of its passage into the urine. It is easy to assume the substance, circulating in the system, which through abnormal formation of the sugar produces the accumulation of the same in the blood. Some observers have maintained that the next result of the removal of the pancreas is the conversion of glycogen by a saccharifying ferment, others assume that an increased waste of tissue material is the direct consequence.

More plausible, however, is the assumption that the pancreas has to perform a specific act normally regarding the consumption of sugar, and that the disappearance of this function means the causation of diabetes.

A satisfactory theory as to the genesis of pancreatic diabetes, however, cannot be propounded at this date. Two points, though, every hereto pertaining theory must consider: that is, the peculiar behavior of the glycogen of the liver, and especially the different destination of dextrorotatory and lævorotatory glucoses.

Minkowski says: "There are two assumptions which force themselves upon us as to this matter, although I cannot vouch definitely for either of them. First, the conversion of dextrose into glycogen is a necessity for the normal consumption of sugar. This conversion can occur only with the aid of the pancreas, which exerts a specific action either upon the dextrose itself or upon the cells of the liver or those of the muscles. It has to be further assumed that the formation of glyco-

[1] "Die Beziehungen des Diabetes zu Pankreaserkrankungen," Wiener med. Presse, 1892, No. 27–32.

[2] "Étude sur le Pancreas et sur le Diabète Pancreatique," Paris, 1891.

[3] "The Pancreas and Diabetes," a paper read before the Medical Society of Vienna. Reported in London Lancet, and republished in The Journal of the American Medical Association, vol. xix., No. 1, July 2, 1892.

[1] "Exstirpation du Pancreas, Diabète Sucre Expérimental," Arch. de Méd. Expérimentale, 1891, No. 1.

[2] "Le Diabete Pancreatique," Paris, 1892.

[3] v. Mering und Minkowski: "Diabetes mellitus nach Pankreasexstirpation," Archiv f. exp. Pathologie u. Pharm., Bd. xxvi., 1889. Minkowski: "Ueber die Folgen partieller Pankreasexstirpation," Centralblatt f. klin. Medicin, 1890, No. 5; "Weitere Mittheilungen über den Diabetes mellitus nach Exstirpation des Pankreas," Berl. klin. Wochenschrift, 1892, No 5; "Untersuchungen über die Diabetes mellitus nach Exstirpation des Pankreas," Leipzig, 1893.

gen from lævulose is brought about independently from any pancreatic influence. It is difficult to state how the latter could happen. The most simple explanation is the presupposition that glycogen can be manufactured only from lævulose, and that it is the duty of the pancreas to convert dextrose into lævulose. Such an assumption, however, is hardly admissible. Second, normally sugar is consumed directly as such. The aid of the pancreas, though, is essential to the normal consumption of dextrose. The formation of glycogen is not directly impaired after the extirpation of the pancreas. The disappearance of the glycogen in the liver is only the consequence of the inordinate consumption of sugar. Glycogen, whether manufactured from albuminous material or from ingested grape sugar, continues to be converted directly into dextrose, which accumulates in the blood and makes its appearance in the urine. Pancreatic assistance is not necessary for the consumption of lævulose. The latter, therefore, even after the removal of the pancreas, may be used to some extent. The supply of lævulose satisfies the demand for sugar in the organism. The oversupply of lævulose may be deposited as glycogen. If grape-sugar should result again from this glycogen, then it will be transmitted unaltered to the urine. The increase of grape-sugar elimination after the supply of lævulose is also explainable in this manner.

"The pancreatic function does not necessarily depend upon the production of a 'glycolytic' ferment. The pancreas could influence, somehow or other, those organs which normally consume sugar, setting free therein certain affinities that would attract the sugar molecule. It may be further conceivable, for instance, that the sugar normally circulates in a loosely bound combination which prevents the influence of the oxidizing processes upon it; and that it is the mission of the pancreas to split up this combination, thus furthering the normal oxidation of the sugar."

III. The Author's Observations.—It is evident that the artificial conditions produced in the normal organism for the purpose of experimental research do not effect in every respect an exact reproduction of that pathological state which the investigator seeks to procure. This is especially the case in artificial diabetes. Though it is the truth that we find the whole symptomatology of the second and third stage of diabetic deterioration in experimental pancreatic glycosuria, we must never forget that the latter is the result of the extirpation of the pancreas, and that this fact alone is certainly not analogous with the condition in true diabetes. I further maintain that observations and their consequent deductions, drawn from artificially created bases, are, if at all, only in part applicable to those conditions originating from naturaliy contracted bodily affections, and that the theories as to the genesis of a pathological statement, if based solely upon artificial experimental disease, prove to be often useless, inefficient, and at times even misleading.

Thus I have abandoned experiments with animals in all instances when a certain disease has first to be produced by artificial means, and when it is of greater importance to determine the causative factor or factors underlying the generative processes than to explain mere secondary phenomena or symptoms arising during the course of these processes.

The great divergency of opinion as to the causes of diabetes is undoubtedly the result of too much indiscriminate experimenting on animals. Salivary glands, duodenum,[1] thyroid gland,[2] and other morphological parts were removed from animals to find the cause of the glycosuric symptom.[3] The constant repeating of such experiments, "the re-proving," I deem entirely uncalled for. Moreover, I verily believe at this day that a glycosuria may follow the removal of any vital organ, provided the animal is capable of surviving a sufficient time.

The following observations—more or less experimental in character—were made on patients whose affection I recognized as diabetic deterioration.

In tabulating the history of these six cases I have abstained from enumerating all such incidents as are inessential to the following considerations. This pertains not only to other products of metabolism which occurred normally or abnormally in the urine and the fæces, but also to the duration of the different cases. It was my endeavor to bring forward only the most typical period of the second stage of diabetic

CASE I.

(G. G——, male, aged 27, American, unmarried, family history good. Deterioration first recognized March 20, 1895.)

Date.	Quantity of 24 Hours' Urine in c.c.	Specific Gravity.	Glucose in Per Cent.	Urea in Per Cent.	Nourishment.	Body Weight in kgm.	Quantity of 24 Hours' Fæces in gm.	Solid Residue of Fæces.	Urea in Per Cent.
April 17, 1895	3,080	1.062	8.4	2.9	Exclusively albuminous: egg albumin, per diem, 10 gm.; casein, milk albumin, 170 gm.; albumin derived from meat, 5 gm.; together, 185 gm. per diem.	66			
April 22, 1895	3,200	1.059	8.1	3.1					
April 24, 1895	3,010	1.059	8	3		65			
April 29, 1895	2,720	1.054	6.5	3.7		....	83	26	5.1
May 4, 1895	2,640	1.055	4	3.9	Non-nitrogenous matter greatly preponderating.	64.5			
May 7, 1895	2,850	1.056	3.8	5.1		64.5			
May 8, 1895	2,780	1.054	5.9	6		64.5			
May 9, 1895	1,930	1.05	3.9	6.1		64			
May 10, 1895	2,250	1.052	3.6	6.1		64	141	38	4
May 11, 1895	2,040	1.05	2.9	6		64			
May 18, 1895	1,850	1.054	3	3.8	No diet; fasting for 17 hours; H_2O in moderate quantity.	63.5	72	21.5	1.3
May 21, 1895	2,510	1.053	3.4	6	Exclusively albuminous; on the average as above.	64			
May 24, 1895	2,780	1.053	3.3	6.2					
May 29, 1895	2,190	1.051	3.1	5.7		63			
June 16, 1895	1,930	1.049	3.2	4	Albuminous as above.	61.5	95	28	4.1
July 21, 1895	1,620	1.044	3.5	4.2		60			

Patient was not seen by me since last year, when he left town.

[1] De Renzi and Reale (Verhandlungen des X. internationalen Med.-Congresses zu Berlin, 1890, Bd. ii., Abth. v., S. 97) experimentally removed the salivary glands and the duodenum from a number of dogs, and assume that a type of true diabetes would follow either operation.

[2] Falkenberg ("Zur Exstirpation der Schilddrüse," Verhandlungen des X. Congresses für innere Medicin, Wiesbaden, 1891, S. 502) believes he has observed a true and chronic diabetes after the extirpation of the thyroid gland.

[3] The experimenting with a number of drugs, whose administration may be followed by a glycosuric condition, naturally belongs thereto.

CASE II.

(A. D——, female, aged 36, American, married, no children; father and sister died after having been diabetic. Deterioration first recognized October 18, 1895.)

Date.	Quantity of 24 Hours' Urine in c.c.	Specific Gravity.	Glucose in Per Cent.	Urea in Per Cent.	Nourishment.	Body Weight in kgm.	Quantity of 24 Hours' Faeces in gm.	Solid Residue of Faeces.	Urea in Per Cent.
December 28, 1895	1,360	1.034	1.7	3.5		82.5			
December 29, 1895	1,400	1.033	1.5	3.5	Mixed diet		154	56	Not examined.
January 4, 1896	1,380	1.036	2.1	3.2		82.5	145	42.5	
January 6, 1896	1,560	1.034	2	3.2					
January 7, 1896	1,650	1.034	2	3.3			115	63	4.1
January 10, 1896	1,700	1.033	1.8	3.5		81	121	39	3
January 15, 1896	1,620	1.034	1.5	2.8					
January 19, 1896	1,870	1.032	1.4	2.3		82			
January 26, 1896	1,750	1.032	1	2.5	Exclusively albuminous: about 200 gm. of proteids daily.				
February 5, 1896	1,540	1.031	0.7	3.3					
February 19, 1896	1,610	1.030	0.4	2.1		80.5	111	51	5.3
March 15, 1896	1,460	1.030	0.2	2.4					
March 29, 1896	1,570	1.030	...	2.4		80			
April 15, 1896	1,480	1.030	0.2	2.7		78.5	78	49	4.5
May 12, 1896	1,600	1.032	0.5	2.9					
May 15, 1896	1,540	1.031	0.5	2.9		78	162	93.5	4.9
May 16, 1896	1,710	1.031	0.5	2.2	Non-nitrogenous	78	183	76.5	Not examined.
May 17, 1896	1,670	1.030	0.4	2.2		78			
May 18, 1896	1,520	1.030	0.3	2.4		77.5	224	98.5	Not examined.
July 10, 1896	1,630	1.031	0.3	2		78			
August 12, 1896	1,550	1.031	...	2.1		76			
September 19, 1896	1,440	1.032	0.2	2.5	Albuminous	77			
October 11, 1896	1,390	1.030	0.1	2.9		76.5			
December 15, 1896	1,420	1.031	0.1	3		76			

Status præsens: Patient is afflicted with secondary affections and is laid up, more or less; glycosuria and azoturia persistent, though the percentage of glucose and urea is rather small.

deterioration with its most typical chemical phenomena.

For obvious reasons I have not analyzed the fæces so frequently as the urine, but this must not be construed as if the patients were afflicted with obstipation in the intervals between the examinations.

Urea, biamide of carbonic acid, or—

Carbamide, H O H

$$H\text{-}N\text{-}C\text{-}N\text{-}H, \quad =CO(NH_2)_2$$

is one of the most simple amid bodies and the main product of the oxidation of nitrogenous substances in the system. It occurs in the urine generally in from 1.5 to 2.8 per cent.; in the blood, the fæces, the lymph, the perspiration, the crystalline lens, and the aqueous and vitreous humors of the eye normally in traces only.

It is the general opinion among physiologists and clinicians that the amount of carbamide excreted is dependent upon the quantity of nitrogenous material ingested. Lehmann,[1] experimenting on himself, found:

Kind of Nourishment.	Quantity of Urea Excreted per Diem.
Mixed	32.5 gm.
Animal	53.2 "
Vegetable	22.5 "
Non-nitrogenous	15.4 "

If no nourishment is taken, carbamide continues to

CASE III.

(B. M——, female, aged 30, German, married; had three children who have died; two years in this country. mother had diabetes. Deterioration first recognized September 17, 1896.)

Date.	Quantity of 24 Hours' Urine in c.c.	Specific Gravity.	Glucose in Per Cent.	Urea in Per Cent.	Nourishment.	Body Weight in kgm.	Quantity of 24 Hours' Faeces in gm.	Solid Residue of Faeces.	Urea in Per Cent.
October 10, 1896	4,620	1.036	5.5	2.7		66			
October 11, 1896	4,300	1.037	5.1	3.2	Exclusively albuminous: average 180 gm. of proteids daily.		96	47.5	3.1
October 12, 1896	3,860	1.036	5.7	3					
October 15, 1896	3,440	1.036	6	2.9		65	75	29	2.6
October 17, 1896	3,250	1.035	5.1	3.5					
October 25, 1896	2,800	1.032	3	3.7	Mixed diet: about 120 gm. albumin daily.	63.5			
November 6, 1896	2,350	1.030	1.7	3.8		63	141	41	5.5
November 20, 1896	2,100	1.031	2.3	4.2		62.5			
November 27, 1896	1,800	1.030	1.7	4	Carbohydrates prevailing about 70 gm. proteids daily.				
December 11, 1896	1,720	1.030	1.3	2.1		61	185	72.5	1.5
December 28, 1896	1,650	1.030	0.7	3.2		60.5			
January 16, 1897	1,800	1.032	2.6	4.1	Mixed diet about 120 gm. albumin daily.	59			
January 29, 1897	1,950	1.033	2.9	4		58	152	51.5	3.5
February 18, 1897	2,100	1.032	2.5	4.2		56			
March 15, 1897	2,180	1.031	2.1	4.1		54.5			
March 29, 1897	2,250	1.032	1.7	4					
April 12, 1897	1,700	1.031	1.1	3.8		53.5	92	40	2.9
April 26, 1897	1,930	1.033	2.7	4.2	Albuminous: 180 gm. albumin daily.	53			
May 8, 1897	2,050	1.032	2	4.1		53			
May 22, 1897	2,120	1.031	2	4.2		53.5			
June 20, 1897	2,080	1.034	3.8	4.1		54			

Patient died during my absence from the city in July, with the symptoms of general exhaustion. Comatose stage (if at all pronounced) only of very short duration.

[1] "Physiological Chemistry," London, 1853, vol. ii., p. 450.

CASE IV.

(B. L. F——, male, aged 25, American, single, family history good. Deterioration first recognized December 14, 1896.)

Date.	Quantity of 24 Hours' Urine in c.c.	Specific Gravity.	Glucose in Per Cent.	Urea in Per Cent.	Nourishment.	Body Weight in kgm.	Quantity of 24 Hours' Faeces in gm.	Solid Residue of Faeces.	Urea in Per Cent.
December 16, 1896	6,500	1.055	7.5	8.2		60			
December 17, 1886	5,350	1.057	–	8.1		60			
December 18, 1896	6,600	1.060	7.5	6.8	Albuminous: about 180 gm. daily	59.5			
December 19, 1896	4,870	1.060	8	7.5		59	165	44	None.
December 20, 1896	2,120	1.058	7.3	8	No diet; fasting; H_2O in small quantities.	58			
December 21, 1896	4,580	1.060	7.8	7.3	Albuminous: as above.				
December 22, 1896	5,400	1.045	6.3	7.7		57.5			
December 28, 1896	4,570	1.054	6.9	8.6	Carbohydrates: albumin about 50 gm.	57.5			
December 29, 1896	4,900	1.053	6.8	8.3		56.5	152	84	3.5
December 31, 1896	4,100	1.048	6.1	8.1					
January 3, 1897	4,450	1.055	7.2	7.6	Albuminous: about 190 gm. proteids per diem.				
January 4, 1897	5,360	1.057	6.5	8.1		56			
January 5, 1897	5,050	1.054	6.5	7.8	Mixed diet	57.5			
January 15, 1897	3,820	1.040	4.7	8	Fasting: H_2O small quantity	57	147	21	2.8
January 19, 1897	2,430	1.038	2.5	5.3		57.5			
February 5, 1897	2,900	1.039	3.7	4.5	Mixed diet	57.5	138	30	2.1
February 24, 1897	2,280	1.038	3.5	4.1		57			
March 16, 1897	1,950	1.039	4.1	3.7		56.5			
April 12, 1897	2,130	1.040	4.2	4.3					

Status præsens: Patient is at a European spa; the diabetic deterioration is progressing.

be excreted, though in lesser quantity, indicating that it is derived from another source than the direct decomposition of proteid ingesta. Thus carbamide is one of the products of retrograde metamorphosis of the plasmatic tissue constituents.

The excretion of carbamide becomes of pathological significance only when it occurs in diminished or excessive quantities. It indicates thus a disturbed metabolism, either retarded or increased plasmolysis. The quantity of excreted urea is proportionally small in diseases of the liver, in cachectic conditions, in different renal affections, and is diminished in fasting; its elimination is noticeably increased after muscular or mental strain, and in the febrile states, when it usually increases in proportion to the intensity of the fever. It is excreted in excess in diabetes mellitus, which phenomenon all observers ascribe to the great consumption of albuminous food.

It is very difficult, however, to determine with any degree of certainty what constitutes an abnormal production and excretion of carbamide. Moreover, the production of urea is not in every instance followed by its speedy or complete elimination; partial retention of some urea—by its reabsorption—is in my opinion much more frequent than is usually supposed. The ingested albuminates cannot serve as a basis for the exact determination of all the produced urea. We may determine the amount of nitrogen ingested, also possibly that which is excreted; the latter, however, by no means represents closely or accurately the nitrogen of the proteid nourishment. In all our calculations the retrograde tissue metamorphosis ought to be taken into due consideration, and, although a great many achievements and discoveries have been accomplished in other fields of scientific research, we have not succeeded as yet in determining that elementary point which is essential (as a basis) for the exact estimation of tissue waste.

CASE V.

(B. B——, male, aged 35, German, unmarried; father possibly was diabetic, though the son is not certain about this. Deterioration first recognized February 11, 1897.)

Date.	Quantity of 24 Hours' Urine in c.c.	Specific Gravity.	Glucose in Per Cent.	Urea in Per Cent.	Nourishment.	Body Weight in kgm.	Quantity of 24 Hours' Faeces in gm.	Solid Residue of Faeces.	Urea in Per Cent.
February 19, 1897	1,550	1.029	1.5	2.8		75.5			
February 20, 1897	1,710	1.030	1.7	2.9					
February 21, 1897	1,780	1.030	1.9	2.8	Albuminous: egg albumin, about 5 gm.; milk (casein, albumin), 100 gm.; cheese, casein, 15 gm.; meat, albumin, 60 gm.; together, 180 gm., daily average.				
February 22, 1897	1,750	1.031	2.1	3		75.5	110	63.5	5
February 23, 1897	1,860	1.031	2.1	2.7					
February 24, 1897	1,680	1.030	2	2.9					
February 25, 1897	1,630	1.030	2.1	2.7		75			
February 26, 1897	1,920	1.031	2.2	2.8					
February 27, 1897	2,100	1.031	2.2	2.8		74.5			
February 28, 1897	2,060	1.032	2.3	3					
March 1, 1897	1,640	1.031	2.1	3.1	Non-nitrogenous	74.5			
March 2, 1897	1,720	1.030	2	3			231	97	4.7
March 3, 1897	1,510	1.029	1.8	2.7					
March 4, 1897	1,600	1.029	1.7	2.9		74.5			
March 5, 1897	2,150	1.030	2	2.7					
March 6, 1897	1,980	1.030	1.9	2.7					
March 7, 1897	1,990	1.030	1.8	2.9		74			
March 8, 1897	1,830	1.029	1.8	2.7					
March 11, 1897	1,650	1.029	1	2.9	Albuminous: as above	73.5	123	78.5	6.9
March 16, 1897	1,780	1.028	0.7	3.4					
April 2, 1897	1,540	1.028	0.2	2.8					
April 16, 1897	1,570	1.028	0.1	2.7		73.5			

Status præsens: Patient attends to his business; is emaciated and very irritable; glycosuric stage persistent; glucose in varying amounts; nitrogen rather steady.

As a matter of convenience only, we may define the diminished excretion of urea as the retention of ingested nitrogen[1]—that is, more nitrogen is introduced into the system than is eliminated, and we may define the excessive excretion of carbamide as an increased plasmolysis of the living tissues—that is, a much greater amount of nitrogen passes out of the system than has been ingested.

I now draw your attention to the tables.

Case I.—From April 17, 1895, to April 29, 1895, the patient was under strict albuminous diet. The daily average of ingested albuminates I calculated as 185 gm. The nitrogen contained in albumin is 15.6 per cent; the ingested nitrogen therefore amounted to 28.86 gm. daily. The average daily quantity of voided urine during this period amounted to 3,002 c.c. The average daily quantity of urea excreted by the urine amounted to 3.2 per cent.; that is, 96.1 gm. The amount of urea in the fæces on April 29th was 1.3 gm., that is the total excretion of 97.4 gm. of urea in twenty-four hours.

Urea contains 46.73 per cent. of nitrogen. The total of N excreted during twenty-four hours amounted therefore to 45.51 gm.

Consequently 16.65 gm. of N more was excreted than ingested.

From May 4 to May 11, 1895, the patient was under a diet greatly abundant in non-nitrogenous material. He voided during that time on the average, 2,415 c.c. of urine *per diem*, containing in the mean 5.5 per cent. of urea, which is 132.82 gm. Examination of fæces on May 10th revealed the presence of 4 per cent. of urea, or 1.52 gm. Under the influence of non-nitrogenous nourishment he therefore excreted on the average, 134.34 gm. of urea daily; that is, 62.78 of N.

On May 18, 1895, for investigation as well as for therapeutic purposes, I kept the patient fasting for seventeen hours, allowing him only a moderate amount of water during that time. He voided in twenty-four hours (counting from the start of the non-ingestion until about seven hours afterward) 1,850 c.c. of urine, containing 3.8 per cent. of urea; that is, 70.3 gm. During that period the solid residue of his fæces amounted to 21.5 gm. and contained 1.3 per cent. of urea, or 0.3 gm. Within the time of fasting and the seven following hours, the patient therefore excreted 70.6 gm. of urea, which equals 33 gm. of N.

Case II.—From December 28, 1895, to January 4, 1896, the patient lived on mixed food. The amount of proteid matter therein contained was not ascertained by me. In this time she voided 1,380 c.c. of urine on the average daily. The percentage of urea in the mean therein contained was 3.4 per cent., or 45.92 gm., indicating 21.45 gm. of excreted N.

From January 6, 1896, to April 13, 1896, the patient's nutriment was exclusively albuminous, consisting of about 200 gm. of proteid matter on the average daily. That is 31.02 gm. of ingested N.

CASE VI.

(T. K——, female, aged 37, American, married, six children alive; no diabetes in family. Deterioration first recognized July 16, 1897.)

Date.	Quantity of 24 Hours' Urine in c.c.	Specific Gravity.	Glucose in Per Cent.	Urea in Per Cent.	Nourishment.	Body Weight in Kgm.	Quantity of 24 Hours' Fæces in gm.	Solid Residue of Fæces	Urea in Per Cent.
August 2, 1897	1,930	1.045	4.6	3.2	Mixed diet: about 50 gm. proteids daily.	70			
August 3, 1897	1,850	1.046	4.8	3.5					
August 4, 1897	2,130	1.046	4.9	3.5					
August 5, 1897	2,360	1.045	4.8	3.3	4 litres of cow's milk: casein and albumin about 175 gm.				
August 6, 1897	2,600	1.043	4	3.5	5 litres of milk = 215 gm. albuminoids	70	148	42.5	4.6
August 7, 1897	2,530	1.043	3.7	4.5	5.5 litres of cow's milk = 237 gm. albumin.				
August 8, 1897	2,940	1.042	3.8	3.1					
August 9, 1897	2,810	1.042	3.7	3					
August 10, 1897	2,740	1.041	3	2.4	4 litres of cow's milk = 175 gm. albumin	71.5			
August 14, 1897	2,120	1.042	2.7	2.7	Mixed diet		186	53.5	5.5
August 16, 1897	1,980	1.040	2.5	2.8		70.5			
August 21, 1897	1,840	1.040	2.6	2.3			222	101.5	3.1
August 22, 1897	1,800	1.039	2.4	2.2	Carbohydrates, also hydrocarbons: vegetable albumin, about 20 gm. daily average.				
August 23, 1897	1,850	1.039	2.3	2.2					
August 24, 1897	1,760	1.040	2.4	2.2			172	87	3.5
August 26, 1897	1,600	1.038	2.3	2		69.5			
August 31, 1897	1,530	1.039	2.4	2.1					
September 3, 1897	2,650	1.041	3.1	2.1	3.5 litres of milk = about 150 gm. albumin and casein.				
September 4, 1897	2,800	1.042	3.3	2.2	4 litres of milk = about 175 gm.				
September 5, 1897	2,760	1.042	3.3	2.1	4.5 litres of milk = about 200 gm. albumin and casein.		138	61.5	4.1

Status præsens: Patient is emaciated and easily exhaustible, otherwise quite comfortable.

The average of the daily voided urine in this period was 1,617 c.c., with 2.8 per cent. or 45.27 gm. of urea. The fæces were examined four times within this time, and their solid residue averaged 48 gm. for twenty-four hours, with 4.2 per cent. or 2.01 gm. of urea. The average of urea excreted by urine and fæces *per diem* was therefore 47.28 gm., containing 22.09 gm. of N. In other words, there was 8.93 gm. of N. less on the average excreted *per diem* by these channels than had been introduced by the nutriment.

From May 12, 1896, to May 18, 1896, the patient lived on non-nitrogenous food. The average of the daily secretion of urine was then 1,608 c.c., with 2.5 per cent. or 40.2 gm. of urea. The fæces were examined for urea thrice in this period, and weighed when completely dehydrated 89 gm. daily on the average. They contained in the mean 4.9 per cent. or 4.4 gm. of urea. Together, therefore, 44.6 gm. of urea was daily eliminated on the average at this time, representing 20.8 gm. of N.

Case III.—From the date diabetic deterioration was first recognized until October 15, 1896, the patient was under strictly albuminous diet. The consumption of proteid food averaged daily about 180 gm., which represents 28.08 gm. of N.

During that time the average daily secretion of urine amounted to 4,055 c.c., with 2.9 per cent. or 117.59 gm. of urea. The solid residue of the fæces was 38 gm., with 7.3 per cent. or 2.77 gm. of urea. The

[1] This definition naturally presupposes the usual food supply.

120.36 gm. of urea thus excreted represented 56.24 gm. of N. Consequently 28.16 gm. of N less was ingested than excreted.

From October 17, 1896, to November 6, 1896, the patient lived on a mixed diet, that is, about 120 gm. of albumin, representing 1,872 gm. of N, was ingested *per diem.*

The urine on the average was excreted to the amount of 2,800 c.c. in twenty-four hours, containing 3.6 per cent. or 100.8 gm. of urea.

The solid residue of the fæces on November 6th amounted to 41 gm., and contained 5.5 per cent. or 2.3 gm. of urea. Taking this as the average, 103.1 gm. of urea was excreted daily. Thus 48.18 gm. of N left the body by urine and fæces, while only 18.72 gm. of N had been introduced by nutriment, leaving therefore a N deficit in the sytem of 29.46 gm.

From November 20 to December 28, 1896, on account of an albuminuria which had since developed, carbohydrates were prevailing in the patient's food. The amount of albuminates and albuminoids in the nutriment averaged about 70 gm. daily, and contained 10.92 gm. of N.

The quantity of urine voided during that epoch was on the daily average 1,817 c.c., and contained in the mean 3.4 per cent. or 61.78 gm. of urea. The residual fæces on December 11th amounted to 72.5 gm., and contained 1.5 per cent. or 1.09 gm. of urea. Together on the average, 62.87 gm. of urea, holding 29.45 gm. of N, was daily excreted. This means a daily N deficit of 18.53 gm. for this period.

Case IV.—From December 16, 1896, to December 19, 1896, the patient was under an exclusive albuminous diet, 180 gm. of albumin in milk, eggs, and meat being about the daily average. Thus the ingested N amounted to 28.08 gm. *per diem.*

The urine voided during these four days averaged 5,830 c.c. daily, and contained 7.6 per cent. or 443.8 gm. of carbamide. This means the excretion of 207.05 gm. of N, or of 178.97 gm. more than was taken with the food.

On December 20, 1896, I kept the patient fasting. This was done for therapeutic purposes, according to Naunyn's and von Mering's suggestions. The urine voided for the whole twenty-four hours (the fasting did not quite last all that time) amounted to 2,120 c.c., with 8 per cent. or 169.6 gm. of urea. This represents 79.25 gm. of excreted N, while practically there was none ingested.

From December 28 to December 31, 1896, I had the patient under food of a pronounced carbohydrate nature. The proteids which were thus ingested amounted to about 50 gm. daily, and contained 7.8 gm. of N.

The urine passed during this period averaged 4,590 gm. daily, with 8.2 per cent. or 376.38 gm. of urea. The fæces, which I examined for glucose and carbamide on December 31st, weighed when completely dehydrated 84 gm., and held 3.5 per cent. or 2.94 gm. of urea. The total amount of urea therefore averaged 379.32 gm. daily, and 177.26 gm. of N was therein contained. Consequently 169.46 gm. of N more was excreted than ingested at an average daily for this period.

From January 3 to January 5, 1897, the patient was again under an albuminous diet, and consumed about 190 gm. of proteid material daily, which contained 29.6 gm. of N.

The quantity of urine voided amounted in the mean to 5,100 c.c., and held 7.8 per cent. or 397.8 gm. of urea. The latter represents 185.9 gm. of excreted N, 156.3 gm. more than was introduced with the nourishment.

Case V.—Until February 25, 1897, the patient was under a totally albuminous diet, that is, about 180 gm. of different albuminates and albuminoids was daily ingested; 180 gm. of albumin represents 28. 08 gm. of N.

The daily average of urine passed amounted to 1,708 c.c., with 2.8 per cent. or 47.82 gm. of urea. The fæces when examined on February 22d weighed 63.5 gm. in their dry state, and contained just 5 per cent. or 3.77 gm. of urea. Taking the latter as an average, the total daily excretion of urea amounted to 51.59 gm., representing 24.11 gm. of N. This indicates that 3.97 gm. of N more was ingested than was eliminated by the kidneys and bowels.

From February 26 to March 4, 1897, for a period of one week, the patient lived upon non-nitrogenous nutriment. (I would like to add that the patient, a highly intelligent and educated gentleman, readily consented to take an absolutely carbohydrate nourishment with the least possible quantity of hydrocarbons, if it were for diagnostic and experimental purposes.)

The urine voided during the twenty-four hours averaged 1,793 c.c., and contained 2.9 per cent. or 52 gm. of urea.

The fæces, when analyzed on March 2d, in their residual condition, amounted to 97 gm., and contained 4.07 per cent. or 4.57 gm. of urea. Taking the latter as an average of the quantity of the stools, we have 56.57 gm. of daily urea elimination; that is, 26.44 gm. of N. From March 5 to April 16, 1897, and thereafter, the patient was under an albuminous diet again, ingesting about 180 gm. of albumin or 28.08 gm. of N.

The daily average amount of urine was 1,805 c.c., with 2.8 per cent. or 50.54 gm. of urea. The dried fæces on March 11th weighed 78.5 gm., and contained 6.9 per cent. or 5.42 gm. of urea. Taking the latter again as the average quantity of the stools, we have a daily average excretion of 55.96 gm. of urea, or of 26.15 gm. of N, 1.93 gm. less than was ingested.

Case VI.—Until August 4, 1897, the patient was under a mixed diet which contained about 50 gm. of albumin daily. This amount of albumin represents 7.8 gm. of N.

The urine during this period was excreted to the average amount of 1,970 c.c. daily, with 3.4 per cent. or 67 gm. of urea, which latter contains 31.31 gm. of N—this means a N deficit of 23.51 gm. On August 6, 1897, the patient took as nutriment five litres of cow's milk, containing about 215 gm. of casein and albuminates. This proteid matter represents 33.54 gm. of N.

The quantity of urine on that day was 2,600 c.c., and 3.5 per cent. or 91 gm. of urea was held therein. The solid residual fæces amounted to 42.5 gm., and contained 4.6 per cent. or 1.96 gm. of urea. Together 92.96 gm. of urea, or 43.44 gm. of N, was excreted that day; that is, 9.90 gm. of N more was eliminated than was introduced by nourishment.

From August 21st to the end of that month, carbohydrates and hydrocarbons served as nutriment of the patient. The approximate amount of vegetable albumin contained in the food I figured at 20 gm. daily; that is, 3.1 gm. of N.

The average amount of urine voided *per diem* was 1,730 c.c., with 2.2 per cent. or 38.1 gm. of urea. The residual fæces of August 22d and 26th, amounting in the mean to 94 gm., contained 3.3 per cent. or 3.1 gm. of urea; therefore the daily average of excreted urea amounted to 41.2 gm. of urea or 19.25 gm. of N. Thus we had here an excess of 16.15 gm. of N over the amount of N ingested.

A study of the cited cases will demonstrate:

1. That diabetic glycosuria *per se* is not directly dependent upon alimentation.

2. That the ingested carbohydrates do not influence the diabetic condition—to that extent—as generally supposed.

3. That diabetic azoturia is a distinctive phenomenon during the glycosuric stage of diabetic deterioration.

4. That diabetic azoturia is not a direct result of hyperingestion of albuminous materials.

5. That the amount of nitrogen excreted during the second stage of diabetic deterioration nearly always exceeds that of the nitrogen introduced with the nutriment.

Von Noorden,[1] the latest exponent of diabetes mellitus, alluding to his own observations as well as to those of Lusk, F. Voit, Hirschfeld, and Weintraut, still maintains that the waste of nitrogen is the greater the more the food value is depreciated by glycosuria, that this waste is very large as long as the diabetic is allowed to ingest the carbohydrates which are useless to him, and that it diminishes or discontinues when the nourishment consists to the greater part of proteids and fats.

"I am strongly inclined," says von Noorden, "to define the disease as follows: By the term diabetes mellitus is understood a disease in which the capacity of the organism for burning up grape sugar is morbidly depressed. We shall, indeed, see that all the phenomena of diabetes may, without compulsion, be explained by this formula, yet I hesitate to place the definition at the head of this treatise, for the reason that we have as yet no certain evidence that it exhaustively explains the condition actually present."

Von Noorden considers diabetes mellitus still as a disease *per se*, and caused by a disturbed chemismus, particularly of the glycolytic power of the organism, and, though this observer differentiates minutely between glycosuria and diabetes proper, he has not as yet recognized the diabetic deterioration.

IV. Deductions.—Albuminous substances are of a highly complex structure, and the position of their molecules is easily disturbed. Even the slightest influence may cause an alteration in the latters' position, and thus plasmatic bodies are readily changeable or decomposed. There are numerous and varying phases in the process of decomposition of albumin. Some phases will recur often and are deemed normal; others will not recur regularly, and we may consider such phases abnormal.

There is no doubt that the decomposition of albumin under certain conditions will give rise to the formation of dextrose. In glycogen-free animals there will occur a new production of glycogen, if they are subjected even to none but nitrogenous food. Some of the C-H-O molecules of albumin may combine themselves to form a carbohydrate body[2] or a series of similar compounds before their final and ultimate conversion in CO_2 and H_2O, in which form they leave the organism. The N molecule of the decomposing albumin will remain attached to some of the original C-H-O atoms, and may give rise to the simultaneous or alternate formation of a variety of non-colloid nitrogenous substances, as, for instance, amido-caproic acid (leucin), $C_9H_{10}(NH_2)O.OH$; tyrosin, $C_9H_{11}NO_3$; carbamide, $CO(NH_2)_2$, and many others. The ultimate disposal of the N molecule occurs in the form of ammonia. It is, moreover, not improbable that a part of the N molecule of albumin, without undergoing the different processes of transformation, is at once converted into ammonia.

If the formation of a glucose-resembling carbohydrate from the ingested proteids is a definite fact, then I see no reason why the protoplasm of the living organism—under appropriate conditions—should not also be dextrose-generic.

It may be assumed that the molecules of the tissue proteids—when subjected to certain influences—are capable of altering their respective positions in a similar manner as do those of ingested albumins. That is, plasmolysis of the living tissues may occur, normally or abnormally, under the formation of a glucose-like substance. The generation of dextrose by the living protoplasm is not necessarily followed by the latter's spontaneous and complete dissolution. It may regenerate if its production of glucose is a normal process, or it may persist for some time—minus the molecules of the generated carbohydrate—if the process is an abnormal one. In the latter instance, however, there is then no protoplasm as such any more, and it is only a question of time until its ultimate destruction.[1]

The healthy organism by plasmolysis may generate a dextrose-resembling carbohydrate normally, which in turn may undergo a series of conversions until its ultimate disposal as CO_2. One of these intermediate steps may be the formation of glycogen. In the diabetic condition the production of this amylaceous substance from dextrose may be decreased or totally suspended. The direct consequence of this would be diminished or no formation of fat, emaciation, and, if the dextrose has not undergone other alterations, hyperglykæmia and appearance of the glucose in the excretions. The accompanying azoturia may be accounted for by an increased plasmolysis.

The generation of dextrose by plasmolysis is, however, in all probability an abnormal process. In that case the plasmolysis is a catabolic process whereby the plasmatic substance cannot regenerate, and becomes disintegrated. This dissimilation of the living protoplasm occurs more in the character of a deterioration; that is, the protoplasm to all appearances may continue to exist, although it has lost its molecular integrity.

This plasmolytic dextrose-generic process I designate as diabetic deterioration.

In other words, diabetic deterioration is a more or less limited molecular disintegration of plasmatic tissue substance into a glucose-like body and a non-colloid nitrogenous compound.

Diabetic deterioration is always a systemic and general affection. The transitory form of so-called diabetes, the glycosurias of diverse origin—even experimental pancreatic diabetes—is in the first instance always the result of local disturbances. It is true, the causative factor of the deterioration may exert its influence upon the organism through only one channel, but it will not affect one organ more than another, and all the protoplasm will lose its molecular integrity.

I classify among diabetic deterioration, irrespectively of the percentage of dextrose present, all those chronic cases of glycosuria in which the excretion of the urea, the carrier of part of the N molecules of the tissues, continues to be permanently in excess; that is, when the amount of excreted N constantly, during a certain period, exceeds the quantity of that which has been ingested with the nourishment.

In order, therefore, to recognize diabetic deteriora-

[1] "Die Zuckerkrankheit und ihre Behandlung." Berlin, 1895; translation of the same as "Diabetes Mellitus," "Twentieth Century Practice," vol. ii., New York, 1895.

[2] Minkowski ("Untersuchungen über den Diabetes mellitus," Leipsic, 1893) maintains that a hundred grams of albumin split up in the body produce at least forty-five grams of carbohydrates.

[1] Physiological chemistry is limited by natural boundaries. The innermost vital reactions and processes can only be anticipated but never positively ascertained. Interference with the organism for investigating-purposes causes spontaneous alteration of the tissue molecules, and that which we happen to examine scrutinously is a different thing from that which it was in the system. Thus we know nothing definitely about plasmatic substances in a chemical respect. What we may examine is not the protoplasm any more; it has been protoplasm. As we do not know anything about the intrinsic changes in living protoplasm, it stands to reason that we cannot account for many diseases. This is particularly true of diabetes, in which, with exception of eventual secondary changes, nothing is perceivable, neither during life nor in necroscopies.

tion definitely, the patient ought to be kept under rigid observation for some time. His food should always be weighed and the percentage of its nutritive constituents approximately ascertained. This has to be done especially with its proteid matter. The excretions must be carefully measured or weighed, and the urine examined for glucose. Following this, an exact determination of the carbamide contained in urine and fæces should be undertaken and its contents of N calculated. Finally the amount of excreted N should be compared with that introduced by the food. There are very likely other substances besides glucose and urea, as the result of a dextrose-generic plasmolysis, to be met with in the excretions, but I have not made any observations in this respect as yet.

The later stages of development of an individual and the following decade, seem to me to be that period during which dextrose-generic plasmolysis mostly occurs. Thus diabetic deterioration may be described as an affection following individual development.

The underlying causes of the disintegration of protoplasm and its resulting production of glucose and carbamide seem to be a part of a probable inherent quality of the protoplasm, of a purely physico-chemical nature. Whatever they may be, this much I can say with certainty, that digestive disturbances are never the main factors of diabetic deterioration.

My arguments are to some extent based necessarily upon hypothesis. But is not hypothesis the instigator to scientific research? Has it not been the foundation for the establishment of many an invincible truth?

1238 Lexington Avenue.

IS NOT THE MORTALITY FROM SURGICAL DISEASE LARGER THAN NECESSARY?[1]

By CHARLES McBURNEY, M.D.,

New York

With anæsthesia, asepsis, and greatly enlarged and improved operative surgery, the immediate danger to life from surgical interference has very greatly diminished, so that increased confidence has become established in the minds of surgeons, physicians, and patients that few cases of surgical disease can reach such an advanced stage as entirely to preclude the possibility of relief by operation. And it is true that many conditions which formerly were necessarily fatal because they were considered to be beyond the reach of surgery are now safely operated upon, and more or less completely relieved.

Even partial success in these desperate cases is a very proper source of pride to the surgeon, and each one stimulates him to still greater effort to save those who are nearly moribund. The more desperate the condition and the greater the risk, the more intense his interest, provided the possibility of success by care and skill exists. This feeling is to a certain extent shared by the physician, who now, much more frequently than in former times, calls upon the surgeon for aid, even in very desperate conditions. In this way every surgeon becomes familiar with cases for which he can do little or nothing, because the disease has already gone too far.

During the last few years I have been especially struck with the rapidity with which many cases of surgical disease advance from a condition that is entirely curable to one that is entirely incurable, or from one that can be completely and radically treated to one that can be only partially relieved. Probably almost all surgical cases have their time limit, before which with proper treatment complete recovery can be assured, and after which, at least with our present resources, no efforts can be entirely successful. Exactly what this time limit is in each individual case we do not accurately know, but that there is such a limitation which is well worth our constant thought and study I am firmly convinced. Take, for instance, a case of strangulated hernia. Is there not undoubtedly a moment up to which the possibility, after relief of the strangulation, of a return of circulation in the involved gut still exists, and a moment immediately following when such complete re-establishment of the blood current becomes impossible? Or, in a case of progressive septic peritonitis, is there not a sharp limit to the time within which the removal of the primary source of the sepsis and of its local products is capable of putting an end to the disease? And does not after this limit immediately begin a period when such a condition of general sepsis is established as entirely precludes the possibility of recovery? Or in a case of carcinoma of the breast is there not a brief period during which the disease is absolutely local and so open to radical cure, and immediately after this a period when invasion of lymphatic vessels renders operative work only palliative? As further instances I would enumerate carcinomata and sarcomata in many different parts of the body, cases of bowel obstruction due to whatever cause, all wound infections, and especially suppurative diseases involving or threatening to involve the peritoneum. All of these diseases, with certain rare exceptions, when old age or complications of various kinds render surgical treatment inadmissible, are at the proper time susceptible of complete and radical cure. In other words, there actually is a time limit before which death can be averted, and after which death is, immediately or remotely, inevitable.

The question that I would raise is: Do we to-day, with all our eagerness to improve the results of our surgical work, devote nearly enough attention to the limit of time when perfect surgery is possible?

Even leaving out the question of life and death, what shall we say in regard to the extension of disease from one tissue to another, calling at a late period for a much more extensive or mutilating operation than would have been required but a very short time before?

What an enormous difference between a case of strangulated hernia operated on at a time when a complete operation can be done and the hernia radically cured, and a case operated on at a later stage, when gangrene of the gut has occurred, calling for resection of the intestine, followed by intestinal anastomosis or a permanent artificial anus! Compare two cases of appendicitis, one operated on in the period of quiescence after the first attack, and the other operated on during the second attack, when suppurative peritonitis renders a wide-open wound necessary and a large bulging hernia naturally follows. Besides these more marked instances, many others could be given in which the transition from simplicity to complication is less clearly defined. To-day a diseased joint may be safely treated by resection; in a week amputation will be necessary to save life. In the case that I presented to-night, there was a prolonged period when simple extirpation of the tonsil would have been sufficient. When the patient came under my care, the disease had extended so far on to the lower jaw that it was necessary to sacrifice the whole of the ramus. The probability of inoperable recurrence of disease in this case is much greater than it would have been had the operation been done two or three months earlier.

It is clear, of course, that the mortality from surgical disease would be very much diminished if all cases could be subjected to treatment before the time limiting the possibility of perfect cure had been passed. The responsibility for not allowing this limit to be

[1] Paper read before the Practitioners' Society on Friday, November 5, 1897.

passed is then very great, and deserves the fullest appreciation. That in many cases the limit cannot at present be accurately defined is undoubtedly true, and that it will even be thoroughly understood in all cases is not probable. It is easy enough, however, to appreciate the initial stages of many surgical diseases, and knowledge of their natural history should enable a moderately careful professional observer roughly to anticipate the limit before which treatment may be safe and perfect. A natural comment on these observations might be made, that they are trite enough, and that every one knows that, as a rule, the earlier in any surgical disease proper treatment is begun, the more secure will be a completely favorable result.

The point that I wish especially to make is that the sense of responsibility in selecting the time for surgical interference is in many instances not sufficiently acute, and that delay, in some cases of a few hours, in others of days, and in others of weeks, actually directly leads to partial or complete failure, or even to death itself. It is not always easy to decide upon whom this important responsibility rests. Sometimes the surgeon himself is at fault; sometimes, and not infrequently, the responsibility for fatal delay belongs to the medical practitioner who first has charge of the patient; sometimes the division of responsibility among too many persons leads to the unfortunate result; and often enough no one is to blame but the timid patient and his ill-advising friends. I cannot but believe that many of the obstacles to complete surgical success could be removed, and the mortality from surgical disease largely reduced, if the grave importance of selecting the early stages of disease for surgical interference was more clearly realized. Failure to select the most favorable opportunity for surgical interference is responsible for a very large part of the mortality following surgical disease.

MIDWIFERY AND MIDWIFE.[1]

By C. A. VON RAMDOHR, M.D.,

PROFESSOR OF OBSTETRICS, NEW YORK POST-GRADUATE MEDICAL SCHOOL; GYNÆCOLOGIST TO ST. MARK'S HOSPITAL AND GERMAN POLIKLINIK; MEMBER OF THE NEW YORK STATE MEDICAL SOCIETY, NEW YORK COUNTY MEDICAL SOCIETY, ETC.

MR. PRESIDENT AND GENTLEMEN: The subject of my paper, *i.e*, the undesirability of having midwives in New York State under such conditions as at present exist, has lately been brought home to me so forcibly again and again, and has recently been touched upon so frequently in medical societies that I have ventured once more to try to interest your honorable society in the highest therapeutics for this malady, viz., prevention of the disease.

A confinement, as we are all supposed to know, is a perfectly physiological procedure which nature ordinarily can and will take care of. An Indian woman on the march will give birth to a child, wash in the river, and be able to catch up with the tribe, which has left her behind alone to attend to her function. The Esquimaux, when a woman gets in labor, give her provisions for three days and close the door of the ice-built cabin with a big slab of ice. If after three days the wail of an infant is heard, the happy mother and child are liberated. If not, the door is not opened again. We civilized people, however, have become so accustomed to assistance being given our women when child bearing, that our newspapers report a case in which such an event has taken place without attendance, be that on the street or in some public conveyance; and yet they forget to report that usually no bad consequences result to mother or offspring.

[1] Read before the Society of Medical Jurisprudence at its one hundred and twenty-ninth regular meeting, November 8, 1897, at 17 West Forty-third Street.

The dangers of child bearing with us lie in infection firstly, and meddlesomeness secondly. It has been proved time and time again that if the conscientious accoucheur holds it his duty to be simply to see that no complications are present, or likely to arise, and simply to watch nature, he will be much preferable to some charlatan who pretends to an overcredulous public that he can supersede her. That each and every person who comes in contact with the patient is perfectly clean and does not introduce infection, sepsis, blood poisoning—call it what you will—ought to be perfectly understood, but unhappily cases which we know can and ought to be prevented prove that even the medical profession is sometimes too lax in disciplining itself in such a vital matter. Sepsis is practically an unknown disease in lying-in institutions at the present time, but examine the records of death among the poorer classes, just such as are attended primarily by midwives, and you will find them appalling, even while complacent medical men occasionally seem not to be able to write the word sepsis on their death certificates.

Now, let us see why we have to deal with midwives at all. From ancient times on, some women have preferred, and during some periods have been obliged to rely upon the ministrations of their own sex during this critical time. Women like Mme. Siegmund and Mme. Lachapelle have left their mark in the history of obstetrics and given lustre to the highly respectable calling of a midwife in the best sense of the word.

In continental countries such a calling is an essential factor in districts where distance or paucity of medical men make it impossible for them to officiate in all cases. In our country, and especially in our large cities, and again chiefly in this cosmopolis, New York, this institution has remained as a relic of the past, a bond of former home life; or the employment of midwives is propagated on account of financial reasons, for —and now comes one of the sources of dangers to the community—the midwife does not only for a paltry sum minister to the woman during her confinement, but comes for nine more days to wash and clean mother and child and attend to any other household duties which her good nature or her business interest seem to make commendable. That this woman in the best of cases can hardly keep her person and clothes in perfect sanitary order under such circumstances can be understood; that occasion frequently arises when medical advice is asked during those nine days, ay! and later, too, and given with a right good will is no secret. That women apply for fœticide most frequently to those persons who have confined them is a fact.

Let us now see from what material in the older countries midwives are selected and how they are drilled. For all practical purposes their training and duties are the same in all European States. A married woman wants to eke out the scanty wages of her husband, or a widow applies with a certificate of good character to the county physician, with whom she is probably acquainted, and after a good deal of red tape is admitted into one of those lying-in asylums which the government maintains for the delivery of poor women and the training of midwives. Here for six months or a year she is taught, not how to perform obstetrical operations, but first to wash and brush her hands, to keep herself tidy, to be subject always to the orders of a physician, never to prescribe, never to interfere, but to call assistance in such given cases as need be. Now at the same time she is taught in a popular way, theoretically as well as practically, the physiology of labor and her own duties to mother and child during that time, and what she has to do to the reconvalescent woman. She is always under the supervision of people trained to teach just such novices. She is never left unwatched; time and time again her hands are

examined as to their absolute cleanliness; again and again it is dinned into her ears that she can prevent disease, if she be only clean. After a six-months' or a year's sojourn in the institute, if she has passed an examination held by a different board, she swears an oath to attend her duties as prescribed, and may commence to practise. But during all her lifetime she is still under supervision. At certain times her carefully prescribed armamentarium is inspected. In cases of neglect she is quickly prosecuted. If cases of fever occur in her practice with any frequency, or cases are not reported properly, or, in fact, any of the numerous commands laid upon her in the interest of the community are violated, she has her license taken away a great deal faster than she has received it.

It will interest you to illustrate the minuteness with which the State tries to protect its mothers in Austria. For example, to give you a few samples from a criticism by Dr. I. Fischer of the "New Regulations for Midwives," published in the *Wiener medizinische Presse*, October 3, 1897: "It is the chief merit of the rules that midwives are reminded not to make too frequent vaginal examinations." Criticism: "Why are they not told that one or two are sufficient?"

"Washing and scrubbing of hands and forearms must last three minutes, then thorough cleaning of nails is in order, followed by a three-minutes' disinfection in carbolic-acid solution, as mentioned in the older rules, or in a two-per-cent. lysol or a one-per-cent. cresol solution." Criticism: "Why is it not ordered that these three minutes are to be controlled by a clock, or why is not the midwife ordered to have an hourglass with her, as she is in Germany?"

"We are glad that a midwife dares not practise while she is nursing an infected patient, until she brings a certificate from the attending physician that she is not likely to infect the new patient." Criticism: "But why is she not recommended, whenever possible, not to nurse such patient? . . . We also miss an order of non-attendance when her fingers are not in sound condition, as from a felon, a runaround, etc. . . . We admire the paragraph on ordering the temperature to be taken daily, and their being obliged to call in a physician whenever it surpasses 38° C. (100.4° F.). Lastly we are heartily in favor of the yearly control and post-graduate examination which has been ordered."

Now let us consider how New York treats her women citizens. The State as such does not take cognizance of midwives at all in its general laws, but only through special acts, and this only in very recent years.

Besides two or three similar acts, which I think include the cities of Syracuse and Buffalo, the most recent one became a law May 31, 1895, and, contained in chapter 842, laws of the State of New York of 1895, is called "An act regulating and restraining the practice of midwifery in the city of Rochester by others than legally authorized physicians."

Section 1 empowers the mayor to establish a board for the examination, licensing, and registering of midwives, consisting of three members, two of whom shall be physicians of at least five years' practice, and the third to be the health officer *ex officio;* to give them a compensation of $10 a day for time of sittings; and makes the duration of office three years.

Section 2 treats of organization.

Section 3 orders the board to hold at least one meeting each half-year, to charge $10 for each examination and certificate, which is to be recorded, and gives the money thus collected to the city treasury.

Section 4 treats of the limitations as to the power of midwives, forbids obstetrical operations, the administration of poisonous drugs, and treatment of disease except in emergency cases, and then orders a speedy call for a physician.

Section 5 gives the mayor the power to revoke certificate and license on recommendation of the board, which has first to have granted a hearing to the accused woman.

Section 6 makes the crime of a person practising contrary to this law a misdemeanor punishable by a fine of not less than $50 and not more than $100.

New York City has not even such special laws. Here any woman who brings a certificate signed by two registered physicans, to the effect that she is of moral character and therefore probably capable of ministering to a woman during childbirth, is thereby *eo ipso* a midwife, is permitted to register, and her certificates of birth or stillbirth are accepted by the board of health. Whether her training has lasted two days or two years, whether she has retained or ever possessed the first essential of a successful midwife—that is, keeping her person tidy and having her hands at the time in such an aseptic state as to vie with those of a surgeon about to perform a laparotomy—are ignored. Whether she owns her kit of proper or improper instruments is not examined into. No supervision after registration is at present possible or attempted, for whenever one of her patients falls sick, usually through her incompetency, some one, or one of these two licensed practitioners, is available to be called in, and the woman's death certificate is made out according to law, or the patient may recover.

Attempts at a change, which we all, I am sure, will admit, is desirable, have been made, but without success so far.

Midwives themselves will not help us, for reasons best known to themselves. American-born women do not take kindly to a calling which has no standing, while professional nursing gives them a much more honorable and lucrative position in life. There remain those foreign women who have had European training, most of which they have forgotten or misapply, or those graduated from so-called or miscalled American schools of midwifery. These institutes are private affairs, which mostly by advertising promise to make accomplished midwives out of workingwomen, in a given time for a given fee. The same promoters graduate their own pupils for an extra compensation. How much or how little each individual school teaches is indifferent. The system is just as bad as that of our former diploma mills used to be in this State. It is just as hard to have acts establishing separate licensing boards as it was to establish State examinations for physicians. Underground influence is being used, and the old-time cry is raised: "What! a larger fee for a confinement to a poor man in the interest of the money-grabbing rich physician?" The issue is lost in this demagogic logic and the bill slumbers in committee, while hundreds and thousands of wives are killed annually whose lives might be preserved to their families and the community if the legislators could be shaken up from their lethargy.

For one society alone, were it as strong as our own, to undertake this work, would be the work of Sisyphus, but the times are ripe for medical legislation, or I am much mistaken. We have among our prominent members, besides others, the distinguished president and vice-president of the New York County Medical Society, which makes it a special duty to promote public health and license practitioners. There will soon be a meeting of the State Medical Society in Albany, at which our honorable president will play a conspicuous rôle. Under such circumstances, gentlemen, could we not hope for success in securing adequate legislation properly to regulate the practice of midwifery by midwives in our Empire State?

45 Irving Place.

THE OPERATIVE SIDE OF ORTHOPÆDIC SURGERY.[1]

BY NEWTON M. SHAFFER, M.D.,

SURGEON-IN-CHIEF OF THE NEW YORK ORTHOPÆDIC DISPENSARY AND HOSPITAL.

THE founders of the New York Orthopædic Dispensary and Hospital builded better than they knew when, thirty-one years ago, they met and organized the work which calls us together on this occasion.

Thirty-one years ago orthopædic surgery was scarcely more than a name in New York City. It may almost be said that few outside of the medical profession and the technically educated classes grasped the full meaning of the word "orthopædic." A few surgeons, inspired largely by the late Dr. Henry G. Davis, were devoting themselves to the treatment of deformities, especially those occasioned by diseases of the spine and hip-joint. Modern orthopædic surgery was in its infancy, and the work of these pioneers was attracting the attention of the lay as well as the professional public. It was during this embryonic period that the founders of your institution applied to the State legislature for a charter, in the following language: "The purposes of the said corporation shall be to establish and maintain an institution for the treatment of physical deformities and to give instruction in such treatment—and more especially to afford surgical and mechanical treatment to the disabled and deformed among the poor."

It was the mechanical genius of Davis which contributed greatly to this new era in the treatment of physical deformities. It was he and his colleagues who made American orthopædic surgery famous. It was, however, the mechanical rather than the surgical side of orthopædy of those days which brought to the front the names of those who are to-day recognized as the fathers of orthopædy in this country, and it was the mechanical treatment of hip-joint disease and spinal disease, as taught by Taylor, which led to the foundation of your institution and which has had more or less effect upon the development of American orthopædic surgery. It was under these circumstances that your special charter was obtained from the New York State legislature. It would have been a matter of no surprise to me, knowing as I do the sentiment of the profession in those early days, and appreciating also the influences which originated our great work, if the charter had simply designated the mechanical treatment of deformity as the sole object of the corporation. But, with a wise and almost prophetic foresight, the charter was framed in a broad and liberal sense, and the portion quoted above might almost be called a definition of modern orthopædic surgery.

On previous occasions I have called your attention to the relation of orthopædic surgery to general surgery—to the necessity of a thorough mechanical training as a preparation for orthopædic work, and to the future demands of orthopædic surgery from a mechanical standpoint. It would seem only proper on this occasion, therefore, that I should dwell somewhat upon the operative aspect of the treatment of deformities.

The treatment of chronic deformities would be emasculated if mechanical treatment was omitted. Indeed, under those circumstances, there would be only operative surgery left. On the other hand, if operative surgery was omitted, mechanico-therapy would still find an important place in surgical science and the major part of orthopædic work would still go on. To the legitimate orthopædic surgeon, therefore, operative work takes a secondary and minor position, just as the mechanical part takes by far the more important place; and in true orthopædic surgery operative work, *per se*, has no real status. In short, if orthopædic surgery is to maintain its position among the specialties in medicine, it must exist upon a mechanical foundation and its disciples must be experts in the use of apparatus. At the same time the orthopædic surgeon should be well prepared to operate upon those patients who require special mechanical treatment after operation. Hence it is that I maintain that the simple excision of joints is not within the field of orthopædic work, because the general surgeons and the general hospitals are fully equipped to do this work and are glad to receive and care for this class of cases, the after-treatment of which ordinarily requires no special orthopædic training. The same may be said in a general way of the operative treatment of knockknee and bowlegs. The artificial fracture of a bone requires the same treatment as an accidental fracture, and this certainly comes within the scope of general surgery. Under these circumstances there is no occasion to fill the wards of an orthopædic hospital with patients of this class, as long, at least, as there is such a great demand upon it for strictly orthopædic cases, which are not as a rule received by the general hospitals. For example, a patient with knee-joint disease or hip-joint disease needing excision, or a patient with rachitic leg deformity requiring osteotomy, applies for admission to your wards. Am I, as your surgeon-in-chief, justified in receiving the case when there are fifty or more cases of hip-joint disease, spinal disease, clubfoot, etc., which urgently demand your care and which are awaiting admission to your wards? My reply is, "No." We could fill our wards with operative cases in a month, the larger number of which do not require orthopædic care after operation, and which can be cared for in every way in the general hospitals. I certainly feel it my duty to decline them, when the only objects I would have in admitting them would be to gratify a personal ambition to appear as an operative surgeon, and to submit for your consideration at the end of the year an ample table of "operations performed." Some surgeons best known as orthopædic surgeons are wasting their time on work that is well done by general surgeons and well performed in general hospitals. These men are making a serious error, I think, and are retarding the normal growth of true orthopædic surgery. Some day these facts will be appreciated. It may not be in my day, but sooner or later the truth will prevail, and both the medical profession and humanity will be benefited. In the mean time I shall keep on in the course I marked out twenty-four years ago, when at an early age in my professional career I had the opportunity to gratify my surgical ambition in the orthopædic wards of St. Luke's Hospital. Nor is that opportunity lacking now, with the great mass of clinical material which presents in the service of your institution. I am gratified to know that the seed sown nearly a quarter of a century ago is bearing good fruit.

The operative part of orthopædic surgery therefore becomes the simple but necessary adjunct of the mechanical work. One may be an operative surgeon and know but little or nothing of real orthopædic work, but the orthopædist must be the one and know the other. One may perform all the major operations of surgery, and yet not have the requisite technical knowledge properly to adjust a hip splint or a spinal brace. The orthopædic surgeon should be able, if the after-treatment demands it, to excise a joint or to perform any operation which supplements mechanico-therapy, but in all but very exceptional cases he should confine his cutting-work to that field which supplements his mechanical operations.

Nor does it follow, I think, because a deformity exists, that the patient should necessarily come under

[1] A portion of an address delivered before the trustees of the New York Orthopædic Dispensary and Hospital on the occasion of their thirtieth annual meeting, held November 15, 1897.

the care of the orthopædic surgeon, any more than that the general condition giving rise to the retinitis of Bright's disease, or to the tabetic atrophy of the optic nerve in locomotor ataxia, should come under the care of the ophthalmologist. All specialties have their origin in general medicine or general surgery. The existence of a specialty depends upon several factors, the important one being the necessity for the development upon certain lines of a neglected branch of medicine or surgery involving patient study and careful research. It is along these lines that a specialty succeeds, and the danger of specialism of the present day lies in the fact that those who follow it are prone to invade other fields. The fault with many of those who are known best as orthopædic surgeons is that they do not confine themselves to orthopædic work; they often operate when there is no necessity for cutting, and they are not familiar enough with the technique of mechanical work to get the best results from mechanico-therapy. They do the work of the general surgeon instead, neglecting or ignoring the plain path of duty which lies so patent before them.

Why is this so? A few extracts from a recent editorial in the New York MEDICAL RECORD, may help us in answering this question. The editorial referred to is entitled, "Is Gynæcology Destined to Become an Obsolete Specialty?"[1] After a general consideration of the relation of gynæcology to general surgery, the writer says: "Not content with confining themselves to their proper region, they [the gynæcologists] have reasoned that their familiarity with abdominal surgery should render them the equals if not the superiors of general surgeons in the handling of cases which bear no relation to diseases of the pelvic organs." The writer then asks: "How is it that this change has come about in America, when abroad the distinction between the gynæcologist and general surgeon is just as sharp as ever? It appears to be due to some extent to the fact that the commercial factor has become prominent to the exclusion of the scientific." Again: "If gynæcology is to remain a specialty, it must be because its followers continue to demonstrate the fact that they can do the work better than the general surgeon. . . . It is along the line of conservatism that the battle must be fought, not radicalism." Still further: "Gynæcology is the natural outgrowth of general surgery, but the contrary is far from being true, and any attempt to reverse the condition must end in ultimate failure." And finally: "Let gynæcologists prove that their specialty is capable of development along other lines besides those of radical surgery, and there is no danger that it will ever come to be regarded as unnecessary." Comment on these plain statements seems superfluous. But if the words "orthopædic surgeon" or "orthopædic surgery" be inserted in place of "gynæcologist" or "gynæcology," in the quotations given above, the truth will be apparent to the candid observer. It will be along the lines of conservatism that orthopædic surgery will be developed—not on the lines of operative surgery—and it will be all the better for the men now engaged in preparing for future work in orthopædic surgery if they bear these facts in mind.

[The remainder of the address was devoted to statistical facts and the work performed in the institution during the past year.—ED.]

To Abort a Bubo.—Pressure bandage, when suppuration is not too far advanced, by folds of cotton carefully adjusted and a cocoanut-sized wad of tightly compressed cotton placed over the whole and retained by a very tight spica, produced abortion of the process, in nine out of twelve suitable cases.—GAETHER.

New York MEDICAL RECORD, February 27, 1897.

Clinical Department.

ABSENCE OF PAIN AND THE VOLUNTARY MUSCLES AS AUXILIARY AIDS IN LABOR.

BY JOSEPH N. STUDY, M.D.,

CAMBRIDGE CITY, IND.

IT has been said that parturition is never absolutely painless in womankind, and that pain is so constantly present as to characterize it as one of the most prominent clinical phenomena of labor. Pain in labor is usually attributed to the contraction of the involuntary muscular fibres of the uterus encroaching upon the sensory nerves and filaments. The following case well illustrates the title of this subject.

On July 31st, at 11 P.M., I saw Mrs. W——, aged thirty-two, in her fourth pregnancy. I had attended her in all of her previous confinements. The first child I delivered with forceps. The second confinement was normal. She was delivered of twins at the third confinement. She stated that she believed herself pregnant about two hundred and eighty-six days, and with the exception of a slight vaginal discharge had no symptoms of immediate confinement. A vaginal examination revealed the cervix fully dilated, the vertex presenting in the first position. At the expiration of three hours no pain whatever was complained of. The fact that my patient resided nearly five miles from my home and I had an important engagement six hours later caused me to ask the woman to take her position in bed. I then requested her to seize my hands and to make great effort at pressing down, while I aided by pressure over the fundus of the uterus. This effort was repeated every four or five minutes for two hours, when a well-developed male child was born alive. Only when the head was passing over the perineum was pain complained of, and that was insignificant.

A CASE OF PNEUMONIA TREATED BY VENESECTION.

BY ALFRED Q. DONOVAN, M.D.,

ELIZABETH, N. J.

THE fashion of bleeding has become extinct in our practice of to-day, and he would be a bold surgeon who should endeavor to revive it. Yet I believe that it was occasionally beneficial, and I wish to report a case of my own in which I think venesection was of decided service. From the results of this case I am inclined to think that in cases of pneumonia, when the patient is in sthenic condition, it is invaluable.

My patient, aged seventeen years, five feet four inches in height, and weighing about one hundred and eighty pounds, by occupation a fruit dealer, was sent to the Alexian Brothers' Hospital, Elizabeth, N. J., April 13, 1897, suffering from a double pneumonia. On the fourth day after his admission his respirations had gradually diminished to 60, his temperature was 104° F., and his pulse 140. He seemed to be rapidly sinking, and the prognosis was very bad. The ordinary remedies had been used, such as strychnine and digitalis in combination with the supporting plan of treatment, together with inhalations of oxygen, but all seemed to be of no avail. At this period I thought of venesection; I opened the cephalic vein and allowed about ten ounces to escape. After a few hours the temperature fell to 102° F., the respirations to 35, and the pulse to 100, and the man expressed himself as breathing more easily. The blood was examined microscopically, and pneumococci were found. For two days the patient was apparently better. After this period his respirations again went to 50, with pulse and tempera-

ture increased; he was again relieved of ten ounces of blood, and again the respirations fell to 35, with a reduction of temperature and pulse. From this time he gradually improved, and was finally discharged cured, May 10, 1897.

FORCED ENEMATA IN THE TREATMENT OF INTUSSUSCEPTION.

By THOMAS H. HAWKINS M.D.,

[illegible]

A LITTLE child, about eight months old, was brought into St. Anthony's Hospital, by Dr. E. C. Hill, of this city, June 16, 1897. Dr. Hill had already diagnosed intussusception. I made a careful examination and confirmed his diagnosis. Dr. Leonard Freeman was asked to examine the child, and agreed with us as to the nature of the lesion. The child had been vomiting persistently for about twelve hours, with no action of the bowels. A distinct mass could be felt in the right side of the abdomen, two inches above and about two inches to the right of the umbilicus. We advised laparotomy. Before doing the operation, however, Dr. Freeman suggested that it might be a good plan to inject one-half pint or more of warm water, and if this came away tinged with blood there certainly could be no doubt as to the correctness of our diagnosis.

The suggestion of an enema called to my mind several cases of this kind under my care during my residence in New York City, in the years 1874–76. In the latter year I read a short paper, containing a report of three cases of intussusception treated by forced enemata, before the Eastern Dispensary Medical Society. This article was published in the *Medical and Surgical Reporter*, December, 1876. These cases were successfully treated, and there was never a return of the trouble, so far as I have been able to learn. Two of the patients were under my observation for some five years afterward.

I therefore concluded to try the injection method in the present case. The child was placed across the nurse's lap on its abdomen and its body allowed to hang head downward. The nozzle of a bulb syringe was inserted into the bowel and the buttocks were compressed tightly. The water was pumped in rather slowly at first, and was violently expelled; but gradually more force was used, and the water entered more easily. About one gallon was used in this way in from six to seven minutes. When the child had been placed in bed on its back the tumor was again felt for, but could not be found. Dr. Hill, Dr. Freeman, and myself made a careful examination and decided that the invagination had probably been overcome. The vomiting gradually ceased, but there was no passage of fæcal matter for nearly twenty-four hours, though there was considerable discharge of blood and mucus. The child made a perfect recovery.

In the article published in the *Medical and Surgical Reporter*, if I remember correctly, I laid considerable stress on the necessity of using a large amount of fluid with a great deal of force. I also took the ground that there is practically no danger of rupture of the intestine; that, in fact, in cases of acute intussusception the invaginated portion of the intestine, on which the greatest strain is exerted, is also the strongest part of the gut, by reason of the reduplication.

I am led more particularly to report this case because of an article published in the MEDICAL RECORD, July 17, 1897, by Dr. C. L. Gibson, of New York, entitled "Mortality and Treatment of Acute Intussusception." In this article the writer, in speaking of enemata, says that they are distinctly dangerous, and that the amount of pressure which can be used is very limited; that the quantity of water should not exceed one and one-half pints, and the pressure should not be greater than three feet. From this I infer that he uses the fountain syringe. The use of the fountain syringe will certainly not succeed nearly so well as the use of the bulb.

One other point in connection with this last case, namely, that water unquestionably found its way through and passed from the mouth of the child. I do not propose that forced enemata with fluids should be substituted for laparotomy in all instances. I merely call attention to this case and the report of my former cases, that they may be considered for what they are worth in the study and future treatment of intussusception.

ECLAMPSIA DUE TO PHIMOSIS IN A CHILD SEVEN MONTHS OLD.

By HERMAN BESSER, M.D.,

[illegible]

ON August 11th I was called to attend a male infant in convulsions. On arriving at the house the following history was obtained from the mother: The patient was a second child, aged seven months. A previous child had died at six months, of convulsions. The baby had never nursed; it was fed first on condensed milk, 1 to 12, for three months, and later a food of the proprietary type was substituted. This, also failing to agree with the child, was followed with cow's milk, diluted one-half with barley water, with better results. The child had appeared to be getting along fairly well up to a week previous to my visit, when the mother noticed that it became fretful, screaming at night as if in great pain. These attacks were thought to be colicky, as the infant would draw up its legs until its knees almost touched the abdomen. Catnip and fennel teas had been given, without relief.

After I had obtained the foregoing history, the child was stripped and laid upon the bed, when I noticed that all its muscles were relaxed, the child lying perfectly limp. Examining the head, I found it rather large, with parietal bosses decidedly prominent; fontanelle, 1½ x 1. The ribs were beaded, the epiphyses somewhat enlarged, and the child was pot-bellied. The child had passed three green, slimy, undigested stools during the previous twenty-four hours. It had had no fever, the mother believed, but the thermometer then registered 103° F. in the rectum. The respirations were slow and deep, and the pulse was rapid and feeble. The child was apparently in deep coma.

I concluded, for want of more positive signs, that the condition was due to an intense intestinal intoxication, and ordered a mustard pack. While this was in preparation I turned my attention to the child, and as my hands touched the abdomen it seemed unusually tense. The percussion note just above the umbilicus was tympanitic, while immediately below and on either side it was flat, with a decided sense of resistance to the finger. On questioning the mother as to the amount of urine passed, she replied that for the two days previous she thought the diaper had not required changing so often as before, but she had not attached much importance to this fact. I immediately made an examination of the penis, and found that the prepuce was exceedingly long and adherent. Taking a grooved director, I tried to insert it into the orifice of the prepuce and push aside the fold of mucous membrane, but it was with considerable difficulty that I succeeded in forcing back the prepuce far enough to catch a glimpse of the glans. The mucous membrane had become so adherent that the resulting obstruction to the orifice of the glans almost completely prevented the outflow of urine, which was thus dammed back into the bladder, dilating it to such an extent

that it occupied a large part of the abdominal cavity. I finally succeeded in breaking up the adhesions, when the pent-up urine was discharged, saturating the bed and the clothing of the physician. The child was then placed in the mustard pack, and within a few moments was restored to consciousness.

I left a grain of calomel to be given in divided doses, and a fourth-grain Dover's powder every two hours. The following day I found the patient looking bright and happy. He had slept well during the night and passed an abundance of a highly colored urine. He took food eagerly and appeared to be none the worse for the previous night's experience. I suggested to the parents that circumcision would remove any chance of a recurrence of the symptoms, and two days later at their request performed this operation, which was followed by an uneventful recovery. Under suitable diet the child is now doing well.

242 West One Hundred and Twenty-Third Street.

STRANGULATED UMBILICAL HERNIA.

By WILLIAM T. SMITH, M.D.,

Hanover, N. H.,

Surgeon to the Mary Hitchcock Memorial Hospital.

The report of a case of this nature by Dr. Coley, in in a recent issue of the Medical Record, moves me to tell of a case in my own experience, which illustrates a phase of country practice.

I was called to see the patient in consultation with Dr. G. W. Weymouth, of Lyme. She lived in a small, unpainted house, beautifully situated on the lower slope of a mountain. There were two rooms on the first floor—a kitchen and a bedroom. In the latter apartment lay the patient, a woman of some two hundred pounds' weight. Half a dozen children were scattered about, the youngest little more than a baby. The mother from her bed commanded a view of her domain and still directed its affairs. We found a spheroidal tumor, five inches in diameter, tense, tender, dull on percussion. It had been out about thirty-six hours; the bowels were obstructed, and there were nausea and pain. After repeating unsuccessfully attempts at reduction which had already been made, we prepared for operation. There was a stove in the kitchen, and there was wood. The teakettle had been worn out and its place was supplied by a dingy tin pail. For washing-purposes there was the tin basin in the sink, which served the whole family. Under the sink was a pail of refuse. Exploring the pantry for a clean "dripping-pan" in which to boil instruments, we found a utensil of that kind, but it retained so much of its last contents that we discarded it. Neighbors had meantime appeared, and we made requisition on them. We obtained in this way a kettle and pan and some bowls and pitchers. A messenger was dispatched to the store, one and one-half miles away, for towelling and a paper of pins, of which there was none in the house. In the course of time instruments were sterilized, bichloride solutions were made, the field of operation was prepared, and on the bed where we found her we attacked the tumor. An incision was made around it near its base, going through skin and subcutaneous tissue. Skin and subcutaneous tissue were then dissected back as far as the edge of the aponeurosis surrounding the neck of the sac. The sac being opened, gut and omentum were found in it. Some recent adhesions were broken, and the edge of the ring was nicked to permit the return of the gut, which was viable. A mass of congested and matted omentum was tied off with catgut and removed, and the whole sac with the skin on its upper part was amputated. The aponeurotic edges of the ring were drawn together with stitches of kangaroo tendon, which included the peritoneum. The superficial tissues were sewed with silkworm gut and antiseptic dressing was applied. The wound healed by first intention. The patient resumed her ordinary duties in a few weeks, and five months after the operation gave birth to a healthy child. There has been no return of the hernia.

Progress of Medical Science.

Successful Treatment of Circumscribed Traumatic Aneurism of the Right Internal Carotid Artery within the Cranium by Means of Ligature of the Common Carotid.—Hinde (*Journal of the American Medical Association*, December 4, 1897, p. 1,154) has reported the case of a Chinaman, thirty-six years old, who eighteen months before coming under observation had been felled to the sidewalk by a blow from the shoulder, striking the occiput in his fall. The man at once arose and walked home, a distance of a block, and lay down for about ten minutes. On the following day he felt well enough to resume his work. Some time afterward both eyes began to redden, the right one in greater degree, and in a short time it was noticed that the right eyeball commenced to bulge forward. The redness and the exophthalmos on the right side steadily increased until the patient came under observation, when the palpebral, conjunctival, subconjunctival, and anterior ciliary veins of the right eye were found to be greatly enlarged and tortuous. No pulsation could, however, be detected in any of these vessels, and none on light palpation with the fingertips applied to the eyeball. The motility of the globe was preserved, except that in attempts at abduction it halted at a point slightly beyond the mid-position. The reflexes of the right pupil were enfeebled. The ophthalmoscope disclosed enlargement and tortuosity of the retinal veins, but an absence of pulsation. The arteries were of normal size and course. Both arteries and veins, especially on the surface of the disc, were marked by white lines along their walls, indicative of perivasculitis. Disc, retina, and choroid were normal in appearance. The veins of the left eye were somewhat enlarged throughout, but presented otherwise nothing abnormal. The sensibility of the right cornea was less acute than that of the left. The visual fields were alike and normal. The acuity of vision was slightly greater on the left than on the right, but fairly good on both sides. On placing the cup of a stethoscope over the closed right eye, a loud blowing bruit or murmur was heard synchronous with the heart beat, and an intermittence of the heart's pulsation from six to eight times per minute was readily detected. The same conditions, in slighter degree, were present over the right temporal region, and in still slighter degree in the left temporal region. In all of these situations the aneurismal sound was greatly increased when the patient stooped forward. It disappeared completely on digital compression of the right common carotid artery in the neck. On further inquiry it was learned that the patient became conscious of a noise in the head some six or seven days after his fall, and that it had grown steadily louder. The conclusion was reached that an aneurism had formed on the internal carotid artery within the cranium, perhaps secondary to fracture of one of the bones at the base, at a point where the vessel passes on the side of the body of the sphenoid bone between the layers of the dura mater and in immediate proximity to the cavernous sinus; compressing the latter and preventing the return of the venous blood from the contents of the right orbit, but not affecting the arterial supply; compressing the trunk of the sixth nerve, and in slighter degree also the ophthalmic division of the fifth nerve.

To remove the possibility of syphiloma of the brain, large doses of potassium iodide were administered for six weeks, without improvement. Operation was therefore advised, and it having been agreed to, the right common carotid artery was occluded in the neck with two ligatures, one-half inch apart. The immediate result of the operation was a complete cessation of the bruit, with increase in the exophthalmos, which, however, subsequently receded. Under treatment with the faradic current the paresis of the right external rectus muscle and diplopia that had developed were greatly improved. The ultimate result was entirely satisfactory, the patient being freed from all his previous symptoms.

Impetigo and Ecthyma have been shown by Balzer and Griffon, in a bacteriologic study of thirty-one cases of the former and fourteen of the latter (*Le Bul. Méd.*, October 31st), to depend upon the constant presence of streptococci in the form of diplococci like fine grains, included in the protoplasm of the leucocytes or arranged outside of them. Cultivated in bouillon the microbe takes on the features of the classical streptococcus pyogenes. Inoculation experiments show that the organism is truly pathogenic (causing abscess, erysipelas, and even fatal septicæmia).

Obstruction of the Small Intestine by a Gall Stone.—Bradbury (*British Medical Journal*, September 25, 1897, p. 796) reports two cases of impaction of the small intestine by gall stones attended with symptoms of obstruction. The condition is a rare one, having been observed but once in the Manchester Royal Infirmary between the years 1883 and 1896 among fifty thousand in-patients, and only four times during twelve months in some of the largest hospitals of England, representing altogether eighty thousand in-patients and several hundred thousand out-patients. The first case occurred in a man, sixty years old, and was complicated by the existence of cystitis and a general debilitated condition that rendered diagnosis almost impossible. The second occurred in a woman, also sixty years old, in whom there were no symptoms until obstruction occurred. The one case terminated fatally, the other in recovery. In neither case was there a history of jaundice or colic, or of a similar previous attack. In the one case the stone was about one and one-half inches in diameter and nearly spherical. In the other it weighed nearly one-half ounce, was almost two inches long, a little more than one inch in diameter, and had a circumference of three inches. In the second case no indication whatever of any hepatic disturbance existed, and until symptoms of obstruction occurred the patient was quite well. In the first case, however, there were indigestion, tenderness and enlargement of the liver, rigor, and rise of temperature, with profuse sweating. Under chloroform a localized swelling was felt in the right hypochondrium, but this disappeared completely later. Neither hemorrhage nor tympanites was present in either case at any time. Post-mortem examination in the one case disclosed the presence of a gall stone impacted in the jejunum, it having escaped from the gall bladder into the first portion of the duodenum through an opening about one inch in diameter. In the second case the stone was passed after the injection of an enema. In both cases the vomit was copious and almost like pure bile, but toward the end it became slightly stercoraceous in the first. In neither was the pain of exceptionally severe character. In the fatal case the symptoms lasted ten days; in the other, two days.

Cant (*British Medical Journal*, October 30, 1897, p. 1,258) reports three additional cases of obstruction of the small intestine by a gall stone, occurring in a woman sixty-five years old, a man about forty-eight, and a woman about fifty, respectively. In the first abdominal section was performed and the calculus removed, but death ensued about a week after the operation. In the second also cœliotomy was performed and the stone removed, but death resulted shortly after the operation. Cœliotomy was likewise performed in the third case, in which recovery ensued. In two of the cases an attempt was made to break up the concretions with a needle, but without success. None of the patients had previously had symptoms of gall stones, but only bilious attacks; nor had they suffered from severe pain preceding the obstruction. The vomiting was at first of a markedly bilious character and gradually became stercoraceous.

Physiologic Mobility of the Liver.—Dr. Laborde has demonstrated (Société de Biologie) that the lower border of the liver undergoes changes of level much more extensive than has been thought to be the case. Examination by the radioscope during active respiration shows an elevation of as much as six centimetres at times. This is an important point to remember in percussion of the organ.

Purpura Due to the Vapors of Benzin.—Drs. Lenoir and Claude related an instance at the last meeting of the Société des Hôpitaux which would tend to show that benzin might be a causative agent in even fatal instances of purpura. A dyer, twenty-seven years of age, presented hemorrhagic pleurisy as well as purpuric blotches and bleeding from various mucous membranes, leading to extreme anæmia and death. Autopsy revealed numerous infarcts. The occupation in which the fumes of benzin were inhaled had been given up some months before death, but not until several months after the onset.

The Employment of Thyroid Feeding in the Treatment of Insanity.—Cross (*Edinburgh Medical Journal*, November, 1897, p. 471) reports a series of twenty cases of various forms of insanity, including excited melancholia, simple melancholia, enfeeblement, dementia, senile insanity, and chronic mania, in which thyroid feeding was employed as a therapeutic measure. All of the cases showed a greater or less reaction to thyroid administration, as shown by slight rise of temperature and slightly increased respiratory frequency, together with more marked changes in the pulse, which was not only increased in frequency but also distinctly weakened. In all cases the pulse was the first to show any change and was the condition most affected; and this reaction increased and became most pronounced toward the end of the treatment. After the treatment was discontinued, the reaction passed off in the majority of cases, although it was quite noticeable for at least a week. As regards the relation of the mental condition to the amount of reaction produced, no definite statement could be made. One of the cases that improved showed a slight reaction, while one that presented no change mentally reacted very strongly, although the amount of thyroid given was the same in each. None of the eight males treated became excited during treatment, while the only cases of permanent improvement occurred in male cases. On the other hand, seven of twelve females became excited or showed increased excitement during the treatment, although no permanent improvement occurred. Of the twenty cases treated, two showed permanent improvement and both of these had previously been regarded as hopeless on account of the stationary character of their mental condition. Although none of the other cases was so distinctly benefited, it appears to be indicated that thyroid treatment should receive a fair trial before any patient suffering from insanity is regarded as hopelessly incurable.

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PUBLIC HEALTH IN RELATION TO THE MILK AND FOOD SUPPLY.

THE strides made toward perfecting a system of public hygiene is one of the features of the present age. The fact is being slowly but surely grasped by the community at large that many of the epidemic diseases which have from time immemorial been regarded with the utmost dread can not only be avoided, but can be absolutely stamped out. This happy result, however, can be attained only by the exercise of great vigilance on the part of the sanitary authorities backed by the co-operation of the people themselves. The boards of health have done much, but if they were convinced that the sentiments of the general public were wholly with them their powers for good would be immensely enhanced. Many of the regulations introduced by them are beyond the scope of the ordinary lay mind, and are looked upon as unnecessary and troublesome. Indeed a large number of the medical profession itself regard some of the present-day notions in respect to hygiene as savoring of faddism, and will require further and more convincing proof before accepting them as anything more than experimental. Nevertheless, on the more salient and important points there is a pleasing unanimity of opinion. The fact is recognized on all hands that an uncontaminated water supply, a pure and wholesome milk supply, an efficient sewerage system, a proper disposal of refuse, and cleanliness in the manufacture and handling of all articles of food, are essential to the well being of each and every individual. Of these, without doubt, the question of pure water is the most important, but the subject of late has been so fully discussed in all its bearings that it would be superfluous to do more than merely refer to it here. Next in importance comes milk, and this again is a matter which has been thoroughly well threshed out. Still it is satisfactory to note that the public and even the lower classes are beginning to understand the benefit of an untainted milk supply, and to appreciate the efforts of those laboring in their behalf to achieve this object. When retailers of milk, both wholesale and retail, become alive to the fact that the people demand a genuine article and will take no other, they will quickly realize the situation and will be careful to supply what is required. One method of adulterating milk, largely practised among dairymen, may be mentioned here—the addition of water is referred to. In the annual report of the commissioners of health of Milwaukee, attention is drawn to this custom in these words: "Analyses of milk made in this department have shown that lake water has been added to the milk as a diluent, and in other instances well water. In several cases of the latter kind it was shown that the well from which the water came was filthy and the water unfit for drinking-purposes, but it had been added to the milk, so that nearly one-third of the entire bulk was water."

The bakeries and candy manufactories of Milwaukee underwent early in the year a systematic examination by the department of health, and their condition was found to be such that legislation was brought into force to abolish the evils.

The custom of exposing fresh fruit, candies, fish, vegetables, and various other articles of food on the streets is very prevalent in many parts of America. This practice is greatly to be deprecated, as it is not only a source of danger, but also extremely disgusting. When one considers the dust and filth that is being continually wafted on the breeze in all towns, this fact will be brought home in all its nastiness. If, as suggested in the Milwaukee health report, the people would take the matter into their own hands and refuse to purchase any article of food exposed to such conditions, the practice would soon be brought to an end. This question should be well ventilated in the public press; the more it is aired, the sooner will the filthy habit be stopped.

OFFICE BORES.

IT is a general belief that the poor doctor is always overjoyed when a patient, no matter of what kind, enters his office to swell his coffers. The number of bores that constantly beset him and tap his energies through the exasperating conduits of long and uninteresting accounts of trivial ailments is never taken into account. Aside from his strain of self-control and the enervating influences of smiling dissimulation, there is a special harm to the victimized adviser's sympathies in the engendering of a retaliatory unconcern in the patient's present condition and an indifference to its final ending. If perchance there is a sudden and unexpected interruption of all the symptoms usually designated heart failure, there comes a feeling of complacency in his contemplation of the obituary notice of the sufferer, which promptly settles all old scores and places the lucky survivor on the high plane of becoming resignation to the decrees of a kindly fate. Time is the only thing that must tell in such a race with the inevitable.

In the mean while the tales of woe must go on. The uprisings and downsittings must be noted by urination at night and defecation in the morning. It is comforting for the innocent professional victim of such constant watchfulness to realize that at such times he is always kept in mind. The urinary bottle with its daily tribute is ever ready to offer its sugges-

tion as to what has been done and still must be done so long as the visits continue. Each receptacle marshals itself in the solemn waiting row of similar odorous companions ruthlessly consigned to dilatory neglect, and the effectual corking of its contents is an implied revenge on the ever-ready fluency of the generous distiller. All such patients mean well, and so does the consultant who naively declares, after emptying the bottle, that "nothing was found" in the specimen.

Then comes the furtive young man, with wavering focal concentration, weak lip, and pasty palm, whose manly substance is tapped in the unguarded hour of sleep, and who wakes only to find that all is gone. Even this may be tolerable in comparison with the livelier and more ambitious youth, who voluntarily courts the pang of repentance in his more progressive ventures in the highways and byways of forbidden pleasures. What is lacking in the effusive mucosity of one is more than made up in the other. The miserly mournfulness of the spermatorrhœic is duly offset by the generous prodigality of the gonorrhœic. On the principle of easy come and easy go, the virus is scattered in the office of the doctor, on his carpet, chair, paperweight, doorknob, and towel, with a zeal that is grimly suggestive of a better cause. The tear of pity, if it ever comes for the oozy sufferer, can never be safely wiped away by the hand that has shaken his.

And lastly, who does not see the young and confiding unmarried female, who has caught cold by temporarily sitting on picnic grass, and who tells the old, old story of a deferred catamenial hope that maketh more than one heart sick?

Or, worse than this, how often does the casual and plausible youth mock the claims of an ordinary credulity when he confidingly asks, on behalf of a dear and absent friend, for the pill that will do the business and end anxiety?

Think of the poor doctor who must be made to believe it all, and sympathizingly play the usual fool besides. "Next—come in, please."

DISPOSAL OF GARBAGE.

One of the most serious obstacles in the way of a more satisfactory system of public hygiene is the disposal of garbage. The question presents numerous difficulties and must be regarded from an economical as well as a sanitary standpoint. There appears to be some confusion as to the correct definition of the term garbage.

The committee appointed by the American Public Health Association define the word as follows: "By the term garbage is meant animal and vegetable waste matter subject to rapid decay, from kitchen, markets, slaughter houses, etc., but not including nightsoil and street sweepings." The methods now in use for the disposal of garbage are one and all in a greater or lesser degree open to objections, but, from the immense amount of interest evinced in the matter, it may be with safety predicted that ere much time has passed a healthy and economical system will have been evolved. From the reports of the committee, collected from one hundred and fifty American cities, it seems that in forty-six of these dumping on and ploughing into land is the practice followed; dumping at sea or into a lake or large river is the plan pursued by fourteen cities; feeding to animals in forty-three cities; reduction to grease and fertilizer in seventeen cities; cremation in thirty cities. The first three of these methods may be dismissed briefly; they are all very imperfect, while feeding to animals is positively dangerous. There are then left the reduction and cremation processes between which to choose. In regard to the relative merits of these methods there exists in this country a wide difference of opinion. On the one side it is argued that cremation is wasteful and expensive; on the other, that in addition to being insanitary reduction to grease is also in most cases as costly as cremation. Mr. Rudolph Herring, speaking of the reduction system, says: "Reducing garbage to grease and fertilizer renders the mass of matter harmless, provided that the work is thoroughly done. It is found, however, that when this system is followed offensive odors are likely to pervade the neighborhood, and that the works will be looked upon as a public nuisance." The truth of these remarks has been proved in many towns, and at the present time a striking illustration of the fact is being afforded by Wayneport. The condition of affairs at this place has so roused public attention that the town board of health of Macedon recently engaged Dr. M. A. Vedder, of Lyons, to investigate and report upon the garbage-reduction works.

The results of Dr. Vedder's observations will hardly tend to tranquillize the minds of those residing in the locality in which these works are situated. After condemning *in toto* the position of the works, and after pointing out the fact that they are insanitary in a very high degree, Dr. Vedder ends by saying: "In short, the entire process is evidently an experiment, and is susceptible of very great improvement. Whether it can be perfected so as to become practically unobjectionable is a question difficult to decide, taking into consideration the present location of the plant. A practical point that is likely to be of wide interest in view of recent agitation in regard to sewage farms is in regard to the necessity for avoiding an impervious clay soil, especially if the surface is nearly level. The result is very much better, if such material be allowed to run over a sandy soil and down a slope, than if it be accumulated in a festering mass, breeding poisonous and foul odors year after year."

The reduction process in this country commends itself on account of its supposed economical advantages as compared with cremation. In America the cost of garbage disposal by cremation varies from three to ten cents per capita. In Europe the cost of refuse destruction is very slight. In some cases, in which the heat is used to generate steam power, there is said to be even a profit. The most interesting experiment in this connection is now being tried at Shoreditch, England, and is a practical application of the idea how to combine the destruction of refuse with the production

of electric light. Of course it would be as yet premature to pass a decided opinion as to the result of this trial, but it is estimated that under the new methods the cost will be reduced by something like two-thirds.

The conclusion arrived at by the majority of experts appears to be that the best system, from a sanitary point of view, is destruction by fire, that is to say, when the methods are efficiently carried out. The small and oftentimes questionable value of the refuse for fertilizing purposes should not be weighed in the scale against the greater value of improved sanitation.

THE GEORGIA FOOTBALL BILL.

Governor Atkinson, of Georgia, has vetoed the anti-football bill which was passed almost unanimously by both branches of the legislature. His objections to the bill are that "legislation which seeks to usurp the responsibility and functions of trustee, faculty, and parent, and take charge of young men and children in their sports, is fundamentally wrong; it is governmental paternalism of the most vicious and pronounced type." The governor says, however, that "some legislation may be necessary to modify the fierceness of football games," seemingly overlooking the fact that there is just as much paternalism in deciding upon the exact amount of violence permissible in a game as there is in prohibiting it. The bill forbade the "sport" only when money was charged for admission to the grounds where the game was played, so that it would have been still permissible to encourage "aggressive manliness," which the governor defined as "a quality amalgamated of courage, endurance, restraint, and the power to act surely and unfalteringly in an emergency —a quality which football tends to foster and to keep alive." But apparently an essential to the encouragement of aggressive manliness is a good pot of gate money.

News of the Week.

A New Public Hospital in Berlin.—There are at the present time three large public hospitals in Berlin, and authorization has recently been granted for the erection of a fourth.

A Woman's Work in Afghanistan.—It is pleasing to see a woman who has a real "vocation" for medical work make such an advance as that achieved by Miss L. Hamilton, formerly of Sundrum, in Ayrshire, Scotland. She was trained as a nurse in the Liverpool Infirmary, and afterward studied medicine in Brussels, taking her degree three years ago. After graduation she went to Calcutta and had begun practising, when the Ameer of Afghanistan offered her a fine salary if she would come to Cabul. She accepted the offer, though efforts were made to dissuade her. Since she has become the physician to the royal family she has gone on successfully treating the sick and enlightening the minds of the Ameer and his people, till she has won his full belief in the practice of vaccination; and now the entire population is being vaccinated with pure calf lymph produced close at hand, and a royal decree demands that no one shall escape this salutary proceeding. This has all been effected through the efforts of Dr. Hamilton.—*Woman's Journal.*

Temperance Drinks.—Not long ago attention was called in London to the popularity among tipplers of certain so-called temperance beverages, an analysis of which showed that they contained more alcohol than many straight-out goods in black bottles. The Massachusetts board of health has recently made a similar discovery concerning tonics and bitters, particularly those recommended as "temperance" drinks, in which the percentage of alcohol was found to vary from 13.2 to 41.6.

Long Life and Alcohol.—The secretary of the Order of Rechabites, a total abstinence workingmen's organization in England, has recently made a careful study of the vital statistics of the society as compared with other associations in which abstinence from alcohol is not a feature. He finds that at the age of eighteen the expectation of life is, among the Foresters, 44.74 years; among the Rechabites the expectancy is 50.62 years—a difference in favor of the latter of 5.88 years. Compared with the Oddfellows, the latter's advantage is even greater by 7.75 years. Applied to the whole population, the expectancy at eighteen among abstainers is better by 8.72 years. The mortality of the Foresters at the same age is 0.723 per cent. and of the Rechabites 0.589 per cent. The percentage of the Foresters' death rate to that of the Rechabites at eighteen is as 123 to 100, and at thirty-eight as 189.3 to 100. The conclusions reached by the compiler of these statistics seem to be corroborated by the report of an English life insurance company in which a distinction is made between the abstainers and the non-abstainers among the policy holders. Among the abstainers the expected deaths were 744, while there were only 432, a percentage of 58.06. Among the non-abstainers, the number of deaths looked for was 1,399, and the actual number who died were 1,131, or 80.84 per cent. of the expectancy. These figures are suggestive, yet there is consolation even for the moderate drinkers to learn that nineteen of them out of every hundred live longer than the actuaries' table says they should.

The Fruits of Sanitation in England.—Dr. Parkes recently published some figures showing the saving of life that had been effected in England during the reign of the present queen, through the efforts of sanitarians. He showed that the mortality from small-pox had diminished by ninety-six per cent. in 1891–95, as compared with the mortality in 1838–42. Since 1871–75 there had been a decrease of ninety-five per cent. in the mortality from typhus, and of sixty per cent. from typhoid fever. Since 1861–65 the mortality from scarlet fever had fallen eighty-one per cent. Diphtheria had prevailed very extensively in recent years, and owing to this greater prevalence the mortality was now very much the same as it was thirty years ago, despite the benefits of the new orrhotherapy.

Epidemics or measles and whooping-cough were as common now as when the Queen came to the throne. The mortality from tuberculosis had fallen forty-six per cent., though it was still high. Cancer, on the other hand, would appear to have increased. The deaths from drink were as numerous as they were twenty or thirty years ago. The general effect of improved sanitation was that six hundred thousand persons now reached the age of twenty-one years who would have died before that period sixty years ago. Notwithstanding this great prolongation of life there is no cause, Dr. Parkes thinks, to fear overpopulation, for the birth rate has been getting steadily lower.

Women Students at Berlin.—About two hundred women have been admitted to attend lectures this year at the University of Berlin, after having satisfied the authorities regarding their proficiency. The faculties chosen by them are those of philosophy, medicine, and jurisprudence.

Increase of Crime in Connecticut.—Some statistics recently compiled by Mr. T. D. Wells, secretary of the board of State prison directors, point to a remarkable increase of crime in Connecticut during the past quinquennium. The figures show that, while the convicts in the Wethersfield State prison increased in number only thirty-three during the fifteen years between 1877 and 1892, the increase in the five years since 1892 has been two hundred and three, or sixty-eight per cent. The prison is overcrowded, and twenty-two convicts are waiting in county jails for room in the State institution, the county jails themselves being filled with prisoners.

Almost a Buried-Alive Case.—The gentlemen who are agitating themselves and Europe into a society for the prevention of being buried alive will doubtless be glad to learn of the narrow escape of a New Orleans girl, thirteen years old, who was supposed to have died one day of yellow fever. The necessary certificate of death was given and the undertaker was notified to inter the corpse, the burial of yellow-fever victims in all cases being immediate. The undertaker was unable to go to the house at once and the funeral was delayed. In the afternoon, when final arrangements were made for the interment, the supposed dead girl opened her eyes, and it was found that she was not dead. The report did not say whether death really occurred later, or whether the resuscitation was complete and permanent as regards that particular illness.

Drug Adulteration.—According to a report of the Massachusetts board of health on the adulteration of food and drugs, there is the largest percentage of adulteration in drugs—50.3 per cent.—milk being next with 35.2 per cent., as found in 4,484 samples examined, while in food in general the percentage of adulteration is 11.6. The principal drugs adulterated or below the standard of strength were ether, alcohol, ammonia water and chlorine water, distilled water, calx chlorata, extracts of licorice and nux vomica, powdered opium, compound spirits of ether, spirits of nitrous ether, tincture of iodine, tincture of opium, and mercurial ointment.

The Women's Health Protective Association.—The annual meeting of this active society was held at the Academy of Medicine a few days ago. The election resulted in the choice of the following officers: *President*, Mrs. M. E. Trautman; *Vice-Presidents*—*First*, Mrs. Mary A. Newton, *Second*, Mrs. Esther Herman; *Recording Secretary*, Mrs. Theresa Barcalow; *Corresponding Secretary*, Mrs. M. E. C. Baker; *Treasurer*, Mrs. A. H. Spencer; *Auditor*, Mrs. E. L. Wakeman. In her annual address, the president, Mrs. Trautman, paid a tribute to Mayor Strong, Colonel Waring, and President Wilson, and stated that through their efforts the death rate in this city had been greatly decreased.

Small-Pox in Georgia.—It is reported that thirty counties in Georgia are suffering from a visitation of small-pox, and the silly local quarantines, of which the pernicious effects were seen during the recent yellow-fever scare, are being established. There have been upward of one hundred and fifty cases in Atlanta, and the board of health has adopted the honest course of publishing the number of cases reported daily in order to prevent a panic through the circulation of unwarranted rumors. The effect has, however, been to frighten all the little towns about, and they have quarantined against the city. A dispatch to the *Evening Post* says that compulsory vaccination has had the effect of frightening the country people away from Atlanta, many of them fearing that they will be hunted down on the streets and vaccinated upon the highways. This, of course, has nearly ruined the Christmas trade. Griffin, Rome, Gainesville, Cartersville, and other small cities are talking about quarantining, and the local papers in these and various other towns are advising the people to stay away from the capital. In La Grange it has been ordered a citizen cannot visit Atlanta without getting a permit from the mayor. The disease has also appeared at Rockhill, S. C., the seat of Winthrop College, where there are upward of five hundred young women, and has created great uneasiness. Every doctor in town is busy day and night vaccinating the inhabitants, and the governor has appointed a commission to visit the town and investigate conditions, in order to determine how to avert the threatened visitation.

The Hospital for Scarlet Fever and Diphtheria Patients.—This hospital will be opened on or about December 29, 1897. It is intended for pay patients, and is situated at the foot of East Sixteenth Street, facing the East River. The hospital is a private corporation, controlled by its own board of governors, and is not connected with any other institution. The president of the board of health and one of the health commissioners are *ex-officio* members of the board. Patients may be attended by their own physicians, if it is so desired. Visiting physicians, L. E. Holt, W. H. Katzenbach, George M. Swift, F. M. Crandall, W. K. Draper, R. J. Carlisle. Consulting physicians, E. G. Janeway, A. Jacobi, W. H. Draper, R. H. Derby, F. P. Kinnicutt, A. A. Smith, J. W. Brannan; consulting laryngologist, H. H. Curtis, resident physician, E. L. Dow.

Society Reports.

THE PRACTITIONERS' SOCIETY.

One Hundred and Thirty-Fourth Regular Meeting, Held on Friday, November 5, 1897.

DR. W. GILMAN THOMPSON, PRESIDENT, IN THE CHAIR.

A Case of Carcinoma of the Tonsil was presented by DR. CHARLES MCBURNEY. The patient was a man, forty-seven years old. In October, 1896, he first noticed a soreness of the throat, which did not increase very rapidly, and it was not until January, 1897, that an enlargement of the left tonsil was observed by his physician, who, suspecting syphilis, put the patient on specific treatment, which was continued for several months. The tonsil, however, continued to enlarge and ulcerated, and when the patient came under Dr. McBurney's observation last June it presented quite a large tumor, which was firm to the touch with an ulcerating surface which bled on handling. The disease had also spread to the pillars of the fauces, and crept up to the soft palate and edge of the tongue; it had also invaded the soft tissues on the inner aspect of the angle of the left jaw, although the bone itself was not affected. Microscopic examination proved the growth to be a carcinoma.

Operation: A preliminary tracheotomy was performed, so that the patient could be etherized without interfering with the field of operation, and to allow such tampons in the pharynx as would prevent blood from passing into the trachea and lungs. An incision was then made along the anterior border of the sterno-cleido-mastoid muscle from a point opposite the lobe of the ear to the thyroid cartilage. From the middle of this incision and at a right angle to it another cut was made upward and inward across the body of the jaw. The two triangular flaps were then dissected away, uncovering the submaxillary triangle. The external carotid artery and the facial vein were tied and the dissection was continued down to the internal carotid, which, together with the internal jugular vein and the pneumogastric nerve, were drawn to the outer side. The operation from this time on was comparatively simple. The larynx and trachea were first protected against blood by a sponge pushed to the deepest part of the pharynx. The pharynx was entered in front of the tonsil and the incision carried down behind it, completely removing the organ, together with a wide margin of tissue surrounding it. Besides the entire tonsil, the affected portion of the tongue and soft palate and all the lymphatic glands and connective tissue of the submaxillary triangle were removed; it was also deemed best to remove the left ramus of the jaw, on account of the disease of the soft parts on its inner aspect.

After the operation a splint was inserted in the mouth and left there for a number of days, in order to preserve the relation between the upper and lower jaws. This splint proved to be of little value excepting for a few days. The final result of the operation was remarkably good. For four days following the operation the man was fed by the rectum, and for the next six days the stomach tube was used; by that time the wound had healed sufficiently to permit him to swallow, and he made a rapid, uninterrupted recovery. He has good use of the jaw, and is able to masticate and swallow very satisfactorily.

Dr. McBurney said this operation was performed last July. Within the past few days he had noticed a small, indurated, and rather tender spot just posterior to the line of his incision; he thought it probable that this was a recurrence of the disease. If this patient had been presented for operation a few months earlier, the extent of the operation and the likelihood of recurrence would have been much less.

DR. JOSEPH D. BRYANT, who had seen the patient before the operation, complimented Dr. McBurney on the excellent result obtained. He inquired whether all the glands in the submaxillary triangle had been removed, or whether some had been found unaffected and were left behind.

DR. MCBURNEY said that he had removed all discoverable lymphatic glands and adjacent connective tissue. Some of the glands were very small and apparently healthy.

DR. ROBERT ABBE thought the result was excellent after such an extensive resection. He was surprised at the man's good masticating power.

DR. BRYANT said that about a year ago, after an amputation of the breast for carcinoma, he opened the axilla and there found one gland that was distinctly involved and a number of smaller ones that appeared to be entirely healthy. They were removed, however, and submitted to Dr. Dunham for microscopical examination, who pronounced them carcinomatous.

DR. MCBURNEY said that infection of the lymphatic glands in malignant disease varies in different patients. In some the disease seems to spread like wildfire, while in others it remains stationary after involving a few glands. In a case of carcinoma of the tonsil, which he operated on five years ago, the patient remaining entirely well up to the present time; there were several lymph glands involved, some as large as pigeons' eggs, and adjacent to these were glands which had remained entirely unaffected.

DR. BRYANT said that Dr. McBurney's patient illustrated the statement made by Kocher, that the prognosis in a case of this kind is not always in proportion to the extent of the disease. In other words, some of the best results have occurred in cases in which the disease had progressed to such an extent that an operative procedure was regarded as almost hopeless.

Adjourned Discussion. — The discussion of the paper, "The Clinical Value of the Widal Test," by Dr. Thompson, and the health board's circular, "Separation for Diagnostic Purposes by a New Method of the Typhoid Bacilli from the Stools and Urine in Cases of Typhoid Fever," submitted by Dr. Biggs, adjourned to this meeting, was resumed.

DR. G. L. PEABODY said: "Dr. Thompson has shown that the Widal reaction is obtained in certain cases which prove to be not typhoid fever. As we do not know for how many years after the occurrence of typhoid fever the reaction may not appear, it would be desirable in all such cases to learn if the patients ever had any illness like typhoid at any previous period."

DR. E. G. JANEWAY said that from his standpoint the Widal test had not proven very satisfactory. In a number of cases coming under his observation the test had failed entirely or had responded so late in the course of the disease that it was not required as an aid to diagnosis. To illustrate this he cited the following case: Last spring a young woman had been admitted to the hospital with suspected typhoid fever. The Widal test gave a negative result, and it was not until the patient had a hemorrhage from the bowels that the diagnosis was positively established. During the third week of her illness the test gave the usual typhoid reaction. In the mean time the patient's sister, father, and brother were brought into the hospital, and in all three of these cases the test proved negative. They had come from the same place as the first patient, and a diagnosis of typhoid was promptly made and afterward confirmed by the course of the disease. The speaker said he had seen a number of cases in which the Widal test, made comparatively early

in the course of the disease, had failed to respond. In one of the sixteen cases occurring among the nurses at Mt. Sinai Hospital, the reaction did not appear until convalescence. In regard to the reaction occurring in persons who claim that they have never had typhoid, Dr. Janeway called attention to the fact that this fever sometimes occurs without producing its characteristic symptoms or taking its usual course. He had seen a number of outbreaks in institutions, particularly among young people, when fully one-half of the cases aborted naturally within from three to ten days. The germ and poison of typhoid fever undoubtedly produce in different individuals a disease of very variable duration. In the outbreak of typhoid at Princeton College, many of the cases did not fully develop. The same is true of the epidemics that occurred at the Deaf and Dumb Asylum and at the Catholic Orphanage in this city. Only about one-half the patients in these institutions developed typical typhoid; in the rest the disease aborted.

Dr. F. P. Kinnicutt asked Dr. Janeway whether he thought the term "aborted" a good one to apply to those cases in which the disease never fully develops. Why should we not rather ascribe their brief duration to the fact that the infection is very slight?

Dr. Janeway replied that such mild cases may be due to the fact that the individual infected has sufficient resisting power to prevent the germs from growing—in other words, that he is less susceptible to the germs than are others; or they may be attributed to a mild degree of infection or a loss of infective power in the germs themselves. We see this same varying degree of infection or susceptibility occurring in the course of epidemics of other diseases. The speaker said that while he was an interne at Bellevue many years ago, an epidemic of typhus fever occurred, and both he and his hospital colleague were continually exposed to infection. Both were taken sick at the same time with the same symptoms; Dr. Janeway said he recovered after two or three days' illness, while his colleague died of typhus and his name is among the list of martyrs on the tablet at Bellevue.

Dr. Andrew H. Smith said he thought it quite possible that many cases of typhoid pass unrecognized. We see many cases of "walking typhoid," in the majority of which the patient is ultimately obliged to take to his bed, but a certain proportion recover without progressing further. The patients do not feel well, and still they are not prostrated to any marked degree. Doubtless the blood of such patients, who never knew they had typhoid, would react to the Widal test. The speaker mentioned the case of a girl who was admitted to the Presbyterian Hospital last winter with typical typhoid, which ran its usual course. In that case the Widal test was given five or six trials, at intervals of two or three days, but it was not until the fourth week that the usual reaction was obtained.

Dr. H. M. Biggs said he wished to emphasize the fact that at the laboratory of the New York health department, in every case when a definite reaction was produced in a dilution of 1 to 20, the reaction taking place within a time limit of ten minutes, it proved to be typhoid fever. The experience of the department now covered between five hundred and six hundred cases, and in every instance when the reaction was produced in the dilution of 1 to 20 the clinical results were entirely harmonious with the laboratory findings. The fact should not be lost sight of that the Widal test is quantitative and not qualitative. More than this, we must revise our ideas somewhat as to what typhoid fever is. If we confine the term to a disease in which there are intestinal lesions, we must also take into consideration the fact that there are typhoid infections in which the intestines escape. Cases of the latter class will give the Widal reaction, and in some of them the urine will contain typhoid bacilli.

Dr. W. Gilman Thompson said the object of the original paper on this subject was to discuss the clinical value of the Widal test. The speaker said he quite agreed with Dr. Biggs that the test should be a quantitative as well as a qualitative one. As regards the accuracy of the test, a number of cases are on record in which the reaction was obtained in a dilution of 1 to 20, and even 1 to 30, in patients who had not typhoid fever and never had had it. The possibility suggested by Dr. Peabody that some of these cases in which the reaction occurred may have had typhoid years before is quite true, but that does not render the test any less uncertain at the bedside. Many hospital patients are unable to give a satisfactory history. The speaker said he had reported two cases in which the reaction was obtained only during the relapse, the results of the test during the original disease being entirely negative.

Dr. Kinnicutt asked in regard to the frequency with which typhoid attacks the same person a second time. He thought this immunity against a second infection more apparent than real, and inquired whether it was due as much to the insusceptibility of the tissues or blood of the individual as to the improbability of his being exposed twice to the contagion. It is recognized that a second attack of typhoid fever is not uncommon in those who are exposed to the infection. He mentioned one case in which the patient had had three attacks.

Dr. Janeway said he had seen a second attack occur within three years after the original attack.

Dr. Peabody said we know positively that persons who have had syphilis or any of a number of other diseases are not susceptible to a second attack. He did not see why the same rule may not apply, at least to a certain degree, to typhoid fever.

Dr. McBurney said he had always been led to believe that many are frequently exposed to typhoid fever, and that comparatively few are liable to take it.

Dr. Janeway said that had also been his idea.

Dr. Beverley Robinson inquired whether people take diphtheria twice.

Dr. J. W. Brannan said he had seen a number of patients at the Willard Parker Hospital who had had at least two attacks of diphtheria, with an interval of only three months in some cases. The second attack may be very severe and even fatal.

Dr. Biggs said there is no doubt that diphtheria may occur more than once in the same individual. It is also true that one attack affords comparative immunity, and that an attack which runs its course affords much greater immunity than one which is cut short by the administration of diphtheria antitoxin. It is the difference between active and passive immunity.

Is Not the Mortality from Surgical Disease Unnecessarily Large?—Dr. Charles McBurney read this paper (see page 881).

Dr. V. P. Gibney said he quite agreed with the writer of the paper that unnecessary delays are often accountable for the bad results of an operation. It is certainly so in the department of surgery in which he is especially interested. The responsibility for such delays is often difficult to settle. In joint surgery it is a well-established fact that in some instances an efficient protection to the affected joint is conducive to an excellent result, and yet there are cases in which the lesion is so severe and extensive that no amount of protection we can give that joint will prove of any benefit to the patient. It is in those cases that we meet with stumbling-blocks; it is here that the extreme conservatives and the radicals clash. We all know there are exceptional cases in which nature has done extraordinary work, and such a patient is

brought forward as an example of conservative treatment. We do not hear so much of the bad results caused by delay, the amyloid degeneration, and other various complications that may set in, when operative interference is out of the question. In a diseased hip-joint, for instance, when the head, neck, and shaft of the bone are involved, we feel that amputation is the best thing, and yet we naturally postpone it until the patient is *in extremis*, and then it does no good.

Dr. Joseph D. Bryant said that the vulnerability of the tissues in different individuals, which was referred to by Dr. McBurney in connection with the time limit for operating in strangulated hernia, is subject to modification by so many extraneous conditions—such as the age of the patient, his previous health, etc.—that it must be regarded as a very uncertain factor. He saw no reason why prompt action should not be taken, irrespective of any lack of knowledge regarding the vulnerability of the tissues. When we come to the question of settling the responsibility for delaying an operation, the speaker thought it rested, first, with the patient; second, with the patient's friends; third, with the physician; and finally and not infrequently with the surgeon himself. How often, for example, will a woman who is suffering from a tumor of the breast keep the knowledge of it to herself as long as possible, and then perhaps confide it to a friend who will be equally uncommunicative? For sentimental reasons the patient may refuse to undergo an examination by a physician, or, even if such an examination is made and the physician suspects malignant disease, he may keep the suspicion to himself as long as possible. In the majority of cases the delay is probably due to the unwillingness of any one who is afflicted to recognize that fact. That feeling is very natural. Many physicians even are averse to having their urine examined or the heart listened to for fear that they may learn an unpleasant truth. Dr. Bryant said he knew of no way by which anything could be accomplished in this matter, unless it would be to instruct those who are in good health and inculcate in them the idea that when any abnormal condition of health appears they shall promptly and earnestly insist on being told what is the matter, and, if the case demands it, that the surgeon shall be called at the earliest possible moment to assist in determining whether his active services are necessary.

Dr. Peabody said he was not quite willing to plead guilty to the indictment that physicians in general cooperate with patients in their fancied security, and lull them gradually into the arms of death. He was willing to admit, however, that a certain number of physicians do delay unwarrantably in this manner. One explanation for this delay may probably often be found in the prejudice which exists against the surgeon in the mind of the patient. While the physician is often welcome in many households, the surgeon is looked upon as a necessary evil, to be averted or postponed if possible. The most sensible view to take is that in any case in which the services of a surgeon may become necessary he should be summoned as soon as possible. He should have an opportunity to see the patient at the earliest possible moment, and if it is then desirable to postpone operative interference the patient should remain under their joint observation. The physician should not take the reponsibility alone of postponing surgical interference in a grave case.

Dr. Janeway said that many elements enter into the question of delaying surgical operations. He has found that one of the most potent causes of delay is the knowledge possessed by the patient that some friend or relative had undergone a similar operation and died. Many refuse to be operated on, or delay the operation as long as possible, because they know of similar cases which were operated on and resulted unfortunately. Another cause for the delay in many cases is the natural desire on the part of the patients' friends to keep them in ignorance of the real nature of their ailment. Some surgeons occasionally make the statement to the patient that unless an operation is performed he cannot recover. Such prophecies sometimes prove false, and are apt to give rise to a suspicion in the minds of the laity that the surgeon is anxious to operate.

Dr. Robert Abbe said that in considering the present surgical mortality rate we should bear in mind the fact that the amount and class of surgery done twenty years ago cannot be compared with that done to-day. The class of cases which still contributes most to the large mortality is that in which there has been too much delay before operation—the neglected cases. These patients, when they come to the surgeon, are in a practically hopeless condition. They seem so at the time to the surgeon; yet occasionally one such patient survives operation, and with that fact in mind the surgeon operates. These help to swell the surgical mortality—cases, nineteen out of twenty of which should never have been operated on. Hence we should study to learn the limit of possible surgical relief. Take, for example, general septic peritonitis; we all know that an operation for this condition when very far advanced usually proves unavailing, and yet very grave cases have been reported as saved, in a few instances. Dr. Abbe said he had studied a large number of these cases, and found that in every instance when albuminuria was present and of very recent onset the case proved fatal. The cases which recovered were those in which there was no albuminuria. If a case of acute septic peritonitis has developed a septic albuminuria from a choking of the renal vessels, the case is hopeless. One important method, therefore, by which the surgical mortality can be largely reduced, is to refuse to operate in what appear to be hopeless cases when more careful study proves operation to be unjustifiable. The occasional successes and falsely reported cases in literature should not be permitted to lure the surgeon on. The occasional refusal of the surgeon to interfere, when his intelligence and conscience justify him in doing so, will ultimately command a larger number of cases brought to him in the incipiency of disease, and thus finally reduce the mortality credited to operations.

Dr. A. H. Smith said that last summer he saw a case of carcinoma of the stomach which he regarded as absolutely hopeless, and so reported to the family. A surgeon who had been highly recommended to the family was called, with the consent of Dr. Smith, merely to satisfy the friends; but to the amazement of Dr. Smith an operation was advised. He then insisted that the family should select another surgeon before proceeding. They did so, and his opinion coincided with that of Dr. Smith. The patient died a few weeks later.

Dr. Beverley Robinson said that, speaking as a general practitioner, he usually prefers to refer his operative cases to a general surgeon rather than to a specialist. The latter, as a rule, does not operate any better than the general surgeon, and he is often led to do an operation which the general surgeon would not do. In all cases which demand it, the opinion of the surgeon should be obtained as soon as possible, providing he is a man who has achieved a position in his profession which has rendered him conservative, so that he will refuse to undertake an unnecessary or overhazardous operation.

Dr. McBurney, in closing the discussion, said that, while the surgical mortality can be easily reduced by refusing to operate on hopeless cases, there is another and better way, and that is to have those patients who are now brought to the surgeon too late

brought in time to be operated on and saved. He agreed with Dr. Bryant that the time limit can never be accurately defined, but in many cases there is a time limit which can be scientifically discussed by the physician and the surgeon. In strangulated hernia, for example, there is a time during which the patient can be successfully operated upon and after which he cannot. If this question of the time limit should receive more serious consideration, we would not so often hear said: "I do not see why we should not wait until to-morrow." In reply to a question, Dr. McBurney said that he never consents to operate unless he believes that the patient may benefit by the operation. The surgeon should never allow himself to be influenced by sentimental reasons, if it is his deliberate opinion that the operation cannot possibly do good.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, October 27, 1897.

WARREN COLEMAN, M.D., VICE-PRESIDENT, IN THE CHAIR.

Tuberculous Lymph Nodes from a Case of Chronic Bronchitis and Emphysema.—DR. J. H. LARKIN exhibited under the microscope a section of a lymph node taken from the root of the lung of a man, forty-five years of age, who had died of chronic bronchitis and emphysema. There had been no other tuberculous inflammation in the body. The autopsy showed intense venous congestion of the kidney and a nutmeg liver, with a few adenomata scattered throughout the liver. Along the root of the lung the lymph nodes were very much swollen. Around the pericardium they were also much swollen, some of them being as large as a hazelnut. A thorough search was made in the lungs and other organs for tuberculous foci, but none was found. On cutting open the lymph nodes they were found to be nearly three-fourths cheesy, the microscope revealing diffuse areas of cheesy degeneration. Dr. Larkin said that he had ground up some of these cheesy nodes with decinormal salt solution, and had then injected two cubic centimetres of this fluid into each of three guinea-pigs. After three weeks one died, but the autopsy was negative. The other two were killed at the end of eight weeks, and in these animals the post-mesenteric glands were very large and cheesy, and there were several small foci in the liver and spleen. Some pseudo-tubercles were found in the lungs. He had collected the lymph nodes from the guinea-pigs, and had made sections of these also. One of these sections from the post-mesenteric glands was also shown under the microscope, stained for tubercle bacilli. The specimen exhibited several bacilli, which corresponded morphologically with tubercle bacilli. The specimens were presented because of the interest attaching to their occurrence in a case in which death had been due to chronic bronchitis and emphysema, with no other evidences of tuberculosis in the body. It would seem from the findings in this case that the lymph nodes served not only as storehouses for noxious products and various kinds of pigment, but also as storehouses for bacteria—not only the ordinary bacteria always found in the trachea, but for pathogenic bacteria. The case also illustrated one of the ways in which a person might become infected with the tubercle bacilli, *i.e.*, the bacilli first finding a lodgement in the lymph nodes, and afterward, probably as a result of some exposure to some weakening influence, being distributed to the body at large.

DR. HENRY HEIMAN said that it was interesting to recall in this connection that Billroth thought he had observed tuberculous meningitis following operations on tuberculous glands of the neck.

DR. WARREN COLEMAN asked Dr. Larkin what was his view of the ordinary channel of infection in the lung, whether through the smaller bronchial tubes or first through the lymph nodes. He had in mind those foci of infection so frequently met with at the apex of the lung.

DR. LARKIN said he thought a large dose of tubercle bacilli might get in through the bronchi without passing through the lymphatic channel, and might there set up a diffuse tuberculous pneumonia. In other cases a few tubercle bacilli might be lodged in the lymph nodes and remain quiescent for a longer or shorter period of time. The anatomists had possibly thrown a little light upon this matter by referring to the unequal angles of divergence of the bronchi from the trachea. This, of course, was only an attempt to explain why tuberculous deposits occurred by preference in the apices of the lungs, but did not explain the simultaneous involvement of both apices.

DR. COLEMAN said that a most plausible theory in connection with the location of these processes at the apex, and of the channel through which the bacilli passed, was that which assumed that these organisms were taken up by phagocytes and carried into the lymph channels, and that, instead of remaining in the glands at the base of the lung, they passed through these for some unknown reason, and were then carried through the lymph channels to the apex.

DR. LARKIN said that in his case undoubtedly the bacilli had been seized by the phagocytes and had gotten only as far as the nodes; but if the tubercle bacilli did get farther it was hard to understand why the apices should be selected by preference.

DR. JAMES EWING said that he could not see how the lymph nodes at the base of the lung could play a part in tuberculosis. All experimental studies regarding the reasons for the lodgement of tubercle bacilli in the apices by preference had led to the conclusion that it depended upon the character of the blood supply there, and upon mechanical conditions affecting the aeration of those parts of the lung.

DR. COLEMAN said that the statement just made about the circulation at the apex might explain the lodgement of organisms there rather than in other parts. Some years ago he had made some incomplete experiments bearing on this question. They consisted in making an animal inhale lampblack, and also in injecting this lampblack into the pleural sac. It was found in the course of half an hour that these pigment granules had been taken up from the trachea and large bronchial tubes, and had been distributed through the lymph nodes under the pleura and over the whole surface of the lung. These experiments had influenced him largely in arriving at the opinion already expressed.

DR. LARKIN said that in autopsies on cases not supposed to be tuberculous the lymph nodes received very little consideration, yet a large percentage of these lymph nodes in patients dying of diseases other than tuberculosis contained foci of tuberculous inflammation. The case from which his specimen had been taken was only one of a series of about thirty autopsies, in which the lymph nodes had been collected from the roots of the lungs which contained ordinary cheesy areas.

DR. COLEMAN said that an English observer had recently promulgated the theory that tuberculosis, when in a condition to be recognized by the physical signs, was really in its second stage, and that the infection not infrequently gained an entrance to the body through the alimentary tract and mesenteric glands.

Autopsy Made Months after Death.—DR. JAMES EWING presented the viscera from a case on which an

autopsy had been made five months and eight days after death. He was enabled to present this interesting material through the kindness of Dr. A. Jacobi, whom he had assisted at the autopsy. The clinical diagnosis had been tonsillitis and nasopharyngeal hemorrhage; the anatomical diagnosis was peritonsillar abscess and retropharyngeal abscess, with rupture of the right internal carotid artery. An embalming fluid of unknown composition had been injected into the median basilic vein. The body had been interred in dry gravel in a wooden casket, surrounded by the usual outer box. The body itself was rigid and the skin much desiccated, but the features were surprisingly well preserved. There was a large abscess cavity around the tonsil and behind the pharynx, and about one and one-half centimetres above the origin of the internal carotid artery was an irregular opening, five centimetres in circumference, communicating with this cavity. The viscera were so desiccated as to be tough and almost cartilaginous. The spleen and kidneys were remarkably well preserved, and, strangely enough, with the ordinary methyl blue stain it was possible to demonstrate the presence of numerous colonies of cocci around the wall of the abscess cavity.

Dr. Coleman said that in the only case of this kind that he had seen the sections of the kidney were in as good condition as was the specimen just presented, and the hardening was almost as perfect as if it had been done in the laboratory on small pieces of tissue.

Dr. Larkin said that the most approved method of embalming at the present time seemed to consist in puncturing the different viscera with a trocar, instead of injecting the fluid into the vessels. Great care was taken to extract as much blood as possible.

Dr. Ewing said that in the autopsy he had reported there had been no punctures in the skin or viscera.

Preservative Injections in the Intestine.—Dr. Henry Heiman said that about one years ago Dr. Henry Power had conducted certain experiments regarding the value of formalin as a preservative in the intestine. Dr. Heiman said that he had varied these experiments by injecting two to five per cent. solutions of formalin into the rectum of five children who had suffered from gastro-enteritis. For comparison he had examined three cases of gastro-enteritis in which no formalin solution had been injected. The injection had been made immediately after death. It was found that by this early use of the formalin injections the mucous membrane was at once fixed for hardening purposes, thus preserving more epithelium and giving a more clearly defined picture. The autopsy could be made at the usual time. He had used an ordinary irrigator, and had found by experiment that the correct pressure was obtained by elevating the reservoir about six or eight inches only. His plan was to sew the nozzle into the rectum and allow the fluid to run in for some time, twelve to twenty-four hours in some cases. The fluid would reach half-way up the ascending colon, and even the parts in close apposition to those injected became hardened. Specimens were exhibited under the microscope showing the gut in cases so treated, and also those not preserved in this way. The solution used was a 2.5-per-cent. solution, made from the ordinary commercial (40 per-cent.) formalin solution. It did not produce the shrinkage that other hardening-fluids did.

Dr. Ewing said that he had followed the experiments of both Dr. Power and Dr. Heiman, and the results were certainly a marked improvement on those of the ordinary method of leaving the body until permission had been obtained for an autopsy. The mucous membrane, muscular coat, peritoneum, etc.—in fact, all except the superficial epithelium—were very well preserved. It did seem, however, that the injection fluid did remove some of the superficial epithelium; hence the specimens were not so perfect as those obtained from bodies in which the autopsy was made immediately after death, as after electrocutions. The method nevertheless was to be highly recommended for ordinary cases when one desired to examine the intestinal epithelium.

Dr. Heiman said that this method might be employed in diseases of the intestine. He wished here to acknowledge his indebtedness to Dr. Rowland G. Freeman for the material experimented upon.

Dr. Coleman said that the method had been applied recently at the Charity Hospital in cases of gastric carcinoma for the purpose of preserving the gastric mucous membrane for subsequent examination. The result should be even better than in the intestine, because it would stop the self-digestion of the stomach.

Dr. Larkin said that he looked upon formalin as a very tricky preservative, and it was unfortunate that experiments in this direction had not been made with some other preservative as, for example, Müller's fluid. If formalin was used alone, the effect on the staining properties of cells was not so good as if a combination of formalin with alcohol or Müller's fluid was used.

Dr. Coleman remarked that it was generally admitted now that formalin caused swelling of the cell protoplasm, and hence destroyed the intimate structure of the cells to some extent.

Dr. Heiman said that when formalin was added to ordinary chest serum he had found that it did not coagulate it. Wassermann had stated that the addition of formalin to serum prevented its coagulating when heated, and he had found that if egg albumen was placed under the same cover with formalin it would become coagulated after a time. It was evident that formalin acted very differently on different albumins.

Dr. Coleman said that one of the chief virtues of formalin was that it would coagulate the liquid in the alveoli in a case of pulmonary œdema, so that the condition might be demonstrated to students. He had not been able to do this with any other hardening agent.

The society then adjourned.

Correspondence.

OUR LONDON LETTER.

MEETING OF GENERAL MEDICAL COUNCIL, SIR R. QUAIN'S HEALTH, EXIT THE UNQUALIFIED ASSISTANT, MIDWIVES AGAIN, NEW MEMBERS—DR. RENTOUL EXPLAINS OR EXCUSES HIS RESIGNATION—MEDICAL SOCIETY—GLASGOW INFIRMARY—EDINBURGH—TYPHOID—UNIVERSITY PROPOSAL—CENTRAL HOSPITAL COUNCIL—DEATH OF DR. HEDDLE.

The General Medical Council met on Tuesday. The venerable president, Sir Richard Quain, was unable to be present, although his health has materially improved. It is said by those who see him that his mind is unclouded and alert. The letter he sent to the council, sketching the course of business and the subjects coming forward for discussion, shows how thoroughly he still grasps the details of the council's work and duty. This is the first time for thirty-four years that Sir R. Quain has been absent from the council, and regret was naturally expressed by his colleagues, who, on his recommendation, requested the chairman of the business committee, Sir William Turner, to act as his substitute.

The most important act of the session was the decision of the council no longer to tolerate unqualified

assistants. Notice is to be given that their employment renders practitioners liable to be removed from the register, on a charge of "infamous conduct in a professional respect." There was a difference of opinion as to how long notice should be given, but the council has for so long distinctly denounced and punished "covering" that the new departure is only a step in advance. It is strange the determination has been so long delayed. Students in their last year may be utilized as "pupils" for a period of six months.

The midwives question again came up for discussion on the report of last year's committee on the subject, which recommended the appointment of a further committee to report on any bill which may be introduced into Parliament next year. A resolution to the effect that midwifery cannot be safely practised by those who are not fully qualified in medicine, surgery, and midwifery, after a good deal of discussion was laid aside, and it was eventually resolved that it is inexpedient to adopt an abstract resolution which might prevent full consideration of any future bill submitted by the government.

Dr. William Moore was obliged by ill health to resign his seat in the council, to the regret of his colleagues. His successor will be appointed by the privy council.

Sir C. Nixon took his seat as the new member for the Royal University, and Mr. Horsley as the newly elected representative of the registered practitioners, in the place of Dr. R. R. Rentoul. Dr. Rentoul has now issued his explanation of his resignation of his seat. It resolves itself into dissatisfaction with the profession for the feeble support accorded him in his schemes of reform, and the expenses he incurred. Undoubtedly the profession is extremely difficult to rouse. Its apathy must appear to so zealous a reformer as Dr. Rentoul almost as bad as opposition. It is easy, therefore, to understand his feelings. But there is something to be said on the other side. Having sent Dr. Rentoul to the council, we felt our affairs were safe in his hands, that he would do all that was possible in the circumstances. But it was a mistake to send him. His zeal burns within him, and no wonder the stolid opposition of the council turned that zeal to impatience. Then the charge of deserting him pecuniarily is too true. He is still nearly £100 out of pocket by his experience. It is a pity, but reformers have usually experienced similar discouragements.

Then some of Dr. Rentoul's views are not acceptable to many. He proposes that practitioners should be required to pay £1 a year to the council, to enable it to do more work. Now the authority to practise has always been paid for once for all to each licensing body, and so overcrowded is the profession that there are hundreds to whom £1 a year would be a serious item. They would neglect to pay it, be left out of the register, and so be lost to all control, and it would be more difficult than ever to distinguish between qualified and unqualified men. Again, the council has hitherto given little satisfaction. For thirty years it has gone on its way and stolidly refused to reform. Would it be wise to add another £30,000 a year to the £10,000 it already spends in doing next to nothing? Even to please Dr. Rentoul, it can scarcely be expected we should care thus lavishly to endow a body which he himself declares must be radically reformed. Again, he wants an increase in the direct representatives, so as to overcome the resistance of the corporations. This will never be granted, as the government would so far enlarge the council, and the addition of one or two more would have no effect. Besides, direct representation has been shown to be a failure, and there is no hope of reform being furthered by its means. The only effective plan would be to reform the corporations themselves.

The Medical Society's meeting on Monday opened with a paper by Dr. Samuel West, on pyo-pneumothorax. He gave the history of a case of several months' duration, which terminated in recovery about seven months after free incision. Dr. West deprecated the too common practice of leaving such cases to expectancy, and opposed the notion that operation only hastened the end, as well as the frequently expressed idea that pneumothorax tended to prevent tuberculosis. If pyo-pneumothorax were to be treated as empyema now is, better results would follow. He advised operation in the early stage when the symptoms were urgent or paracentesis failed; later on when the effusion was purulent or sero-purulent.

Dr. D. H. Hall related several cases in which the results of operation were disastrous, owing to the lung not expanding. Though when the lung was healthy operation might give good results, when the lung was diseased this seldom occurred. Dr. Thorowgood did not advise operation, except when urgent symptoms appeared.

Mr. Sheild mentioned a case complicated with gangrene of the lung, followed by recovery after operation. He remarked on the risk of anæsthesia in such cases, and recommended the position of the patient to be such as to permit free lung play. Rapidity of operation and no fixed dressing for a day or two were also important.

Dr. Bowles mentioned two published cases of "death under chloroform," which he believed were caused by the patient inhaling pus when turned over for making the incision.

Mr. S. Eccles then read a paper on the "Mechano-Therapy of Movable Kidney." He had had twenty-one cases since 1892, of which sixteen were treated by rest and abdominal massage for from two to eight weeks. He urged that treatment of this kind should be fairly tried before operation could be recommended, supporting this view by details of cases which were greatly improved.

Mr. Freyer said he had never seen a case benefited by massage or mechanical methods, although he had seen one in which all the fat around the kidney had disappeared from massage. Dr. Sansom said patients should not be told they had movable kidneys. Dr. Hall had known a case so diagnosed cured by a pad and bandage.

The misunderstanding at the Western Infirmary of Glasgow threatens to end in a deadlock or a scandal. Already a number of letters have appeared in the local papers. A general meeting was held yesterday, but I hear no result was arrived at.

At the Edinburgh Royal Infirmary a great improvement has been carried out. The surgical out-patient department had been completely separated from the corridors and side rooms attached to the wards, where visitors have often been amazed to find patients waiting, for out-patients may often be inadvertently purveyors of infectious disease.

The typhoid epidemics have been less fatal this week, but some new cases occurring suffice to show they are not yet over.

A general committee has been formed to promote the establishment of the proposed University of Westminster.

The first meeting of the delegates of the twelve teaching hospitals, calling themselves "The Central Hospital Council," has been held. Whether the other hospitals will recognize the right of the larger to dictate to the smaller remains to be seen.

The death is announced of Dr. M. F. Heddle, F.R.S.E., M.D., emeritus professor of chemistry in St. Andrew's University.

THE ROUTE TO CAMDEN, S. C.

To the Editor of the Medical Record.

Sir: In the Medical Record of November 27th, in the mention of the winter health resorts of the Carolinas, I think some injustice is unintentionally done to Camden, which is a very popular resort. It is said in the article in question that to reach Camden you go to Charleston, S. C., and thence by rail to Camden. This is a very roundabout way, and very inconvenient. The way to get to Camden is to come to Rock Hill, S. C., by the Southern, and thence by the O. R. & C. (good connection) to Camden, it being only twenty-four hours' ride from New York by this route.

Knowing your desire for exactness, I write this correction. John W. Corbett, M.D.

Camden, S. C., November 29th.

"IN THOSE DAYS THERE WERE DEVILS" —AND NOW.

To the Editor of the Medical Record.

Sir: In your issue of December 4th Dr. James Weir, Jr., tells interestingly how "In Those Days There Were Devils." The same issue contains proof that in these days and your printing-office the devil is at his ancient tricks.

Having written to you lately correcting a misstatement in the lay press of the results of medical prosecutions conducted by me, and having also suggested that it would be agreeable to me if you should see fit to correct the error as a matter of news without use of my name, I find to my terror that the printer, proofreader, or more probably the "devil," has honored me with the medical degree, power to confer which *causa honoris* was abolished in this State some years ago, and has made me *prima facie* guilty of "appending the letters M.D." to my name; for which misdemeanor, if convicted of it, a considerable fine might be imposed upon me. Pray correct this mistake in any fashion you see fit, or, failing to do so, be prepared, if I am arraigned in court for false use of the sacred letters, to come and testify that they were not appended to my name by me, but by the Medical Record, which has not yet renounced the devil and his works.

By dropping the figure "2," the printer has also regulated the practice of medicine by chapter 5 instead of chapter 25 of the general laws.

W. A. Purrington.

THE ABUSE OF MEDICAL DISPENSARIES.

To the Editor of the Medical Record.

Sir: Permit me to contribute my mite to the literature of dispensary abuse. If one is to judge from the various articles that appear periodically in the medical journals, expressing opinions as regards the causes of dispensary abuses, there must be a great commotion in the medical profession; the nice round incomes must have been reduced to such a low figure that silence is not only not gold but not even copper.

I shall not attempt to mention the various causes given by an army of contributors; space will not permit it. What I want to say is this: After so much has been said and written on the subject, not one person, as far as I know, ever mentioned the primary cause, according to my opinion, of all this charity abuse, reduced practitioners' incomes, increased quackery, and even some of the suicides of practitioners which are attributable to the same cause—all symptoms of one particular affection.

This dispensary epidemic is not limited only to the cities of the East; its ravages are spreading like a prairie fire all over the country—east, west, north, and south.

Now to come to the point. The medical profession, like any other, is subject to the simple law of economics of supply and demand. The proportion of medical men in this country is in inverse ratio to the population. But, ignoring this simple rule, medical colleges spring up like magic in every hamlet of the country. These new-born so-called institutions of learning are naturally struggling to maintain themselves; an unhealthy competition is the result. Dispensaries are created to supply material for teacher and student. The worthiness of the applicant for free treatment is overlooked. The teacher is proud to add professor to his title, and sometimes with it a temporary increase of his fee and income. The ambition of adding the title of professor to the usual M.D. seems to be quite epidemic in our part of the country. To accomplish this an "institution" is started in some two-story frame building and extensively advertised. Students "must" be procured; the institution "must be maintained"! Is it any wonder that such a degenerate parentage gives birth to a diseased progeny? These are, no doubt, the "Youngbloods" of Dr. T. J. Hillis' article. Quackery and charlatanism are their only art and science. The more able and honest, for the lack of compensatory practice, offer themselves gratis to hospitals and other charitable institutions. The people's respect for the medical profession is lessened, and with it the income of the latter. Many of the medical institutions of this country have no other excuse for their existence but some doctors wanting to be professors.

These are, in my opinion, the causes that lead to dispensary abuse, increased poverty, and decreased respect for the medical profession.

Berthold Weisenberg, M.D.

41 J New Avenue, Milwaukee, Wis.

THE TWENTY-FIVE-CENT DOCTOR.

To the Editor of the Medical Record.

Sir: The cohesion of the organization of society is the measure of its civilization. "The wild man of Borneo" knows not a chief, but sixty millions of Americans, in greater or less degree, hold their President in reverence. Individualism is barbarism, is anarchy, while the union of like or congenial forces, be they bad or good, in the long run trends toward progress. Somewhat through invention, more through wise legislation, but most through their organization, have manual labor and the mechanical trades grown into the respect and dignity that they hold to-day. Combinations of capitalists crystallize the effort of individuals into profits for themselves, while in turn the union of those individuals that produce these profits forces the capitalists to a division of these profits, to the benefit of the private condition of each. The peoples that are born with the genius for unity of action are conquerors. The gay, the brilliant, the iridescent Celt, by the sluggish Saxon is ever borne down.

That which has, more than anything else, made modern medicine what it is, had its origin when the quacks, the charlatans, and the empirics of the long ago, for their own betterment formed a sort of Gypsy union, out of which has grown what we are pleased to call "our code of ethics."

"*À propos* of nothing," I have never seen a physician break through that code with any lasting benefit to himself, for in the process he is sure so to rend the phylacteries of his own medical reputation that his last estate is worse than his first.

The true meaning of the code is that the physician

should not do anything to degrade himself, to degrade his brother practitioner, or, what is of far more moment, degrade the dignity of his profession.

Most nobly is the MEDICAL RECORD warring against the abuses that have crept into the profession in the large cities, but we in the country and country towns "have troubles of our own." In every country village of a thousand or more inhabitants will be found two or three circles of men banded together in some order, as Red Men, or Foresters, or under some similar title. These fraternal orders put the medical attendance of their members up at auction to the lowest bidder, or else try to make ridiculous terms with whomever they may. In many places the remuneration for this work is $1 a year per member of the society.

Another abuse is that in this same class of towns are growing up what are called "medical clubs." These admit to membership men and women, old and young alike, anybody that will pay the pittance, which is usually about $1.25 per annum.

The next grievance on the list is the cheap insurance business. There are a number of companies that pay 25 and 50 cents for some form of examinations; and these companies do their largest business among the classes that are able to pay decent medical fees. Only recently I was almost entrapped into lending myself as an examiner for one of these concerns. An agent came to me and wanted me to make out an application to be appointed an examiner. I asked him if it was a twenty-five-cent company, and he replied in the negative. After the application was made out, he said that for a simple "inspection," whatever that may mean, the company allowed twenty-five cents, and for something else in the way of examination fifty cents. I tore up the application and told the agent to get out of the hole the carpenter left as quick as he could. As he took his hat he snapped: "There's lots of docks older and smarter than you be that's more'n glad of the business." Ay, there is the rub—"Glad of the business." I informed him that I was not a twenty-five-cent doctor, at any rate.

As it fell out, there now drives eight miles from another village a doctor "older than you be," to attend to this company's precious interests. However, I give the man credit for being thoughtless about the matter, as he seems to be a very decent sort of a fellow.

The last and meanest degradation of them all is the acceptance of medical practice farmed out for so much a year by rural town boards. The chief occupation of these boards is to cut down all town expenses except their own fees, at least until the next election. Under my observation is a town containing a rural and village population of two thousand. This township covers an area of about ten miles square. The town board has all the poor in this town medically attended for $30 a year. This is blank, black barbarism. The idea that, because a human being has committed the heinous crime of being poor, in the hour of his illness and distress he must accept the medical services of a person that is willing to receive for them whatever a parsimonious town board of hayseeds is pleased to grant! It is sickening!

Is there any remedy for these evils? To a degree I believe there is. Public opinion is but the aggregate of private opinions. Public evils must be remedied by public means. Let the State society appoint a man from each county society to interview the physicians in each county that are engaged in this nefarious business. If they will consent, let them, with the physicians who are above degrading themselves, sign an agreement that they will outlaw the evils that have been mentioned. Then let the names of those holding the degree of M.D. that will not sign the agreement be reported to both the State and county societies. At stated intervals have a list publicly printed and circulated, both by the State and county societies, of those who are doing an illegitimate business.

The remedy is weak, you say; it is. But it seems the best we have. Many that would not sign the contract would become out-and-out quacks. Let them go. Better a dozen enemies outside the walls than a single traitor within.

To me the greatest marvel in the world is the brainlessness of man. Let those who believe in the union of ourselves for our own protection, whenever fitting time presents, act as propagandists among those who are destroying what little of unity there is. Tell them, as they degrade our services by offering them to the cheapest bidder, they, Hibernian-like, are sawing off the limb on which they perch. Tell them that in this crowded world there is no room for the individual unless he stands in unity with those about him; tell them that they are undermining the monument of success which they hope to climb.

W. C. SEBRING, M.D.

PINE BUSH, ORANGE COUNTY, N. Y.

THE DISPENSARY ABUSE OF TWENTY YEARS AGO.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: One feature of the correction of the abuses of medical charities has not been sufficiently brought out in the recent consideration of this matter.

The managers of dispensaries have too generally been spoken of as wholly responsible for the evils which exist, and entirely opposed to any measures looking to their amelioration or suppression.

Just twenty years ago this month, a committee of gentlemen was appointed by the State board of charities to "make inquiries as to the misuse of the benefits of the medical charities of the city." (See first report of committee to State board of charities.)

This committee made its report on May 6, 1878, and stated that they have confined their inquiries to the "general dispensaries, and have submitted the answers of these dispensaries *verbatim*."

This committee was composed of Drs. Joseph W. Patterson, C. R. Agnew, Henry E. Pellew, Edward Oothout, John Sherwood.

The answers elicited by these gentlemen twenty years ago are not only very interesting reading now, but prove very conclusively that the dispensaries were not then averse to having such regulations as would prevent abuses, and while we have no record of the opinions of the managers of the present day, save and except the writings and public speeches of one of the managers who has seen long service (J. Harsen Rhodes, in his addresses before the conference of United Charities and State Medical Association), we know from personal interviews with many prominent dispensary managers that the sentiment is unchanged.

From the MEDICAL RECORD of August 17, 1878, I quote from an editorial review of this report to the State board of charities: "It would appear . . . from this report . . . that the medical profession is not alone interested in checking the growth of the evils connected with our dispensary system, but that distinguished laymen are taking the matter in hand and are working in the direction of reform, with an earnestness of interest and a sincerity of purpose that are worthy of the cause."

From the report itself we note only a few of the answers. There were nine questions asked of the dispensary managers, viz.:

"1. Is it desirable that the general dispensaries should confine their operations strictly to their respective geographical limits?

"2. Is it in your opinion expedient, with a view to restrict the benefits of your institution to the really

necessitous poor, that inquiries should be made of each applicant as to his or her pecuniary ability and special circumstances, at the time aid is asked for?

"3. What, in your opinion, should be the minimum income of the applicants, as modified by the number in the family, and other special circumstances, to deprive them of the benefit of your institution?

"4. If you are of opinion that such minimum of income should be enforced, would it not be necessary and desirable to designate some employee of your institution to act as registrar?

"5. Would this involve much difficulty in your case? If so, please state the points of difficulty.

"6. What course would you recommend for adoption with respect to those applicants who may be denied aid?

"7. Is there, in your opinion, any mode, not open to abuse, by which the names and addresses of good druggists and of doctors residing near such applicants, and willing to treat such cases for a small fee, may be communicated to them?

"8. Is it not, in your opinion, very important to require your visiting physicians to report to your board regularly any want of proper sanitary arrangements in the dwellings visited by them, that such information may be formally and promptly brought to the notice of the board of health?

"9. If, by the conditions of your act of incorporation, you are prevented from making any charge to applicants for relief, would it be, in your opinion, expedient to apply for any legislative change in this respect?"

Question I., answers: New York Dispensary—"We consider it desirable that the general dispensaries should confine their operations strictly to their respective geographical limits, for the reason that the work is more systematic, economical and orderly, and more easily understood and controlled.

"To the visiting physicians who visit patients at their houses, in consequence of their inability to come to the dispensary, it is indispensable that the geographical limits of their respective districts should be strictly defined and observed. In fact, it would be impossible to carry out effectually the objects of the dispensary system if the territory is not limited, as the services of the physicians would be subject to the calls of patients from all parts of the city, thus taking unnecessary time, labor, and expense. Great confusion and conflicting authority and obligations, between or among the dispensaries and their employees and officers, might arise or be occasioned.

"The New York Dispensary now has for its limits all that part of the city on the west side south of Spring Street, and on the east side all south of East Fourteenth Street, First Avenue, Allen and Pike streets.

"This large area is divided into four subdistricts, of which the limits are defined and well known, and to each of which the work of one of the district physicians is confined. These visiting physicians are paid salaries by the dispensary, and it is not too much to say that, if they were to be called into other subdistricts, much less into the districts of other dispensaries, it would be impossible for them satisfactorily to perform their duties. The number of visiting physicians and their expenses would thus be greatly increased.

"On the other side, it is difficult to perceive any advantage to the patients or to the physicians of the dispensary, to throw open the field to distant residents, so long as there are other good dispensaries and visiting physicians who may be called upon.

"In fact, if there are no limits, the aid to be furnished would be subject to the mere whims and caprices of the patients.

"Again, as to the patients who call for relief at the dispensary. While it might be harsh to refuse any relief to a poor applicant residing beyond our limits, and a thing rarely done at the New York Dispensary, as a general rule, unless some fair reason is given for coming from another district and not calling upon the dispensary within that district, it is practically more systematic and orderly to refer the patient to the dispensary of his own district.

"We discourage non-residents coming into our district, and we think they should call upon the dispensary of their own localities.

"We consider it, moreover, statistically of much importance that the district system be preserved."

The Eastern Dispensary, Demilt Dispensary, Northwestern Dispensary, and Northeastern Dispensary all concur.

Question II., answers. New York Dispensary—"In answer to the second question, we consider it important that an investigation of the kind suggested should always be made.

"The fact that a very large number of persons perfectly able to pay for medical advice and medicines fraudulently seek aid at the dispensary as if they were of the class of necessitous poor, is too well established to be questioned for a moment.

"This dispensary for a long time has recognized this fact, and has attempted to correct the above by making an examination of each new and unknown applicant, to learn his or her actual means and necessities.

"It is proposed now to extend this system of investigation. The inquiries suggested are put by the examining physician, who should have printed tables upon which the answers are to be entered. The inquiries are: 1, name and age; 2, residence; 3, occupation; 4, monthly rent paid; 5, amount of daily, weekly, or monthly earnings; 6, whether there are other means of subsistence than those earnings, and, if so, what? 7, if liable for the support of others? 8, if out of employment, for how long? 9, if a woman, single, married, or widow, and if having children how many? 10, other questions arising from the answers to the previous questions. If the application is made for a child, the same questions as to parent, or one *in loco parentis*."

Similar answers were given regarding all the other questions by all the dispensaries addressed, and the committee sums up with the following recommendations:

"1. That no necessity exists for more general dispensaries in districts already occupied.

"2. That a close attention to the rule of geographical limits is most necessary.

"3. That only necessitous poor should receive treatment in the dispensaries, and that those who can pay something would benefit themselves as well as the institution by being required to pay a small sum on the basis either of attendance or of medicine.

"4. That, in general, the means of applicants can more easily be determined by the amount of rent or board paid than by any other method, but that care should be taken to exclude no one from the benefits of the institution through inability to pay.

"5. That it is desirable to establish a uniform definition as to the value of the term, dispensary patient.

"6. That it is desirable that the several dispensaries should, so far as is practicable, act in harmony in respect to the subjects here discussed, and that by occasional conferences, for which provision has been made originally by most of the dispensaries, many of the minor abuses to which medical charities are peculiarly exposed would be most conveniently remedied."

The *Medical Review of Reviews*, in an editorial of November 25, 1897, says:

"It is evident from the perusal of our exchanges that the interest in the question of the proper administration of charitable institutions for the cure of the

sick is not confined to New York City. We do not wish to discuss the question here, further than to correct a possible misapprehension of the aims and purposes of medical men in this city. . . .

"At the annual meeting of the Medical Society of the County of New York, . . . those who did not support a certain ticket were credited with being hostile to the desired reform. This view of the situation is erroneous and misleading. We aver that no class of physicians is more anxious to have unworthy applicants excluded from dispensaries and hospitals than are the physicians and surgeons belonging to the staffs of such institutions. . . . The only real divergence of opinion is regarding the best means of correcting the existing conditions. There are many questions which cannot be remedied by legislation, and if success is to be secured in this instance any proposed measure must be very carefully considered, and so drawn as to avoid any appearance of what we have heretofore termed 'the trades unions idea.' In other words, any measure to be submitted to the legislature must meet the views of the public as well as of the medical profession, and must be evidently for the public welfare. The vested rights of incorporated institutions must also be respected, otherwise opposition from them is liable to prevent all legislation on the subject."

It is quite true that many abuses cannot be remedied by legislation. It is also true that none are likely to be without legislation, as was true twenty years ago when the dispensaries were quite willing to correct the abuses, and, as will be seen by the answers, quite willing to have all cases investigated. Regarding the bill of last winter, there may be evidence of public support in the fact that it passed the legislature without a dissenting vote in either branch.

Corporate rights were not intended to be attacked in that measure. The bill which is now prepared and will be introduced at the coming session of the legislature certainly attacks the rights of no incorporations or persons. It simply aims to have all dispensaries licensed by the State board of charities, and gives the State board power to make rules whereby investigations can be made by a central bureau, or in such manner as it may deem best. That this bill does not affect some dispensaries as they would like is evidenced by the fact that one or two would now like to go out of business, but cannot do so under existing laws, and this bill will probably not help them.

It would seem now after twenty years that the editorial remarks in the MEDICAL RECORD of August 17, 1878, are again appropriate:

"Substantial progress has been made, however, in the direction of better understanding among the different leading dispensaries in the city. There is evidently a disposition to act in harmony in respect to the subjects discussed, and a promise that many of the abuses referable to any lax management of the institutions will be duly corrected."

That the abuses were not corrected at that time seems to have been solely due to the fact that there was no legislation. By united effort we hope now to remedy that defect. W. WASHBURN, M.D.

[illegible]

Tuberculosis.—Although the human race continues to sicken and die of pulmonary tuberculosis, it is the consentaneous opinion of the medical profession, as shown by reports gathered from all parts of the world, that we have in creosote a remedy capable of arresting a certain percentage of cases. This drug should, therefore, be administered carefully, systematically, and continuously in every case of consumption, provided it is well tolerated and there is no contraindication or idiosyncrasy as to its action.—CROOK.

Therapeutic Hints.

Sciatica.—

℞ Sodii glycero-phosphat. . . . . 5 gm.
Aq. dest. . . . . 20 "
M. S. Inject ½ c.c. deeply into muscles near the nerve.

It is not painful, and recent cases soon recover, while inveterate instances are improved.—BILLARD.

Treatment of Cardiac Complications of Arterio-Sclerosis.—To stimulate diuresis and increase the elimination of lime compounds by the kidneys:

℞ Sodium bicarbonate . . . . . 10 gm.
Neutralize with:
Lactic acid . . . . . q.s.
Then add:
Lactic acid,
Syrup . . . . . āā 10 gm.
Distilled water . . . . . 180 gm.
M. To be taken in the twenty-four hours.

—RUMPF.

Whooping-Cough.—

℞ Tr. bellad. . . . . 10 gm.
Phenacetin . . . . . 5 "
Spirit. frumenti. . . . . 15 "
Ext. fol. castaneæ. . . . . 60 "
S. For infants of one year, ten drops. For children of ten years, one drachm every two to six hours.

—LANCASTER.

Acute Pneumonia.—

℞ Beechwood creosote . . . . . 25 gm.
Tincture of gentian. . . . . 50 "
M. S. From 25 to 150 drops a day in wine.

—CASATI.

To Stimulate Involution of the Uterus in Cases of Anæmia.—

℞ Tr. gentian. comp.,
Tr. cinchonæ comp.,
Tr. cardamom. comp. . . . . āā ℥ iss.
M. S. Two drachms before meals.

—DAVIS.

Rickets with Anæmia.—

℞ Syr. ferri iodidi . . . . . gtt. iij.–xxiv.
Aq. dest. . . . . q.s. ad ℥ iij.
M. S. One drachm every four or five hours.

—HARE.

Uræmic Convulsions.—Blood letting, except in the feeble. A vastly greater amount of poisonous material can be discharged in this way than by the slower elimination through the emunctories.—WILSON.

Tuberculosis.—

℞ Creosote (beechwood). . . . . ℥ i.
Tr. gentian. . . . . ℥ i.
Alcohol. . . . . ℥ i.
Vin. albi. . . . . q.s. ad ℥ iv.
M. S. One drachm in wine three times a day.

—SMITH.

Catarrhal Pneumonia.—

℞ Ammon. carb. . . . . gr. xxiv.
Syr. tulu. . . . . ℥ vi.
Spt. vini gal. . . . . ℥ iij.
Syr. senegæ. . . . . ℥ iiiss.
Syr. acaciæ. . . . . q.s. ad ℥ iij.
M. S. Teaspoonful every two hours for a child of two or three years.

—GOODHART *and* STARR.

Chronic Rheumatism.—

℞ Liq. potass. arsen. . . . . ℥ ii.
Potass. iodid. . . . . ℥ ij.
Syr. simp. . . . . ℥ iii.
M. S. ℥ i. t.i.d. p.c. in water.

—DA COSTA.

Amygdalitis.—

℞ Sodii benzoat. . . . . ℥ i. to ℥ iv
Glycerini,
Flix. calisayæ . . . . . āā ℥ i.
M. S. Teaspoonful every hour or two.

—STEVENS.

Simple Angina.—

℞ Potass. chlorat. ..... ℥ iss.
Potass. bromid ..... ʒ ss.
Ext. belladonnæ ..... gr. iv.
Syr. limonis ..... ʒ i.
Syrupi ..... q.s. ad ℥ iv.
M. S. Teaspoonful thrice daily.

—Pepper.

Acute Gastritis.—

℞ Vin. ipecac.,
Tr. nuc. vom. ..... āā ℥ i.
M. S. Two drops in water every two hours.

—Pepper.

Neuralgia.—

℞ Acid. osmic. ..... 0.10 cgm.
Aq. dest. ..... 6 gm.
Glycerini ..... 4 gm.
M. S. Inject 0.01 cgm.

—Chapiro.

Eczema of the External Auditory Canal.—

℞ Acid. phos. dil ..... ℥ iv.
Tr. ferri perchlor. ..... ℥ ij.
Syr. limonis ..... ℥ iij.
M. S. Teaspoonful in wineglass of water after meals.

Aloin comp. pills, one-tenth grain, night and morning, to relieve the constipation.

℞ Acid. carbol. pur. ..... gr. xx.
Ung. zinc. ox. benz. ..... ℥ i.
M. S. Apply.

Begin the local treatment by cleansing the ears with this ointment spread upon cotton on the applicator, then make a free application of the same ointment. No fluids, soap, or water must be used, as they nearly always prove deleterious.—Dr. J. W. May, *Kansas Medical Journal*, May 1st.

Mental Depression in Diseases of the Pelvic Organs.—

℞ Strych. sulph. ..... gr. $\frac{1}{30}$.
Quininæ sulph. ..... gr. iss.
Ext. hyoscyami ..... gr. iss.
Ferri redacti ..... gr. i.
M. For one pill. S. One pill three times a day.

—Tally.

Malnutrition in Infants.—

℞ Ol. olivæ ..... ʒ ij.
Glycerini ..... ℥ i.
Vitelli ovi ..... No. i.
M. et ft. emulsio et adde
Creosoti ..... ♏ xvi.
S. Teaspoonful t.i.d. after feeding.

—*Practitioner.*

Pertussis.—

℞ Infusion of belladonna leaves ..... gr. viij.
Distilled water ..... ʒ v.
Antipyrin ..... gr. xv.
Syrup of gooseberry ..... ℥ i.
M. S. A teaspoonful every two hours for a child of five years.

As a rule, there may be given, for each year of the child's age, gr. viii. of belladonna leaves in infusion and the double dose of antipyrin.—Eschler.

For Colic in Infants.—

℞ Tr. lobeliæ ..... gtt. i.
Aquæ ..... ℥ i.
S. ʒ i. at a dose; give warm and repeat p.r.n.

Holton.

Chronic Nephritis.—Ferran advises a vegetable and fish diet: 1. When the quantity of urine passed exceeds eight hundred grams in the twenty-four hours. 2. When the urea and the density are somewhat augmented, or, at least, normal. 3. When there is increase of phosphates and phosphoric acid. 4. When the quantity of albumin is not exaggerated or subject to great variation. He desires to note that, in order to estimate the real quantity of albumins, he would recommend not to use Esbach's apparatus, owing to the fact that its reaction at the same time precipitates mucin, peptone, etc., which are causes of error. 5. When there is not great abundance of granular casts. 6. When the general condition is satisfactory.

Typhoid Fever.—For an adult:

℞ Salol. ..... ʒ ij. 2.60
Thymol. ..... ʒ ij. 2.60
Tablets of cupric arsenite (āā gr. 0.01) ..... No. xx.
Papoid ..... ʒ ij. 2.60
Guaiacol carbonate ..... ʒ ss. 2
Pulv. saponis ..... gr. v. 0.33
M. ft. caps. No. xx. S. One every four hours with milk.

For children:

℞ Beta-naphthol, dissolved in heated oil ..... gr. xxiv. 1.56
Ol. amygdal. dulcis, dis. in heated oil ..... ʒ ss. 16
Ol. cassiæ ..... ♏ i. 0.06
Pulv. acaciæ ..... q.s.
Glycerini ..... ʒ ss. 16
Aquæ ..... q.s. ad ʒ iij. 96
M. ft. emulsio. S. One teaspoonful every four hours with milk for a three-year-old child.

—E. Viko.

Sciatica.—

℞ Nitroglycerin, alcoholic solution (one per cent.). ℥ ss.
Tinct. capsici ..... ʒ iss.
Aq. menth. pip ..... ʒ iij.
M. S. Five drops thrice daily in a tablespoonful of water for the first three days, and ten drops thrice daily on the following days.

—Troussevitch.

Hemorrhoids.—

℞ Ferri subsulph ..... gr. iij.
Plumb. acet. ..... gr. i.
Mass. hydrarg. ..... gr. ss.
Ol. theobrom ..... q. s.
Ft. suppos. i. Introduce one morning and evening.

—Orville Horwitz.

Vaginal Wash.—

℞ Powdered alum,
Powdered boric acid,
Powdered borax ..... āā ʒ iv.
Hydrastine sulph ..... gr. xl.
Carbolic acid,
Oil of cinnamon ..... āā ♏ lxxx.
Triturate. S. Use one teaspoonful in a pint of hot water for vaginal injection once daily.

—W. B. House.

Seasickness.—

℞ Chloroform,
Tincture of nux vomica ..... āā gtt. x.
Compound tincture of lavender ..... ʒ i.
Water ..... ʒ x.
M. A teaspoonful to be taken every hour until the vomiting and nausea have subsided, care being taken to shake the bottle each time before the dose is poured out.

—Barbas.

Scarlatina.—Begin treatment with the administration of calomel; then give throughout the disease:

℞ Chloral ..... gr. xxx.
Syr. lactucarii,
Aquæ ..... āā ʒ ss.–ʒ i.
M. S. Teaspoonful in ice water every two or three hours.

Complete narcotism should never be attained.—Wilson.

Dilatation of the Perineum in Labor.—The hands are rendered aseptic and an ointment of vaseline with six per cent. each of cocaine and antipyrin is applied to the perineum, vagina, and os uteri. This guards the perineum against rupture, hastens delivery, and greatly diminishes its pain.—Cormolos.

Pruritus Vulvæ.—Free the genitalia from hair, wash out the vaginal canal with sublimate solution so that no pathological material remains, and then cover the diseased spots on the vulva with three or five per cent. carbol-vaseline. The procedure must be repeated every three or four days until a good result is secured.—Ruge.

New Instruments.

AN IMPROVED CENTRIFUGE.

By WILLIAM H. MAY, M.D.,

The accompanying illustration is of a new and simple centrifuge made by Bausch & Lomb, of Rochester, N. Y. It has single gear of hardened bronze, which gives a speed of three thousand revolutions a minute with ease. The horizontal arm carries two aluminium shields, made to contain two taper glass tubes for urine or sputum work. Tubes are made graduated or plain. Milk tubes for obtaining percentage of cream are also supplied. Its simplicity, compactness, and low price should make it a useful help to the general practitioner.

A RETINOSCOPIC TRIAL CASE

By FRANK ALLPORT, M.D.,

Several appliances for retinoscopy have been devised, but none seem thoroughly satisfactory and practical. The ordinary test lens is, after all, the most serviceable. Surgeons, however, do not enjoy transporting their test cases or an assortment of lenses into the dark room for frequent retinoscopic examinations. I have, therefore, requested E. B. Meyrowitz to make for me a small compact case of lenses, to be left permanently in the dark room. The lenses consist of a series of spherical concave and convex lenses, ranging in strength from 0.2 D. to 8 D., which is a sufficient variety. Stronger lenses when occasionally necessary can be made by combinations. A double trial frame accompanies the case, which also contains a solid disc. To permit easy handling in the dark, the lenses are placed farther apart than in the ordinary trial case.

A NEW TRACHEAL TUBE.[1]

By WALTER L. CHAPPELL, M.D.,

The tube which I present to you this evening originated in my endeavors to secure a more perfect instrument for use in children suffering from recurrent papillomata of the larynx. The difficulty experienced in permanently eradicating these growths is familiar to you all. One of the most successful methods of treatment in my practice has been the wearing of a tracheotomy tube for at least a year. This treatment preserves the voice and gives much better ultimate results, but has some drawbacks. The length of the ordinary tracheal tube heretofore employed causes considerable irritation, such as cough, expectoration, and the formation of exuberant granulation tissue around the opening and on the mucous membrane of the trachea. Furthermore, it is considered by some to be responsible for many cases of pneumonia and bronchitis occurring within a short period of the primary tracheotomy. In the writer's experience the chief objection to the old tube is the recurring bronchitis and broncho-pneumonia to which the wearer is liable during cold weather, and in fact at every atmospheric change. The air entering the lungs without first passing through the heat chambers of the upper air tract keeps the tracheal and bronchial mucous membrane in a subacute catarrhal state, which readily passes to bronchitis. I have in three cases employed with entire satisfaction the tube shown this evening; in two under my personal supervision, and in a third case, at Springfield, Mass., under the direction of Dr. F. E. Hopkins. The parts of the tube or obturator are as follows: An outer cannula which extends from the cutaneous surface to the anterior wall of the trachea. Of course this distance varies in different cases, but in a child from three to four years old is about half an inch. A plate or collar surrounds the tube at a level with and rests on the skin. The external end of this cannula is furnished with a male thread. The internal cannula is tube and wire-cage work. The tubular part ceases at the anterior wall of the trachea, and the cage work passes through into the interior of the trachea. The length of the cage work will depend on the antero-posterior diameter of the trachea. The inner end of the cannula is tipped with a smooth saucer-like cap, which presents a smooth surface to the mucous membrane of the posterior wall of the trachea. It is important that this tip shall not press on the posterior tracheal wall. This is prevented by having the external end of the interna cannula fitted with a movable nut, cut with a female thread, to fit the male thread of the outer cannula. By this device the inner cannula can be lengthened or shortened an eighth of an inch or more, to suit the diameter of the trachea and to relieve any pressure which may exist. The importance of this arrangement is well illustrated in the case which was under Dr. Hopkins' direction. The tube was inserted and worn with perfect comfort for some days, when the tip of the inner cage began to impinge on the posterior wall of the trachea, and created considerable irritation. The inner tube was then temporarily withdrawn and a cork placed in the outer cannula. This, being very short, gradually slipped out and allowed the tracheal wound to close. It is evident that, if the pressure on the trachea cannot be

[1] Read before the laryngological section of the New York Academy of Medicine November, 1897.

relieved by the movable nut, the only safe procedure is to remove the entire tube and introduce an ordinary tube, until the necessary alterations can be made. The accurate adjustment required in each case necessitates a new tube, or one specially fitted for each person. This is some objection, but cases of recurrent papillomata are so important that the end justifies the trouble. A small plug accompanies the tube, and may be used as occasion demands. It appears to me that the following advantages may be claimed for this tube:

1st. It is easily and safely retained by passing a piece of perforated adhesive plaster over the head of the cannula as far as the plate, and then pressing it against the skin.

2d. Being short and light, it produces little irritation.

3d. The open cage work in the trachea allows the patient to breathe through the tracheal opening or larynx at will. This is of great advantage, as has already been mentioned.

4th. With the plug inserted, the patient is able to speak more clearly.

5th. Should there be much laryngo-tracheal catarrh, the mucus can readily be coughed into the pharynx.

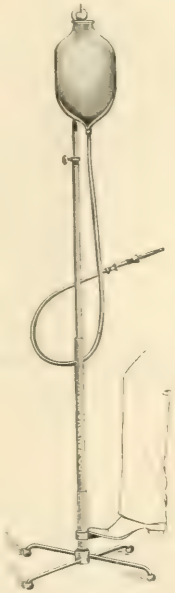
Regarding the use of this tube in other than the cases mentioned, I have had little experience. The large tube which is shown this evening has just been made for a case of epithelioma of the larynx, but has not yet been tried. It seems reasonable to predict that this tube will also prove serviceable in cases of diphtheria necessitating tracheotomy.

AN ADJUSTABLE IRRIGATING STAND WITH PEDAL CUTOFF.

By CEPHAS L. BARD, M.D.,

This device is presented to the notice of the profession with an assurance, based upon a thorough trial, that it will materially contribute to the fulfilment of some of the requirements of an aseptic operation.

Although applicable, at least its cutoff, to the stationary irrigators of the hospital, it is especially designed for use in connection with a fountain syringe, preferably of large capacity. It is manufactured in two forms—the detachable and non-detachable. The former, placed in a case one yard in length, is easily carried to the home of a patient by the surgeon, in his hand or carriage. Its component parts being placed in position, it will sustain at varying heights a four-quart fountain syringe, filled with water and weighing eight pounds. Aside from the immense advantage of its cutoff, about to be described, its use obviates the necessity of suspending the syringe bag from a bedpost, chandelier, or nail driven in the wall, and as it is conveyable it is unnecessary to carry the patient to the syringe, as hitherto has been the case. The non-detachable form is intended for hospital use. By reference to the accompanying cuts, it will be seen that the tubing of the syringe passes through an opening of the hollow standard, and, when the instrument is not in use, is compressed between the convex top of a slide rod, situated interiorly and actuated by a coiled spring at its base, and the concave face of a block placed directly above the opening. Pressure of a foot on a pedal, connected with the lower end of the slide rod, removes the compression of the tubing, and a stream is obtained which continues as long as the pressure is exerted. When it is desirable to have the flow without the constant foot pressure, the pedal by a sidewise motion of the foot may be pushed and fixed in a slot provided for that purpose. The pedal cutoff enables the operator to obtain and to arrest a flow of liquid instantly, with but slight exertion on his part, and as the nozzle, which should preferably be of glass, is the only portion of the apparatus touched by his hand, the danger of infection from that form of contact is absolutely removed. An additional security may be provided by slipping a sterilized muslin sleeve, a foot or more in length, over the delivery end of the tubing. The various hand-controlled cutoffs are without doubt frequently sources of infection, and



their disuse will contribute to the safety of the patient. The control of the cutoff is so complete and so easily effected that the services of an assistant in managing the flow are seldom required, a feature which will be fully appreciated by those operating ouside of the walls of a hospital. With it, for example, a curettage and minor gynæcological operations can be performed by a surgeon whose only assistant is the anæsthetizer. Its convenience will be fully appreciated by the nurse when douches are required in septic cases in the lying-in room.

It is made by Charles Truax, Greene & Co., of Chicago, to whom I am indebted for their faithful adherence to my ideas in its construction.

Uretero-Ureteral Anastomosis. — 1. Uretero-ureteral anastomosis is a perfectly feasible procedure. 2. Uretero-ureteral anastomosis, whenever possible, is far preferable to any other form of ureteral grafting, to nephrectomy, and to ligation of the ureter. 3. It should be done preferably by lateral implantation, or by oblique end-to-end anastomosis, though the transverse end-to-end or the simple end-to-end method may be safely employed. 4. The constrictions of the calibre of the ureter do not usually follow attempts at suturing in closure of complete transverse section of the duct. 5. Nephrectomy for transverse injuries of the ureter, *per se*, is an unjustifiable operation. 6. Simple ligation of the ureter, to produce extinction of the functions of the kidney, is too uncertain to justify its practice. 7. Drainage is not necessary if the wound be perfectly closed and the tissues throughout are aseptic. — J. Wesley Bovee.

A PAIR OF RETRACTORS.

BY RAMON GUITÉRAS, M.D.

NEW YORK.

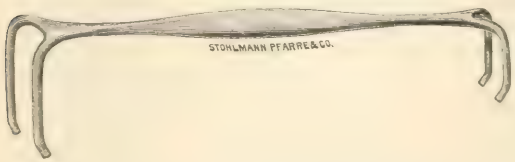
In all of the various operations in surgery, no instruments are more important to the surgeon than is a pair of well-formed and well-devised retractors. Different surgeons have their own favorite instruments which they are in the habit of using, and which through constant use they are led to consider the best.

In teaching operative surgery to post-graduate students, however, most of whom have had considerable practice in operative work, one cannot help being led by their various comments to see certain defects in the instruments in common use.

Retractors have always seemed to come in for a fair share of criticism, and the different varieties have been from time to time so commented upon that I decided to try to devise a pair which could be used in any operation with comparative satisfaction by the general practitioner.

The results of my observations have guided me in devising the pair of retractors which I am about to describe.

Description.—The shaft is seven inches long with a pair of prongs at either end. These sets of prongs



vary in length. The larger pair is two inches long, and they are separated by a distance of three-quarters of an inch from one another. This allows the tissues to bulge out between them, and thus help to hold it in position. At the end of the prongs there is a slight curve inward. This prevents the deeper tissues from slipping, and consequently holds them with a firmer grasp. This larger pair is especially useful in abdominal cases for retracting the abdominal parietes, and is also valuable in operations on deep tissues elsewhere, as in the gluteal region, the thighs, back, etc.

The smaller pair of prongs on the other extremity is just one-half the length of the pair described. They are separated only by half an inch. Their shape is the same, and they also have the ends turned inward, to prevent the tissue from slipping. This smaller end of the retractors is of service in operating where the tissues are not so thick, as on those about the neck and the extremities.

Another advantage that these retractors have over many others is that the assistant's hand is not obliged to grasp the shaft, and thus be directly in the way of the operator, either by partly covering the field of operation or by throwing a shadow over it; for, if one end of the retractor is in the wound, the other end can be supported by the finger of one hand, in such a way that the hand itself is eight or ten inches away from the field of operation.

West [illegible] Street.

The Strawberry Tongue in Scarlet Fever.—The tongue which is characteristic of scarlet fever, and is pathognomonic when it is present, is the bright-red, clean tongue with prominent papillæ, and not the tongue which presents a white coat with the swollen red papillæ protruding, which occurs earlier in the course of the disease.—FUSSELL.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending December 11, 1897:

	Cases.	Deaths.
Tuberculosis	220	97
Typhoid fever	56	14
Scarlet fever	169	16
Measles	302	17
Diphtheria	161	17
Laryngeal diphtheria (croup)	8	7
Chicken-pox	32	0

Hall Caine Jollied.—Under the title of "Hospital Happenings," Mr. Hall Caine's "Christian," with its unfair lies in regard to hospital management, has been jollied capitally in a little paper called the *Guyoscope*. The celebrated ball at St. Bartimæus' is sketched as follows: "Last Tuesday the first students' ball of the season took place in the operating-theatre of St. Bartimæus Hospital. The arrangements generally reflected great credit on the members of the dance committee, who by the way were distinguished by wearing Murphy's buttonholes in their coats. The floor had been carefully scrubbed with softsoap and lysol, and would have made an admirable dancing-surface had there been room to dance. As it was, the majority of the guests preferred to take advantage of the magnificent promenade afforded by the spacious corridors of the hospital. . . . The proceedings opened with a solo clog dance on the operating-table by Sir William McCormac, who was attired in mackintosh and sterilized overall. Next, in response to vociferous appeals, the matron of the hospital obliged with a serpentine dance, all first years' students having been previously anæsthetized. After these two superb displays of Terpsichorean skill a general move was made for the supper room, a delightfully airy apartment used on more prosaic occasions as a dissecting-room. Boyish students might be seen pledging their laughing-eyed partners in foaming beakers of hyd. perchlor. (1 in 2,000, 1897), while their staider elders fortified themselves with modest injections of brandy and strychnine. We can personally testify to the exhilarating qualities of the formalin cup, which was much appreciated by those privileged to partake. If a criticism can be permitted us, we venture to think that the conduct of the surgical-instrument keeper in boiling the spoons between every course was somewhat unnecessary and certainly inconvenient." As *The Lancet* remarks, this is excellent fooling, and is the right way to treat a book at once so stupid and pretentious as "The Christian."

Jonathan Hutchinson on the Medicinal Employment of Coffee.—In his *Archives of Surgery*, Jonathan Hutchinson says: "I have often been in the habit of prescribing coffee as a medicine in certain states of great debility. It appears to me to be a remedy quite unique in its usefulness in sustaining the nervous energy in certain cases. Apart from its general usefulness, I have found it of especial service after operations when anæsthetics had been used and in a state of exhaustion when alcohol had been pushed and a condition of semicoma followed. In these latter cases I have sometimes prescribed it as an enema when the patient could not swallow, and with the best effects. Its value as an antidote to opium is of course well known. Tea and coffee seem to me to be much alike

in many respects, but I would give preference to the latter, as to its sustaining powers. It would, I think, be a great advantage to our working classes and a great help toward a further development of social sobriety, if coffee were to come into greatly increased use, and if the ability to make it well could be acquired."

The Sleep Problem.—As town life extends and intellect is aroused, the problem will be more and more that of too little, not of too much sleep. Perfect or nearly perfect health is of course the first condition of sound sleep. But scarcely any one is quite healthy, and so we must aid the sleepless to acquire that which is lacking. The one great thing to do is to fatigue the attention; not only to tire out the body but also the active mind; to quiet the vasomotor centre and so drive the congested blood from the brain. Quiet and regular habits, a certain monotony of light evening occupation, will tend in this direction, while a great variety of evening engagements is generally fatal to the victim of insomnia. It is unwise to go to bed on either an empty or very full stomach; a slight meal before rest is the wise course. A hot bath the last thing, taken under the following conditions, is perhaps the very best aid to sleep: As recommended by Eccles and others, the bath should be taken in a room with a temperature of 65° to 70° F. The patient should stand with his head over the edge of the tub, douching head and face with water at 100° F. The cooling of the body by the air and the hot sponging of the head first send blood to the brain, dilating its vessels. Then the entire body, except the head, is immersed in a bath at 98° F., rapidly raised to 105° or 110° F.; in a few minutes the bath is left, and the body wrapped in blankets, which absorb the moisture, and with the least possible exertion the patient gets into his night clothes and to bed with a warm bottle to his feet and perhaps a little warm liquid food.—*Spectator.*

The Relation between Chorea and Scarlet Fever.—Priestley (*British Medical Journal*, September 25, 1897, p. 805) relates that during the years 1894, 1895, and 1896, among eighty-three hundred and sixty cases of scarlet fever under treatment at the Northeastern Hospital of the metropolitan asylums board, thirteen cases of chorea were observed. Five of these cases presented rheumatic manifestations, which in each instance immediately preceded or presented themselves simultaneously with the chorea. These symptoms set in considerably later than the usual period at which the articular complications of scarlet fever occur—that is, after the first week. Of the thirteen cases cardiac murmurs developed in seven. The average interval between the onset of the scarlet fever and that of the chorea was over thirty-five days.

Sudden Hyperpyrexia in a Fatal Case of Delirium Tremens.—Bell (*Lancet*, October 2, 1897, p. 859) reports the case of a man, forty-seven years old, who came under observation suffering from the effects of excessive indulgence in alcohol. Vomiting was the chief complaint, and was relieved by the administration of an effervescing mixture with fifteen minims of tincture of opium every three hours. Improvement gradually set in, but in the course of two days symptoms of delirium made their appearance. The temperature, which had previously been normal, rose to 105° F., following a "fit," with loss of consciousness. The man was placed at once in an ice sheet, with an ice bag to his head, and potassium bromide and antipyrin were given every three hours. The temperature, however, rose rapidly to 109.8° F., and death ensued. On post-mortem examination the brain and meninges were much congested, but no hemorrhage could be found. The heart was fatty and the liver was enlarged with commencing cirrhosis, but no other lesions could be made out.

"Catching Cold" as a Cause of Disease.—From a general survey of the subject, Chalmonski (*Deutsches Archiv für klinische Medicin*, B. 59, H. 1, 2, p. 140) concludes that "catching cold," in the ordinary sense, is not a causative factor in disease, playing in general a very subordinate part as an etiologic agency. In inflammatory diseases it may act as only a predisposing factor. "Catching cold" depends upon the activity of thermic agents which are usually not to be avoided; that is, upon the influence of slight degrees of cold. The degree of cutaneous reaction to the given thermic stimulus is an indication whether the individual may take cold under certain conditions. The degree of disposition to "catching cold" forms no constant peculiarity of the given individual. Individuals of advanced age, febrile patients, and those suffering from renal disease appear to be more disposed than others to disease resulting from "catching cold." Between the predisposition to such disease upon the one hand, and the nutritive state and the temperature sensibility upon the other, there is no connection. The prophylactic measures directed in general toward "catching cold" are not only attended by a directly opposite result, but they further expose the organism to far greater danger than is to be anticipated from disease resulting from "catching cold." Protection against such disease may be secured by increasing the reactive capability to thermic irritants by means of suitable exercises.

Croup.—Croup is asthenic localized inflammation, whose causation is connected always with some exposure to cold, wet, etc.; it is never epidemic. Diphtheria is a general disease, usually epidemic and asthenic in type; the local inflammation in it is secondary to the constitutional affection. In croup the false membrane is a solidifying exudation upon the surface of the mucous membrane; in diphtheria it involves its substance also. Croup is not attended by albuminuria or followed by paralysis; both occur not infrequently with diphtheria.—HARTSHORN.

Anæmic versus Organic Heart Murmurs.—An anæmic is distinguished from an organic murmur by its blowing character; by always accompanying the first sound of the heart; by being audible in several of the arteries at the same time; by not being constantly present, occasionally disappearing when the circulation is tranquil and returning when it is accelerated; by the presence of the general signs of anæmia; by the absence of the physical or general signs of organic disease of the heart; by entirely disappearing under treatment calculated to relieve the anæmic state of the system.—W. H. HARRIS, *Journal of Medicine and Science*, June, 1897.

A Prescription.—The appellate court of Indiana holds that a prescription is to be defined as meaning "a statement usually written of the medicine or remedies to be used by a patient and the manner of using them." The following writing was not admitted as falling under this head: "B. W. Tilford, druggist, Martinsville, Ind. R. Spt. frumenti, qt. 1. For medical use. Date, November 10, 1895. B. W. Tilford, M.D." We are forced to admit that, if intended for an infant and to be given at one dose, some unfortunate complication might have arisen.

Specialism.—The following declarations concerning the mutual obligations of the specialist and the physician have been formulated by the Medical Society of the Ninth District of Vienna: 1. The specialist is a physician who renounces practice in all branches of

medicine with the exception of a well-defined part. 2. The specialist should undertake no treatment without an understanding with the physician of the patient or of his family. 3. The physician should be informed of the diagnosis made, and his advice should be sought for important interventions. 4. If it is not possible for the physician to direct the treatment to be followed, the specialist should permit him to take part in it to the extent of his aptitude. 5. The patient cannot be sent by the specialist to a third physician unless with the consent of the physician in ordinary.

Acute Pleurisy a Form of Tuberculosis. — That cases of acute pleurisy are often tuberculous has been known for some time; that they are almost invariably so seems now to be proved. Attention was first drawn to the fact by continental writers. In 1890 Dr. Alfred G. Barrs read a paper before the Leeds Medico-Chirurgical Society. As the result of carefully compiled statistics he confirmed the conclusion of Mayor, that "the majority of cases of simple idiopathic pleurisy or pleurisy from exposure to cold conceal or reveal a tuberculous process. In 1893, however, Dr. William Osler in his Shattuck lecture concluded that two-thirds of the cases were non-tuberculous. In 1895 Eichhorst published the results of injecting the fluid obtained from cases of serous pleurisy into the peritoneal cavity of guinea-pigs. Two-thirds of the animals developed tuberculosis. The *Boston Medical and Surgical Journal* of August 5, 1897, contains an important paper by Dr. George G. Sears. On injecting tuberculin in ten cases of acute pleurisy, he obtained a reaction—rise of temperature—in nine. He limited the reaction to this by using a small dose—one milligram, increased if necessary. His results are nearly identical with those cited by Netter, who obtained a reaction in thirteen out of fifteen cases. The question is of practical importance. Though the prognosis as regards the attack is good, there remains the tendency to develop other and more serious forms of tuberculosis.—*Lancet.*

The Onion and the Teacher.—In Topeka a schoolmistress forbade the eating of onions by the scholars, whereupon all the scholars took to the diet and the teacher was overpowered and yielded. In onion there is strength.

Early Diagnosis of Pregnancy.—Rinman observed in two cases, as an early symptom of pregnancy, slender cords radiating from the nipple, which he believes to have been the hypertrophic acini of the glands. Secretion was not yet present. This observation has been confirmed by others.

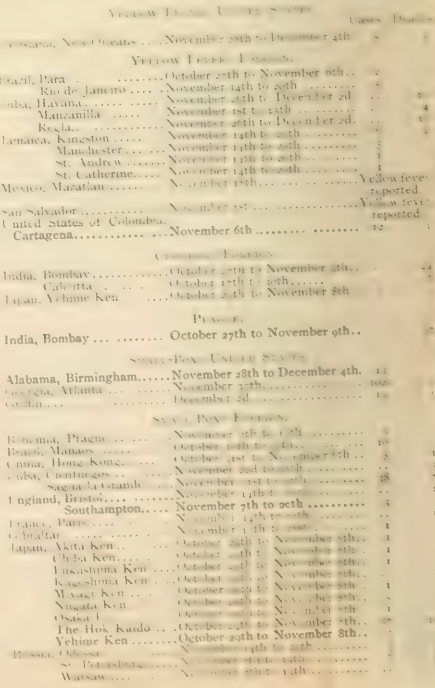
Male Nurses in England seem to have difficulty in obtaining adequate instruction. It is said that no general hospital gives a course of training for males.

In Doubt.—Having read the directions on the box, "Take one every two hours till gone," she sent in haste to the prescriber, to know if he meant her or the pills.

The Wolffian Body in its Relations to Gynæcology. H. Peters (*Lindemann's klinische Vorträge*, October, 1897), after a complete and interesting survey of the embryology of the parts involved, considers the pathological conditions of the female ratus referable to the Wolffian body and duct. These he divides as follows: 1. Cysts of parovarium. A not rare form of thin-walled intraligamentous cyst, seldom larger than a child's head and characterized by lying close to the unchanged ovaries. The contents are usually of a thin, colorless, sometimes slightly opalescent fluid. Their growth is very slow and they are prone to spontaneous rupture and subsequent refilling. When small they give little trouble and do not require any interference, but larger ones may require extirpation. 2. Cysts of ligamentum latum and referable to the paroöphoron. These are usually small and thin walled, holding a colorless limpid fluid, and are of little clinical importance, as they seldom attain a size to call for interference. 3. Cystomyomata, embracing adenomyomata of the lateral and posterior wall of the uterus and similar growths of the broad ligaments and tubes. These are of importance as producing chlorosis, dysmenorrhœa, menorrhagia, sterility, inflammatory processes in the peritoneum, or vesical and peristaltic disturbance, etc. Their prognosis is more serious than that of most myomata, and total extirpation is indicated. The author concludes that the Wolffian body and its duct play an important part in gynæcology, although it is to the future we must look for a clear distinction between its domain and that of the Müllerian duct.

How to Use Knockout Drops.—The following directions were found on a sneak thief recently arrested: "The one most dangerous is any one affected with heart trouble, as it takes immediate action on the heart, causing the heart to beat so rapidly as to finally kill. Fifteen drops of aromatic spirits of ammonia given immediately with a hypo. injection of atropine will always counteract the effect. When you are about to administer, take fifteen drops in a small homœopathic vial, hold in palm of hand, drawing the cork with thumb and forefinger of same hand, reach over the patient's glass, calling his attention, and—why, 'Bang!' he is yours. This is about as explicit as is possible without demonstration. You know the penalty to be caught with it in your possession." The "drops" are composed, it is said, of chloral.

Health Reports.—The following statistics concerning yellow fever, cholera, plague, and small-pox have been received in the office of the supervising surgeon-general of the United States Marine Hospital service, during the week ended December 11, 1897:



Medical Record

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Original Articles.

A UNIQUE CASE OF COMPLETE REMOVAL OF THE STOMACH—SUCCESSFUL ŒSOPHAGO-ENTEROSTOMY—RECOVERY.

BY CARL SCHLATTER, M.D.,

PRIVAT-DOCENT AT THE UNIVERSITY OF ZURICH, AND ASSISTANT AT THE SURGICAL CLINIC.

Introductory Remarks by Dr. Edmund Charles Wendt, of New York.—During my recent stay at Zurich, Switzerland, I was enabled, through the kindly courtesy of my friend, Dr. Carl Schlatter, personally to study the remarkable and unique case about to be described. At the date of the present writing, December 9, 1897, over three months since the operation of total ablation of the stomach, the woman is still under observation at the county hospital; but she is to all intents and purposes a well woman, and does her full share of the daily work of the ward. On the date of my first visit I found her in a very cheerful frame of mind, and quite loquacious. She is already beginning to realize the interest and importance attaching to her case, as she has had medical visitors from many quarters of the globe. The lay press of all Europe has got wind of this extraordinary instance of a "live woman without a stomach." Garbled reports of her case have appeared in London, in Paris, in Berlin, in Vienna, and, perhaps, by this time, in New York. It seems to me that the readers of the RECORD may well be congratulated upon receiving a detailed account of this case from the pen of the operating surgeon himself. It is only fair to mention, however, that, at the request of the editor of *The Lancet*, an abstract of this case has just been forwarded by Dr. Schlatter to London.[1] I take this opportunity of expressing my sincere thanks to the young *savant*, who so cordially assisted me in my efforts to obtain for the American profession an authentic account of the case. On my several examinations of the patient I was particularly struck by her ruddy complexion, fair general appearance, clean, moist tongue, absence of all fœtor ex ore, moderately full and vigorous pulse, and general alacrity. She informed me that her appetite was good, but that she was never allowed to feel really hungry. She relished her meals and her taste was unimpaired. The bowels acted naturally once in twenty-four hours. Her sleep was normal. She complained of no pain.

In a word, save for some degree of emaciation, a noticeably dry skin, and her abdominal cicatrix, the woman at present[2] offers no apparent departure from ordinary average health. How long can she survive the non-existence of gastric digestion? Who can tell? Clinical observation sometimes rudely disturbs our most cherished school-taught physiological dogmas.

Total Ablation of the Human Stomach not Hitherto Done.—It is quite well known that gastrectomy so called is not tantamount to total extirpation of the stomach. The recorded cases of gastric excision are, without exception, instances of partial (chiefly pyloric) removal of the stomach. At the hands of some surgeons, it is true, very large portions of this organ of digestion have been removed, even in ordinary cases of pylorectomy. Some recent operations of this kind have resulted successfully. I recall one case in particular, which occurred at the surgical clinic of Professor Krönlein, of Zurich, which necessitated the almost complete removal of the stomach. This case[1] was one of gastrectomy for colloid cancer. Twenty-two centimetres were removed from the greater curvature and thirteen from the lesser. The patient recovered. Hacker and Maydl have also lately recorded similar cases.

Quite recently several cases of so-called total extirpation of the stomach have also been recorded. But as a careful study of the published reports shows that some small part of the stomach was always allowed to remain, these cases cannot be, strictly speaking, considered as instances of complete removal of the organ.[2]

Writing in the *Deutsche medicinische Wochenschrift*, Langenbuch, in 1894, referred to two cases of alleged total excision of the stomach. The patients were women, respectively fifty-eight and fifty-six years of age. But proof is wanting that no part of the stomach was left behind. One of the patients died six days after the operation. Moreover, in the successful case, while fully seven-eighths of the stomach was excised, the remaining cuff-like parts of the pyloric and cardiac portions proved sufficiently large to admit being joined together by suture.

Professor Schuchardt, of Stettin, removed the major part of the stomach in a case of cancer in 1895. In advance of a detailed account of his case, soon to be published, he has kindly sent me the following particulars of this interesting observation: "The patient, whose stomach was almost completely excised in 1895, has just died after an interval of two and a half years of apparent perfect health. The autopsy showed that from the cardiac stump a new stomachal pouch, with a capacity of over one pint, had been formed. It was in consequence of the new formation of this post-operative stomach that the patient, who at first was unable to take more than very small quantities of nourishment, was finally able to partake of ordinary meals in the ordinary way."

Animals have Survived Complete Destruction of the Stomach.—It has been known for some time that dogs are able to survive the artificial obliteration of the stomach and the loss of its functions. This interesting physiological observation was made as long ago as 1878, by Czerny and his pupils, Scriba and Kaiser.[3] Indeed the so-called "Czerny dog" survived the oper-

[1] It is also proper to state that in preparing the English version of Dr. Schlatter's case I have relied on reprints of an address delivered by him before the Swiss Medical Congress, and that this address has just appeared in the current issue of the Correspondenzblatt für Schweizer Aerzte.

[2] The date of my [illegible] December [illegible]

[1] Krönlein: "Chirur. Erfahrungen über das Magencarcinom." Beiträge zur klin. Chirurgie, vol. xv., p. 326.

[2] Ewald read a paper at the International Medical Congress at Moscow entitled "Erfahrungen über Magenchirurgie, vornehmlich bei malignen Geschwülsten" (Berliner klin. Wochenschrift, 1897, No. 37, p. 798). The case of ablation there referred to was also incomplete, about one inch of the cardiac end not having been excised. The patient died three days after the operation from hemorrhage.

[3] F. Kaiser. "Beiträge zu den Operationen am Magen," in Czerny's Beiträge zur operat. Chirurgie, 1878.

ation of gastric excision for five years, and was then killed for purposes of anatomical study. But even in the case of this "celebrated" animal, the post-mortem showed that a small part of the cardiac end of the stomach had not been excised. And it was further seen that a small sac had gradually been formed from this remnant, and had fulfilled gastric functions.

In 1893 Drs. Pachon and Carvallo published the results of their observations in connection with a gastrectomized dog, which was still alive and gaining weight five months after the operation. This dog frequently vomited, and the ejected matter showed the presence of organic acids.

Last year Monari[1] published a further contribution to this subject. The dog in his case, however, lost weight steadily after excision of the stomach. Nevertheless Dr. Filippi failed to discover any noteworthy alterations in the physiological functions of this animal, more particularly in regard to metabolism. One year later a post-mortem showed that the lower extremity of the œsophagus, as well as the stomachal extremity of the duodenum, had become distended, although not yet to any very considerable degree.

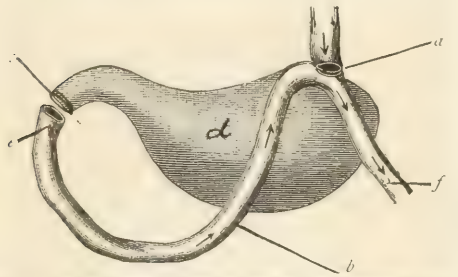

FIG. 1.—Showing Preparatory Steps for Operation. *a*, Œsophageal cut; *b*, duodenum; *c*, duodenal slit; *d*, stomach; *e*, slit closed by suture; *f*, jejunum.

FIRST COMPLETE EXCISION OF THE STOMACH IN A HUMAN BEING.

History of the Case by Carl Schlatter, M.D., the Operator.—The personal observation forming the subject of this paper, relates to a woman, fifty-six years old. In her case I completely excised the stomach, even beyond its cardiac extremity, and then restored the continuity of the alimentary canal by stitching a loop of small intestine into the lower end of the œsophagus, *i.e.*, œsophago-enterostomy.

History of the Present Case.—Anna Landis, aged fifty-six years, silk weaver by occupation, claims that cancer is hereditary in her family. As a child she recalls having had frequent attacks of abdominal pain. According to her own notion these attacks were due to the poor quality of the food at the orphan asylum where she was brought up. Later on she often complained of severe pains in the stomach, accompanied or followed by vomiting. She never saw bloody admixtures in the ejected matter, but large quantities of bile often came up. Medical treatment had never afforded her any relief. Ever since the spring of 1897 the attacks of vomiting were of daily occurrence. Progressive emaciation also ensued. Several weeks before her admission to the hospital a physician told her that she had a tumor of the stomach.

I first saw the patient at the surgical polyclinic on August 26, 1897. An inspection of the abdomen revealed a marked bulging between the left hypochondriac region and the umbilicus. The abdominal parietes were flabby, and palpation easily revealed an oval mass of hard consistency in the region of the stomach. The tumor was freely movable. Its size was about that of two fists. Very marked emaciation was found. The patient was unable to retain any kind of nourishment. She clamored for relief by surgical interference.

She was admitted to my wards for further careful observation. I did not feel confident that gastrectomy, or even gastro-enterostomy, could be successfully performed, on account of the large size of the tumor.

The patient continued to reject almost everything, including fluids. The iodide reaction of her saliva (after exhibition of iodide of potassium) required forty-seven minutes for its first appearance. The chemical examination of her gastric secretion showed no trace of free hydrochloric acid. An operation was, therefore, no longer delayed.

Description of the Operation.—On September 6, 1897, acting for Professor Krönlein, I performed laparotomy under morphine-ether anæsthesia and with strict antisepsis—incision in the median line, extending from the ensiform process to the umbilicus. As I had anticipated, the entire stomach presented itself in the shape of a hard mass extending from the cardiac to the pyloric extremity. Strangely enough, the tumor was freely movable. It was readily lifted out of the peritoneal cavity. Three rather soft lymph nodes were found at the greater curvature near the pylorus. The stomach being diseased *in toto*, a gastro-enterostomy was impossible. I at once decided to attempt to excise the entire organ, or take recourse in a jejunostomy. I first freed the stomach from all its attachments at the greater and lesser curvature, having previously shut off the general cavity of the peritoneum by sterilized compresses. The omentum was incised between Péan's forceps. Silk sutures were used. The stomach was then forcibly dragged downward so as to enable me to reach the œsophagus. The left lobe of the liver had to be constantly held upward by an assistant, in order to permit me freely to manipulate within the field of operation. In this way I finally succeeded in securing the œsophagus rather high up, by means of a Wölfler clamp. A Stille forceps was next fastened closely to the cardiac end of the tumor. Then the stomach was severed directly beneath the œsophageal extremity. As the œsophageal incision appeared somewhat oblique, I proceeded to place a small occluding suture at the gastric wound. The same steps were now repeated at the pyloric end of the stomach.

I next mobilized the duodenum, as far as possible toward the head of the pancreas. Then, having applied a duodenal compressor, and likewise a tumor clamp, I removed the entire stomach, between the two points of compression. I also dissected out the lymphatic nodes above mentioned. The patent lumen of the duodenum was treated like the œsophageal opening with iodoform gauze. The broad bridge joining together different divisions of the alimentary canal had now been entirely removed.

I next tried to pull the duodenal opening upward toward the œsophageal cleft. It was only with considerable difficulty that the two could be made to touch. It was manifestly impossible to join them by direct suture. I, therefore, invaginated the duodenal rim, and closed the opening by a double suture. I then searched for a suitable coil of small intestine. Beginning at the duodenal-jejunal fold, I followed down the intestine for about fifteen inches. The presenting knuckle of intestine I grasped, and, pulling it over the transverse colon, I placed it against the œsophageal slit.

A piece of this intestine, about five inches in length, was secured between two Wölfler clamps. By means of sutures not going deeper than the serous coat, the intestine was then attached to the œsophageal stump. A longitudinal slit about one inch in length was then made into the bowel. Then the mucous membrane of the œsophageal end was firmly united with the intes-

[1] Beiträge zur klinischen Chirurgie, Vol. XVII, 1896, p. [illegible].

tinal mucous membrane, by a continuous circular suture. The material employed was silk. Above this, a second suture, extending through the muscular and serous coats, was introduced. A Lembert suture finally completed the stitching, which now seemed to hold.

The œsophageal and duodenal clamps were then removed, the former having remained in position for over two hours. On dropping back the organs into the abdominal cavity, the sutured portions showed marked retraction upward, toward the œsophageal part of the diaphragm. The abdominal wound was closed in the ordinary way by silk ligatures. Less than eight ounces of ether had been employed during the narcosis, which had fortunately been a very quiet one.

Pulse after the operation, 96 a minute, steady, and of fair volume.

There had been only a very slight loss of blood during the course of the operation, which, however, had lasted nearly two hours and a half.

Clinical Observations Following Removal of the Stomach.—Shortly after the operation the patient received an enema containing brandy and two eggs. Temperature in the evening, 36.4° C.

September 7th.—Two nutrient enemas containing milk, eggs, and brandy. Pulse rate has risen to 142, but in volume remains moderately good. Patient has taken per os, in the course of the afternoon, a small quantity of tea and milk, which is apparently well borne. No signs of peritonitis. Evening temperature, 37.3° C.

September 8th.—Nutrient enemas no longer retained. Claret wine in teaspoonful doses given, until half a glass has been taken. Patient complains of sudden abdominal pains, which, however, quickly subside. Evening temperature, 38.1° C.; pulse, 160, but of moderately good volume.

September 9th.—Subjective symptoms considerably improved. At intervals of two hours, very small quantities of milk, eggs, bouillon, and wine are given.

Small quantities of pepsin and muriatic acid have been tentatively added to the food. Pulse better, 146 per minute. Highest temperature, 38.1° C.

September 13th.—Dressing removed. The abdominal wound found united by primary intention without a trace of local reaction. Stitches removed. Patient allowed a little scraped meat for the first time. The first movement of the bowels since the operation took place September 10th. Since then the patient has had from two to three fluid stools daily.

Occasionally there is some regurgitation of ingested milk, but actual vomiting has not occurred.

September 16th.—Patient feeling remarkably well; temperature normal; pulse, 100; slight diarrhœa.

From now on the patient was able to take fairly large quantities of food. Mornings at 7, a cup of milk with one egg; 9:30, cup of milk with one egg. Dinner, very soft scraped meat, or a cup of thin gruel with an egg; 4 P.M., cup of milk with egg; 7:30 P.M., a cup of milk or gruel. In addition to these regular feedings, she also takes tea and Malaga wine, amounting in the course of the day to from five to seven ounces.

On September 16th, for the first time since the operation, vomiting occurred. It was preceded by nausea, apparently superinduced by the patient having witnessed a change of dressing in a neighboring surgical case. There was a good deal of retching, and about seven ounces of bilious and slightly acrid fluid were ejected.

September 26th.—Patient is allowed to have half a chicken, the last remnants of which she swallowed at 4:30. At 6:30, customary milk and egg. At 7:30, attack of vomiting with considerable retching and marked contractions of the abdominal muscles. The ejected matter amounted to about ten ounces, and consisted largely of milk and meat fibres. For some time before this attack patient had complained of a decidedly bitter taste in her mouth.

October 2d.—Another attack of vomiting. The ejected fluid measured over six ounces. It was yellowish in color and not offensive. This attack came on one hour after eating. Examination showed that undigested egg and milk had been thrown up.

October 4th.—An attack similar to the one just noted was observed.

October 8th.—Another attack of vomiting. The slimy fluid was sent to the laboratory for chemical examination. The report received stated that the reaction of the fluid was distinctly acid. This was owing to the presence of lactic acid, as no free hydrochloric acid was found. Trypsin reaction was also discovered. Bile acids and bile pigment were likewise present in appreciable quantities. It should be

Fig. 2.—Photograph of the Patient, Showing Abdominal Cicatrix. (Taken December 1, 1897, nearly two months after the operation.)

mentioned, in this connection, that the patient was no longer taking pepsin and muriatic acid.

October 11th.—Patient left her bed for the first time since the day of the operation, *i.e.*, September 6th.

November 25th.—Patient feeling quite well and able to walk about comfortably.

There was a steadily progressive increase in the weight of the patient after removal of the cancerous stomach. This is readily seen by the following:

TABLE SHOWING WEIGHT OF PATIENT AFTER OPERATION.

Date of Weighing.	Actual Weight in Grams.	Increase in Grams.
October 5th	33,600	
October 11th ..	33,750	150
October 18th ..	35,260	1,510
October 25th ..	35,500	240
October 29th	36,000	500
November 5th	36,200	200
November 19th ..	36,500	300
December 3d.....	37,500	1,000
December 9th.....	37,800	

[1] The patient was not actually weighed on the day of the operation, but the minimum increase from September 6th to October 5th has been estimated at [illegible]

Pathological Report on the Excised Stomach.—The specimen consists of a human stomach measuring twenty-eight centimetres (eleven inches) along the greater curvature, and twenty centimetres (eight inches) along the lesser. The greatest width between the curvatures amounts to ten centimetres (four inches) (see Fig. 3). The gastric cavity is so completely occupied by a neoplasm that it is difficult to force a finger in at either extremity.

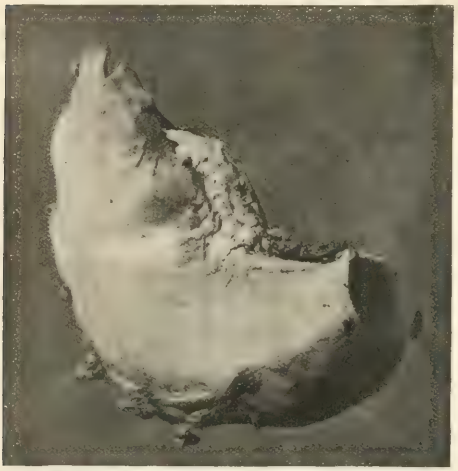

FIG. 3.—Front View of Excised Stomach. The specimen has undergone shrinkage, owing to the action of alcohol, in which it is preserved. The slits visible at the greater curvature are due to removal of specimens for microscopical examination. The œsophageal and pyloric extremities show where portions of the organ were excised *post operationem* for anatomical study.

From both the cardiac and pyloric ends, small portions were cut off and sent to the Pathological Institute of the university (see Fig. 4). Professor Ribbert made the following report on these specimens: one piece is unmistakably œsophageal in histological structure. The other specimen is just as unmistakably duodenal. Microscopical examination showed the neoplasm to consist of a small-celled alveolar glandular carcinoma. According to the microscopical report of Professor Ribbert, already alluded to, there can thus be no question that in my case the gastric excision extended into the territory of the œsophagus. Nevertheless, anatomical considerations did not make it clear to me why, during the course of the operation, it had seemed so easy, comparatively speaking, to gain access to the œsophagus. Of course it must be remembered that I made use of considerable traction downward by pulling on the stomach itself, and it was in this way that the subdiaphragmatic portion of the œsophagus became markedly elongated.

This practical demonstration in the living subject received anatomical corroboration from the prosector at the anatomical institute of the university. I was informed that it was always possible under normal conditions to elongate by traction the lower subdiaphragmatic portion of the œsophagus.

The accompanying lymph nodes were found to be non-cancerous.

Practical Anatomical Observations.—I would like in the first place to say a few words in regard to the technique of the foregoing operation. Langenbuch,[1] in connection with his recorded gastrectomies, has published the following statements: "Of course my gastrectomies did not amount to total extirpation of the stomach. And, indeed, total ablation appears to be practically impossible toward the cardiac extremity of the stomach. For the cardiac portion has, like the head of the humerus, an anatomical as well as a surgical neck. Bearing in mind this anatomical peculiarity, it seems admissible to regard my operations as instances of total exsections of the stomach. For in both cases I removed as much of the organ as was technically possible."

Now the boundary-line between the œsophagus and cardiac extremity of the stomach is clearly defined. The former is supplied with pavement epithelium; the latter shows the cylindrical variety. Personal observations and experiments on the cadaver fully confirmed this observation.

In the case of my patient it should also be borne in mind that as soon as the Wölfler clamp was removed, marked upward traction of the œsophageal stump was witnessed. Possibly the weight of the neoplasm had previously contributed its share toward dragging down the œsophagus. I cannot, therefore, accept the quoted statements of Langenbuch.

Dietary Considerations Following Removal of the Stomach.—In attempting suitably to regulate the nutrition of my patient after the operation, it became first of all necessary to bear in mind what functions had been done away with by complete ablation of the stomach. It seemed to me *a priori* possible that the patient should survive, on account of the previous practical elimination of all gastric functions, owing to the large size of the tumor. Nevertheless it became an object of my solicitude to discover means for the compensatory substitution of something new in place of the loss of the old. It is true, modern physiological research no longer vouchsafes to the stomach its old rôle as chief organ of the digestive apparatus. Nevertheless, its importance in chemical as well as in physical respects should not be underestimated. It is still a question whether the human organism can long survive the total elimination of all gastric activity.

Physiological Observations.—It is well known that, considered merely as a food reservoir, the stomach exercises a highly beneficial influence over all ingesta. Food is retained for a shorter or longer period in the stomach, according to differences in its nature. To the bowel there is thus insured a measurable degree of safety from overloading. As a corrector of widely different degrees of temperature of various kinds of food, the stomach certainly fulfils an important office. The well-known chemical and mechanical activities of

FIG. 4.—Posterior View of Excised Stomach. The photograph shows distinctly where portions of the wall of the organ were cut out at either extremity for microscopical study. The neoplasm fills out the entire cavity of the stomach.

[1] Deutsche medicinische Wochenschrift, p. 969, 1894.

the stomach, as also the disinfecting potency of its secretions, need not be specifically dwelt upon to establish the manifold importance of this organ. The bactericide action of gastric juice in cholera and other diseases need only be mentioned in passing. The capacity for absorbing certain liquids, while not so important as was formerly believed, should nevertheless also be borne in mind.'

Clinical Observations in Connection with the Obliteration of all Gastric Functions After the Operation.—There being no food receptacle after ablation of the stomach, it became obligatory to feed my patient at first with minute quantities of food, given at short intervals. The results of this method of procedure were in all respects happy ones. Quantities of food approaching ten ounces seemed to excite vomiting. So, too, cold fluids resulted in diarrhœal discharges, and may have been partly responsible for the rise in temperature, observed for some little time after the operation.

Keeping in mind the absence of mechanical function, the patient's dietary was at first a strictly fluid one. But as early as the second week after removal of the stomach, semi-solid and even solid food was allowed. It was retained and digested without discomfort. The patient having only a single tooth, mastication was of course quite imperfect, otherwise it seems to me possible that an ordinary mixed diet might have succeeded at a still earlier date.

Some weeks after the operation the patient's ordinary daily dietary was as follows: At regular intervals of from two to three hours she took milk, eggs, thin gruel or pap, tea, meat, rolls, butter, and Malaga wine. The daily quantity amounted to one quart of milk, two eggs, two to three ounces of pap or gruel, seven ounces of meat, seven ounces of oatmeal or barley water (as thick almost as gruel), one cup of tea, two rolls, and half an ounce of butter.

Personally I felt most concerned about the obliteration of all chemical activity on the part of the absent stomach. I soon perceived that adding pepsin and hydrochloric acid to the food was theoretically as inadmissible as it had been found practically valueless. The alkaline fluids of the intestine at once neutralized the acid, and rendered the pepsin inert.

Fortunately it soon became apparent that despite the absence of acid pepsin, proteids were readily assimilated in the intestinal tract.

Does Gastric Acidity Influence the Decomposition of Intestinal Contents?—This moot question received contributory elucidation by the careful study of the patient's discharges after the operation. The urine and fæces were examined every day at the chemical laboratory of the university. Products of abnormal intestinal fermentation or decomposition (skatoxyl and indoxyl) were either not at all found, or else discovered only in traces.

These observations tend to corroborate the views of v. Noorden,[2] while it negatives the opinion held by Kast and Wasbutzki. The most recent results of laboratory experiments announced from Professor Baumann's institute, viz., that hydrochloric acid inhibits intestinal decomposition, thus received no support from actual observations in the living human subject.

Does Removal of the Stomach Affect the Rapidity of Intestinal Propulsion?—Observations on this point are still being made, and at the present time I am unable to present any very definite conclusions. The patient objected to swallowing charcoal. Huckleberries were at three different times found in the passages, twenty-four hours after having been swallowed.

The Urine After the Operation.—Apart from a daily recurring diminution in the quantity of excreted chlorides, the urine of this woman has remained normal since ablation of her stomach. The daily excretion of chloride of sodium has been found to vary between the limits of 0.6 per cent. and 0.95 per cent. It should be stated in this connection, however, that, complying with the wish of the patient, her food is prepared with less salt than that of the other ward patients.

Microscopical Examination of the Fæces.—The stools were well formed, of normal consistency, and light yellow in color. The microscope showed large numbers of fat globules and fatty crystals, some undigested vegetable fibres, but no undigested animal fibres or connective tissue. Large quantities of triple phosphates were observed. The number of microorganisms was normal. Altogether repeated examinations revealed no noteworthy departure from a condition of perfect health.

Vomiting without a Stomach.—How can a person vomit without a stomach? No matter what theoretical physiological notions we may have imbibed from lectures and text-books, the woman under observation had repeated attacks of ordinary nausea, retching, and vomiting. We must needs conclude, therefore, that the rôle of the stomach (*i.e.*, its antiperistaltic efficacy) in this direction has been very much overrated. While the vomited substances showed an acid reaction, this was not due to the presence of free hydrochloric acid.

In view of the fact that the patient ejected as much as thirty ounces at one time, it seems reasonable to suppose that the remaining portion of the duodenum may have already begun to show distention sufficient to produce a sort of compensatory receptacle for food — perhaps nature's attempt in the direction of the new formation of a stomach.

In endeavoring to explain vomiting without a stomach, we should remember that the act itself is far from being a simple process. It is due to nervous action on a complex motor apparatus, consisting of pharynx, œsophagus, stomach, diaphragm, and abdominal muscles.

It is not surprising, therefore, to have witnessed in this woman an ordinary attack of bilious vomiting, superinduced by a mere psychical disturbance.

Conclusions by Dr. E. C. Wendt.—While it would be manifestly unfair to indulge in sweeping generalizations on the strength of this single case, so boldly rescued and ably described by Dr. Schlatter, it seems at least justifiable to formulate the following conclusions:

1. The human stomach is not a vital organ.
2. The digestive capacity of the human stomach has been considerably overrated.
3. The fluids and solids constituting an ordinary mixed diet are capable of complete digestion and assimilation without the aid of the human stomach.
4. A gain in the weight of the body may take place in spite of the total absence of gastric activity.
5. Typical vomiting may occur without a stomach.
6. The general health of a person need not immediately deteriorate on account of removal of the stomach.
7. The most important office of the human stomach is to act as a reservoir for the reception, preliminary preparation, and propulsion of food and fluids. It also fulfils a useful purpose in regulating the temperature of swallowed solids and liquids.
8. The chemical functions of the human stomach may be completely and satisfactorily performed by the other divisions of the alimentary canal.

[illegible] I have thought it advisable, in order to curtail the length of this communication, considerably to abbreviate this portion of Dr. Schlatter's interesting remarks.—E. C. W.

[2] V. Noorden: "Lehrbuch der Pathologie des Stoffwechsels," p. 245, [illegible]

9. Gastric juice is hostile to the development of many micro-organisms.

10. The free acid of normal gastric secretions has no power to arrest putrefactive changes in the intestinal tract. Its antiseptic and bactericide potency has been overestimated.

COMMON SENSE IN THE TREATMENT OF DIGESTIVE DISORDERS.[1]

BY DAVID INGLIS, M.D.,

DETROIT,

PROFESSOR OF MENTAL AND NERVOUS DISEASES, DETROIT COLLEGE OF MEDICINE.

THE writer feels that an apology is due for the initial claim implied in the title—that of assuming to have common sense. So uncommon does common sense appear to be, that to claim it seems presumptuous.

Let me then interpret my meaning by saying that the effort of this article is simply to recall, for our fresh contemplation, certain physiological laws, familiar to us all—the object of this being to prevent us from being led away by certain enthusiasms.

There have arisen in these times certain enthusiasts in the mechanical treatment of gastric and intestinal disorders. These form one detachment only of the great army of medical mechanics. From the top of the head to the sole of the foot, no organ is safe from the man who proposes to effect dynamic changes by mechanical means. Let us grant that there are many things which can be accomplished by mechanical means, but let us keep in mind the fact that the constant play of function in every organ of the body is the result of dynamic activities which are wholly out of reach of mechanical assistance.

Keeping this in mind, what judgment shall we form of the present attempt to explain dyspeptic disorders by a mechanical theory, that of dilatation of the stomach, and their treatment by mechanical means, the stomach tube? As a basis, let us take some statements from a recent author, Bouchard, whose book, "Auto-Intoxication," has had a considerable circulation. Bouchard first states that "dyspepsia is accompanied by dilatation of the stomach in seven-eighths of the cases" (p. 161). Again he says: "In a ward in a hospital, out of ten patients taken at random, you will find three with dilatation." Once more: "Dilatation of the stomach may exist without inducing anomalous sensations, without dyspeptic or gastralgic symptoms, in two-thirds of the cases. It is a disease which does not announce itself; we know that it passes unperceived."

Put into concentrated form, these statements mean that of all dyspeptic patients seven-eighths have dilatation of the stomach, but that this very considerable number by no means represents the total; on the contrary, for every dilated stomach which causes dyspepsia, there are two others which do not. And finally, about one-third of our hospital patients of all sorts have dilated stomachs.

Here is a great field for mechanical therapeutics, but we have by no means exhausted its importance, for Bouchard goes on to enumerate the symptoms of dilated stomach, a disease which, he naively says, "does not announce itself"—"it passes unperceived." The symptoms of dilatation of the stomach are as follows, according to this writer: Pulmonary phthisis, chlorosis, eructations, sensation of heaviness at epigastrium, sensation of heat at epigastrium, pyrosis, regurgitations, catarrh of stomach, ulcerative gastritis, false cancers, inflammation of large intestine, membranous enteritis, hepatic congestion, jaundice, ectopia of right kidney (fourteen times out of one hundred), feeling of morning depression, painful circle around the head, headache, uneasy disposition, sensibility to cold, insomnia, vertigo, obscuration of sight, hæmiopia, diplopia, weakness of the right internal muscle of the eye, hallucinations of sight, dropsy of the limbs, contracture of the extremities of the hands, transitory aphasia, fatal syncope, sensation as if two or three fingers were dead, palpitation, flushing of the face two or three hours after meals, false angina pectoris, nocturnal perspirations, bilateral intercostal neuralgia, ezcema (thirteen per one hundred), pityriasis versicolor, urticaria, acne in young girls, catch cold easily, cough habitually, bronchial mucous secretion, recurrent bronchitis, dyspnœic respiration, recurring coryza, morning sneezing, albuminuria (seventeen per one hundred), peptonuria, loss of physical energy, loss of moral energy, emaciation, lax obesity with pallor, abundant deposits of urates, increase in acidity of urine, phlebitis, purpura (two or three per one hundred), joint nodes (twenty-five times in one hundred cases), rachitis, osteomalacia, coma.

It seems odd, to say the least, that a disease possessed of such remarkable disruptive powers should, in two-thirds of the cases, fail to announce itself. But nothing staggers our enthusiast, for he goes on to say: "I have asked myself the query, whether people who in appearance are not ill, but still have the physical signs of dilatation of the stomach, are truly healthy?"

Gentlemen, you may say that this is ridiculous. No; it is serious, for Bouchard represents the extreme of a class of enthusiasts who are looking for dilated stomachs and finding them, and who when they find them honestly believe that the first thing to do is to cure that dilatation. To this end there are multitudes of people who are having their stomachs washed out day after day for weeks and months; they are being electrified and massaged; they are being fed as if the digestion in the stomach went on as it would in a crock on a warm shelf.

It is worth while to look at dilatation of the stomach from another point of view, and here I quote our enthusiast for the last time. He says: "While very frequent in the sick, it is relatively uncommon in the healthy."

Unconsciously he gives the key to the whole matter. The stomach is subject to all sorts of variations in size in perfectly healthy people. Its muscular walls may at one time keep well contracted when it is empty, or at another time they may relax. We may form an excellent idea of the varying conditions at different times in the same individual, by recalling the contracted or relaxed scrotum. The scrotum, which is habitually exceedingly lax, still retains the power of firm contraction; as a rule, so does the stomach.

Dilatation of the stomach can be easily produced. Leaving altogether to one side these cases in which pyloric obstruction, however produced, is the efficient cause, let us note that the gases liberated by fermentation of undigested foods cause but a slight pressure; they form much as the bubbles in yeast, yet, gentle as is the internal pressure, the walls of the stomach easily yield. It is only when a sufficient nervous impulse starts a contraction that we so much as become conscious that the stomach is full of gas.

The dilatation of the stomach is mainly a matter of lack of nervous stimulus to set up peristalsis. Now we see why, "while very frequent in the sick, it is relatively uncommon in the healthy." The sick, in the usual course of things, have a lowered nervous tone: they have dilated stomachs for precisely the same reason that they are constipated, and the latter disorder is probably quite as dangerous as the former.

We can, indeed, set up an arbitrary standard for the

[1] Read before the Detroit Medical and Library Association.

size of a normal stomach, but in reality there is no such standard. It is the old story of the displaced uterus—either there is no fixed normal for the uterus, or a very large percentage of women demonstrate the fact that an abnormal position of the uterus is a matter of absolutely no importance. So with the stomach: if we set up an arbitrary standard, then it is again true that deviations from that standard constantly occur without harm to the individual.

A diagnosis then of dilatation of the stomach is arbitrary, and when made does not, taken alone, demand any treatment at all. Because a man has a dilated stomach is not of itself reason for using either the stomach tube, electricity, a limited dietary, or drugs. We are not even certain that he may have a dilated stomach next week. Something more is needed—there must be other indications for treatment, and the other symptoms which accompany dilatation of the stomach are by no means to be looked upon as the results of the dilatation. Bouchard simply makes himself ridiculous when he enumerates the long list of symptoms of dilatation of the stomach. The symptoms he gives occurred in people whose stomachs happened to exceed his standard of size. Being otherwise in poor health, they also had dilated stomachs; in most of the cases they were probably constipated.

As regards the use of the stomach tube, the great majority of dilated stomachs need no stomach tube. Get the sick well of their other sicknesses, and their dilatation will disappear. I suspect that if those other people with dilated stomachs, who obstinately persist in appearing to be well, would cultivate a little invigorating training for their general muscular apparatus, they too would get rid of their dilated stomachs without a stomach tube or anything else. It ought never to be forgotten that the stomach tube is a purely mechanical device, and that the functions of the stomach, while partly mechanical, are mainly the result of dynamic changes. The stomach tube will wash off a lot of stringy mucus, will clear out a lot of fermenting, irritating material; the abnormal irritation of lavage will stimulate muscular contraction, but the real difficulty lies back of all this. To say nothing of the annoyance of the procedure, the steady continuance of lavage sets up an entirely unphysiological habit in the stomach.

Enthusiasts, led on very naturally by the exceedingly brilliant results obtained in some cases, are in danger of forgetting that the real problem is to re-establish that normal action of secreting cells, muscular fibre, and nerves which characterizes a stomach which knows no stomach tube. They are in danger of overlooking other affections, as happened when a patient had his stomach washed out for several months and a rigid and debilitating diet kept up, while he was suffering from the gastric crises of locomotor ataxia.

It is also sometimes forgotten that a patient can drink a lot of salt water or borated water by the ordinary use of his œsophagus, and vomiting can be induced without running a tube into the stomach.

There is a field for the stomach tube. Within its limits the careful use of the stomach tube is capable of rendering services so valuable that it can fairly be claimed as one of the greatest advances in practical medicine. In cases of pyloric obstruction with retention of stomach contents and fermentation changes, lavage is capable of affording very great relief, even when the nature of the pyloric obstruction makes cure impossible. The stomach tube has greatly aided in the diagnosis of gastric affections. Lastly, in cases in which, without actual pyloric obstruction, the above-mentioned fermentative changes are going on; in cases of chronic catarrh of the stomach, however caused, lavage is again a valuable aid. There may be dilatation of the stomach in these cases, often is, but it is the ability of the stomach to effect complete digestion and obtain the normal rest of an empty stomach which decides the need of lavage—not the mere size of its walls.

In these cases the stomach tube does its good by its action on the mucous membrane rather than upon the muscular coat. In cases of complete atony, lavage and electricity are unquestionably of much value. Even in such cases these measures ought to be regarded as makeshifts, until by measures directed to the nervous system something of the normal nervous stimulus can be re-established.

Let us now take up another matter, that of "enteroptosis." We discover that things drop down. There was once a wave of enthusiasm over "falling of the womb." Every gynæcologist of any real note had a pessary named after him. I am not certain, but I think gynæcologists are rather shy of having their names printed on the pessary box nowadays.

The stomach drops down; the colon does; the kidneys slip out. Fortunately or unfortunately, pessaries cannot be invented for these; but abdominal supporters can be used, and massage and electricity come in play. What are the facts? Inasmuch as the stomach is to all intents and purposes merely a dilated piece of intestine through which foods go by peristaltic movements, it really makes very little difference whether the pyloric end points west or south. As for the intestines, nature has planned for the greatest possible mobility. We used to think that the appendix had a local habitation as well as a name. We now know that the appendix claims pretty much the whole right half of the belly, and even strays across the line.

Suppose the colon does drop down. Why, if an adult were found with a sigmoid flexure which started at the ribs, dipped down to the pubis, and wound back to the neighborhood of the left kidney, that would be a frightful drop; but young infants get along nicely with that sort of sigmoid flexure.

Unless the canal is obstructed by the displacement or an actual obstruction to the normal blood supply ensues, the precise position of stomach or bowels is of little importance. The same thing is mainly true of displaced kidney; occasionally a displaced kidney causes pain and at times reflex nervous troubles, but pretty generally a displaced kidney "does not announce itself," and the patient would be all right if the doctor were not too careful a diagnostician.

I suspect that it is not the displacement of the viscera which is the important matter, but the relaxation of the abdominal walls, which takes away the normal support for the diaphragm. When the diaphragm is itself dragged upon in its regular respiratory effort, the matter may be important, for the whole respiratory and circulatory mechanism is likely to be disturbed.

To afford support until such time as the abdominal walls can be restored to normal vigor, a proper abdominal bandage is important.

Still more valuable is the use of electricity and massage. It is not enough to support the abdominal walls; it is necessary to bring back muscular tone. But not less important is it to set up an increase in the nervous vigor by the use of such drugs as strychnine, or such measures as increase the entire nutritive activity.

Finally, a word in regard to diet. It is undoubtedly true that the idea of a test meal is logically sound, but here again there are unhappy limitations. I grant that it is feasible to give a test meal and from the examination of the stomach contents safely to state the relative abundance of lactic or hydrochloric acids, but the range of information to be gathered in this way is very limited. There are probably not to exceed ten men in Michigan whose training would enable

them to make an exact analysis of the stomach contents. The time and labor involved make such an analysis necessarily very expensive, and it is of course entirely out of the question to have such an analysis done for the various dyspeptics. The test-meal analysis is then simply a rough test of limited extent. Even in the matter of stomach acidity the result of the test is not always of certain application. There are certain individuals who go through life with habitual hyperacidity, and who are adjusted to degrees of hyperacidity which would be very damaging to the average person.

Before leaving this subject of examination of the stomach contents, I wish, in parenthesis, to call your attention to a matter of grave moment. I refer to the examination of the stomach contents by the coroner or county physician. There occur many cases in which the coroner makes a post-mortem and has the stomach contents analyzed. In some instances very grave questions of a criminal nature depend upon the result of this analysis. It is worth careful consideration to decide whether the average coroner or county physician has the very great chemical skill required to make such an analysis as ought to be made. Failure to detect poisons would let a murderer easily go free. How many county physicians could so securely demonstrate the presence of a fatal dose of poison as to warrant the condemnation of a murderer? How many analyses of the stomach contents are paid for by the State or counties?

To recur to the matter of diet. The test meal having a limited range, we need to be careful lest we regulate the patient's diet too much by theory, too little by practical results. The dietetic treatment of diabetes is very important, truly, yet I am thoroughly satisfied that not a few diabetics are brought to an early death by a too sudden change and too rigid adherence to a diet whose principle is correct enough in theory.

So with dyspeptics: we need to remember that it is the patient we are treating, not his disease. The advance in the study of digestive disorders does not absolve us from remembering and practising what we have learned in other ways and in older times.

41 State Street.

Colono-Enteric Irrigation in the Treatment of Intestinal Obstruction.—Dr. Pynchon (*Chicago Medical Recorder*, December, 1896) urges that in all cases of intestinal obstruction distensive enemata of from ten to twenty or more pints of water be employed. His clinical observation, together with a study of literature pertaining to the conditions of acute bowel obstruction, lead to these conclusions: Copious enemata promptly and persistently employed are indicated in the early stages of acute intestinal obstruction. The patient must be anæsthetized and suspended in a position of inversion. The water should be as hot as can be safely used, and there should be available no less than three gallons. A rectal tip must be used which will positively control the escape of water from the rectum, and no long colonic tube is required. No air must be allowed to enter the gut and the water pressure must be constant and not intermittent; the earlier method of alternately filling the gut as far as possible and then allowing it to empty itself is not approved. While the pressure must not be allowed to weaken, the onward flow of water can be made to alternate with forcible abdominal massage. The fall of water may be varied from fifteen to thirty feet, according to the age of the patient and the stage of the trouble, providing a lesser fall, of, say, six feet, in alternation with massage is not successful.

SOME QUESTIONS OFTEN ASKED ABOUT DRINKING-WATER, AND THEIR ANSWERS.

By B. C. LOVELAND, M.D.,

Clifton Springs, N. Y.

In the routine of a doctor's life a great portion of his time is taken up in answering questions, and sometimes it requires much patience and the exercise of the greatest tact and ingenuity to give answers which will either satisfy the patient's curiosity or convince him of the wisdom of the order that may be the subject of his inquiries. In the present day, when the practice of medicine has become so far removed from the old-time practice of "physic" and the physician has to depend on his knowledge of physiological law, and the thoroughness with which he enforces obedience to physiological law among his patients marks his degree of success, the questions elicited by the regulations he may impose may be of great importance, for the patient to-day is a rare one who will go ahead and unquestioningly obey the advice of the physician, and who will not, like the proverbial boy, always have his mouth set for "Why?" In trying to induce my patients to drink the amount of water, nine or ten glasses a day, regarded as a physiological necessity by the medical profession, I have been met with a host of questions, mostly raised as objections, some samples of which, with their answers, will comprise this paper, and my hope is that they will help some one who is trying to secure obedience to this part of nature's requirement.

"Will not water make me fat?" It is a well-known fact that most people dread becoming unduly fat, and this question is a very common one. The answer is yes and no. Water will make you fat if it increases your ability to assimilate food, if by drinking more water you are enabled to take into the system more of the food that you eat. In no other way will it make you fat. There is evidently no fat in water. It will not make you fat if your digestion is perfect already, and you do not eat a great abundance of such foods as produce fat. In fact I have often seen people reduce fat, who needed to do so, by drinking a large quantity of water and using a properly regulated diet.

"Will not so much water strain my kidneys?" is another question which is asked almost as frequently as the preceding one. The answer is simple. Water does not strain the kidneys any more than more help in building a house strains the workmen. The excretion of the kidneys is twofold—water and certain other materials which are the result of the wear on the tissues. This water is the vehicle in which are carried in solution all the ingredients of waste tissue which the system is trying to get rid of. The flow of water through the kidneys to the bladder simply furnishes a current in which to carry off the dissolved detritus; therefore the drinking of a physiological amount of water cannot strain the kidneys.

"If water will thin my blood when it is too thick, will it not make it too thin if I continue to drink so much?" This question is often asked by patients of plethoric habit and lithæmic tendencies whom I am trying to impress with the necessity of getting the system thoroughly washed out, and the question seems a logical one. The answer, however, makes it plain. The blood craves a certain percentage of water; that certain percentage it will take up and hold, providing a continual supply is being added, but with the blood pressure and circulation automatically regulated by the mechanism which is called the sympathetic nervous system, and with the ready outlet afforded by the kidneys, all water taken in above the amount required to keep the blood at its normal proportion of fluid and solid is passed on, through, and out, and does its duty simply by washing the system of its impurities. It is

often the case that water given in free quantity to a patient suffering from anæmia so assists the digestion that it will help thicken the blood, while in a person of plethoric habit the action is quite the reverse.

"Will drinking a large amount of water continuously produce catarrh of the bowels or bladder?" This question has been seriously asked by patients, from the fact that a person unaccustomed to drinking the physiological amount of water finds the first effect of drinking such an amount to be the necessity of a frequent evacuation of the bladder, and not infrequently it may also cause looseness of the bowels. But we find by experience as well as by logic that the use of such an amount of water as is a physiological necessity does not produce catarrh of the bladder, but rather helps such troubles by so diluting the urine as to render it less irritating, thus giving nature a chance to cure the trouble. And not infrequently catarrh of the bowels may be due to an insufficient elimination by the kidneys, in which case the bowels attempt to take up work left undone by the kidneys, and the expression of this effort is indicated by the catarrh, which will be relieved by drinking a sufficiently large quantity of water.

"Will not drinking water make me perspire unduly?" Drinking water up to the physiological amount in the case of a person who has not perspired for years, owing to a lack of sufficient water, may temporarily produce excessive perspiration, such perspiration lasting only, like the flushing of the kidneys, until the system has been relieved of the poisons that can be excreted in that way. In other words, free action of the kidneys and skin, following the use of a normal amount of water when the patient has been for a long time deprived of that amount, is only nature's expression of joy at having once received her deserts.

"Will not cold water chill my stomach and thereby cause harm?" The reply to this question is, unduly cold water might; ice water, for instance; but water at a temperature making it pleasant to drink, say from 45° to 60° F., will not chill the stomach. An illustration from nature is shown in the fact that nearly all our springs are cold, very few hot. Most of the water we drink should be cold; hot water should be used for other purposes than to supply the system with the necessary fluid.

But my patient says: "Water drinking gives me gas on the stomach, and if it does so I should not drink it, should I?" Why not? There is no gas in water. If gas appears in the stomach, or is noticed in the stomach after drinking water, it simply shows that gas was there before, and the water, displacing the gas, causes more or less eructation, and is frequently one of the best methods to relieve the stomach of gas.

"Doctor, if water turns sour on my stomach, I suppose it is a sign that water disagrees with me, isn't it?" Water does not turn sour in any one's stomach. It may bring to the knowledge of the patient the fact that an acid condition exists in the stomach, in the same way that it brings to him the knowledge of the presence of gas in the stomach, but it will not produce acidity any more than it will produce gas, and if acid is in the stomach it was there before, and instead of making it worse water will manifestly make it better. The more water we put into vinegar the less acid it is, and the more water we put into the stomach the less concentrated will be the acid, be it fermentation acid or not. Consequently the answer to this question is that it is not a sign that water disagrees with a person, but a sign that something else needs attention, and the water is not contraindicated.

"Will not water, drunk at meals, retard digestion?" In a majority of cases the answer will be, No. It does not retard digestion unless it is drunk in undue quantity, and used as a means of washing the food down, to save the labor of properly masticating it and mixing it with saliva. A moderate quantity of water in most cases aids digestion by increasing the fluidity of the contents of the stomach, and thereby favoring the admixture of the gastric fluid with the food.

"Shall I drink hot or cold water?" The use of hot water is valuable when there is pain or distress in the stomach, and should be then favored. In the case of a delicate, sensitive stomach, when the patient cannot be induced to drink the necessary amount of cold water it is often easier to get him to take it hot, but for general purposes most of the water drunk should be used cold, or cool, for the tonic effect of cool water on the stomach is greater than that of hot, just as its tonic effect on the skin is greater.

"I should not drink water, should I, unless I am thirsty?" The reply to this question is that the lack of thirst in a grown person is no indication of his need of water or not. A child is always thirsty, and we would be thirsty at proper intervals, so that the appetite would be a guide, if we did not from preoccupation or some other cause which makes us inattentive to the impulse neglect it, until we find it often absent altogether. When such a condition exists, manifestly thirst is not to be regarded as an indication of the patient's need, for many patients say they are never thirsty.

Several of the questions asked and answered in this paper owe their origin to theories that have come down from our ancestors in medicine, and perhaps from our grandmothers, who were not our ancestors in medicine. The absurdity of the old-time notions about water may be well illustrated by the following extract, on the medical view of the use of water about three centuries ago, taken from *The Hospital:*

"It needed a very bold man to resist the medical testimony of three centuries ago against water-drinking. Few writers can be found to say a good word for it. One or two only are concerned to maintain that 'when begun in early life it may be pretty freely drunk with impunity,' and they quote the curious instance given by Sir Thomas Elyot in his 'Castle of Health,' 1541, of the Cornishmen: 'Many of the poorer sort, which never, or very seldom, drink any other drink, be, notwithstanding, strong of body and like and live well until they be of great age.'

"Thomas Cogan, the medical schoolmaster of Manchester fame, confessed in his 'Haven of Health,' 1589, designed for the use of students, that he knew some who drank cold water at night or fasting in the morning without hurt; and Dr. James Hart, writing about fifty years later, could even claim among his acquaintance 'some honorable and worshipful ladies who drink little other drink, and yet enjoy more perfect health than most of them that drink of the strongest.' The phenomenon was undeniable, but the natural inference was none the less to be resisted.

"Sir Thomas Elyot himself is very certain, in spite of the Cornishmen, that 'there be in water causes of divers diseases, as of swelling of the spleen and liver.' He complains oddly also that 'it flitteth and swimmeth,' and concludes that 'to young men, and them that be of hot complexions it doeth less harm, and sometimes it profiteth, but to them that are feeble, old, and melancholy, it is not convenient.'

"'Water is not wholesome cool by itself for an Englishman,' was the version of Andrew Borde—monk, physician, bishop, ambassador, and writer on sanitation—as the result of a life's experience. And to quote the 'Englishman's Doctor':

> "'Are enemies to health and good digestion,
> Both water and small beer, we make no question.'

"But the most formal indictment against water is that of Venner, who, writing in 1622, ponderously pro-

nounces: "To dwellers in cold countries, it doth very greatly deject their appetites, destroy the natural heat, and overthrow the strength of the stomach, and consequently, confounding the concoction, is the cause of crudities, fluctuations, and windiness in the body.'"

CASES OF LONG-RETAINED PLACENTA FOLLOWING ABORTION.

BY NEWMAN T. B. NOBLES, M.D.,

CLEVELAND, OHIO,

DEMONSTRATOR OF ANATOMY AND ASSISTANT DEMONSTRATOR OF SURGERY, CLEVELAND MEDICAL COLLEGE.

THE following cases are important as illustrating how long the placenta may be retained *in utero*, after escape of the fœtus, unless they are removed by early manual interference.

CASE I.—Mrs. D—— was pregnant for the second time, four months advanced. She concluded not to have this child, so after repeated efforts with drugs she at last succeeded in puncturing the membranes. After several hours the fœtus was expelled, followed a few hours later by a substance which the attending physician pronounced placenta, but which, in the light of subsequent events, must have been coagulated blood. At any rate the hemorrhage continued, with the exception of short intervals, for twenty-two days, unabated in spite of all efforts to control it. Ice was employed both externally and internally, the vagina tamponed; ergotin, iron, and quinine were given in massive doses, whiskey and brandy without restriction—all with no effect so far as the hemorrhage was concerned.

Finally, after the woman had flowed for over three weeks, the physician resigned the case or was discharged, and I was sent for. I found the patient in a deplorable condition, presenting all the classical symptoms of alarming hemorrhage. Digital examination showed a rigid os uteri; the womb was anteflexed and much larger than normal, even after an abortion. I naturally concluded that the placenta had not been expelled. The friends and relatives insisted that both they and the former attendant had seen the afterbirth three weeks before, and I must be mistaken. I was determined to be satisfied as to the true condition, and so the cervix was dilated, and then digital examination revealed a soft, fleshy mass in the uterine cavity, firmly attached to its internal parietes. With curette and placental forceps a well-organized placenta was removed. The membrane was normal in appearance and fortunately non-putrescent. The after-treatment consisted of antiseptic intra-uterine injections, nourishing diet, and the usual drugs. A good recovery was the result, though the convalescence was tedious.

CASE II. — Mrs. K ——, aged twenty-eight, the mother of four children, suffered from abortion caused by fright on March 14, 1896. The fœtus escaped during the night, and the next day the woman went about the house as though nothing had occurred. After a few weeks an offensive sanguineous and excoriating discharge appeared. Soon her health began to fail and she became greatly emaciated. During this time a physician attended her. On June 29th, over three months after the abortion, she was suddenly taken with a most profuse hemorrhage. It stopped for forty hours and then began afresh. Finally, twenty days after the flooding and one hundred and twenty-five days subsequent to the abortion, I was called in. As in the previous case, the uterus was enlarged and anteflexed, and the os was so contracted that it was next to impossible to introduce a sound. After it had been dilated sufficiently a large, soft, fleshy mass attached to the uterine walls was discovered. This when removed proved to be a well-organized placenta. After the operation the patient went into profound shock and for hours her life was despaired of. She rallied under the liberal use of stimulants and made a good recovery. A slight rise in temperature appeared forty-eight hours after the operation, but this disappeared upon intra-uterine injections of antiseptic solutions.

GANGRENE OF THE LEG FOLLOWING TYPHOID FEVER; AMPUTATION BELOW THE LINE OF DEMARCATION; RECOVERY.

BY J. Q. ALLEN, M.D.,

MONTROSE, COL.

ON September 26, 1896, I was called to see a girl, sixteen years old, living five miles in the country. She had been quite sick for some days, and I found a well-established case of typhoid fever. This ran the typical course of a severe attack for four weeks, when on October 24th indications of gangrene appeared in the left foot and leg. Just before this there was evidence of the fever having spent its force. The circulation was not good and the extremities were cold. I ordered mild stimulants and artificial heat. Several bottles were filled with hot water, wrapped in flannels, and laid alongside the legs. By some means the covering of the bottles became displaced and the hot glass came in direct contact with the skin, producing numerous blisters on the lower part of the leg. The discoloration spread out from these blisters, but I am convinced that there was first an occlusion somewhere in the course of the main artery. In a few days a well-defined line of demarcation was formed, about six inches below the knee.

Then came the perplexing question of what was best to be done. With a pulse above 160 and so weak as to be almost imperceptible, temperature of 105.5° F., rapid shallow breathing, and complete unconsciousness, death appeared imminent. Whether "to become executioner" by attempting to amputate in the ordinary way, or to allow her to die without an effort at surgical interference, was the problem which haunted me day and night. Finding no relief from literature, I decided to wait. Accordingly I commenced to poultice the dead limb, at the same time pushing the internal administration of sulphate of strychnine to the limit. The poultices were made large enough to cover every part of the leg from the toes to the knee, and changed every two hours day and night. Contrary to my expectation, she began to improve.

On November 7th separation commenced at the line and advanced rapidly, while healthy granulations soon appeared above. Without a precedent (that I know of) I decided to amputate below the line of demarcation.

Dissecting down carefully between the dead and living flesh, I reached the bones. The patient was still unconscious, and by the use of a small dose of chloral I was enabled to saw the bones, without her knowledge; nor did she know the leg was off for some weeks afterward. Thus nature and I performed an amputation without shock and without the loss of a drop of blood.

There was nothing very reassuring about her condition before the middle of December, after which time she improved rapidly. On May 24th, she having sufficiently recovered to allow the safe administration of chloroform, I split up the stump, turned back the flaps, and sawed off the protruding bones, without losing more than a tablespoonful of blood in the operation. The wound healed by first intention, and she is now, June 22d, able to ride about in a buggy.

I am fully convinced that had I attempted to give

an anæsthetic and amputate in the ordinary way, she would have died during the operation; and I am equally convinced that if more of these extremely weak patients were treated in this way a larger percentage of them would recover.

Clinical Department.

ANTITOXIN ADMINISTERED PER OS.

By J. LINDSAY PORTEOUS, M.D., F.R.C.S. Ed.,
YONKERS, N. Y.

Many of the readers of the Medical Record must have noticed the great dread some children have of the hypodermic syringe, especially the larger-sized syringe used in the administration of antitoxin, and the pain caused by injecting the comparatively large quantity necessary often makes the child scream and twist about (especially when competent assistance is not present), to the actual danger of seriously injuring the patient. In a case of severe diphtheria in a girl of eight years (mentioned below) the sight of my syringe almost caused a convulsive attack, and on no account would she permit me to use it. Having implicit faith in antitoxin and no improvement taking place with other remedies, I thought that if I gave it by the mouth there might be a chance of helping the little sufferer. After boiling a silver spoon I poured the liquid into it; the child swallowed the medicine, and said it had no bad taste and that she would take as much as I liked to give her. The results I will now give from my clinical notes, as also those obtained with other patients similarly treated: S. M——, aged eight years, complained of sore throat on April 28, 1897. I saw her on the 29th of the same month. On examining her throat I could see on the right tonsil four small whitish spots about the size of a pinhead. They at first did not give the characteristic wash-leather appearance of true diphtheria. I prescribed spraying with a saturated solution of boric acid, and a mild laxative. I took a culture from the fauces and on the 30th the bacteriologist reported numerous Klebs-Loeffler bacilli. I ordered the throat to be painted with iron and glycerin. On my visit in the morning of May 1st, the patient said she felt better; she had less pain and she had no fever. May 2d, I found a large patch on both tonsils, of more characteristic appearance. The temperature was 102° F. and treatment was continued. May 3d, 10 A.M., the patches were much larger, extending over almost the whole of both tonsils and a part of the soft palate. The temperature was 103.4° F. At 8 P.M. I gave by mouth one thousand units of antitoxin. May 4th, I found that the patient had slept fairly well, and retained the draught. At 9 A.M. her temperature was normal and the patches of membrane were partly curled up. On May 5th, considerably more than half of the membrane had disappeared. May 6th, very little membrane was left. May 7th, the membrane had entirely disappeared. A culture was taken one week after this, and the bacteriologist reported no bacilli. I consider the case a most typical one, and had it been a unique one it alone might prove that antitoxin is as beneficial when taken by the mouth as when given hypodermatically. But I carried my experiments further and with the same success, as the following brief notes demonstrate:

F. W——, aged eight years, boy, complained of a sore throat on May 6th. May 7th, I found two large patches on both tonsils. The temperature was 102° F. I gave one thousand units of antitoxin by the mouth. May 8th, the temperature was 100° F. The patches seemed much smaller. May 9th, the temperature was normal. There was very little membrane visible, but there was a good deal of tonsillitis. May 10th, the membrane had entirely disappeared. May 15th, the culture showed no Klebs-Loeffler bacilli. Inflammation of the tonsil was much less.

About the same time I treated three other children, in ages ranging from five and six to ten years, in the same way, and all made excellent recoveries.

If this mode of administration has been tried before, I am not aware of it. My object in writing these notes is to prove that the antitoxin of diphtheria is not rendered inert by changes in the stomach, and that this is an easy method of giving it to nervous children.

A CASE OF MUSHROOM POISONING.

By L. L. VON WEDEKIND, M.D.,
[illegible]

The interest attaching to this case is not that in it there is anything new, so far as symptoms or treatment are concerned, but it is in the violent and alarming results following the ingestion of a small quantity of a poisonous fungus.

The patient, aged thirty-seven, an officer in the naval service, is much interested in botany, and up to a short time ago believed himself to be quite an expert in the classification of the different varieties of mushrooms growing in this section. He is a habitual smoker, using strong tobacco in the pipe—which habit has, I believe, blunted to a considerable degree his acuteness of taste. This particular fungus, differing in many ways from those usually found, excited his interest, and he, believing it to be of the variety Amanita, tasted a small portion, intending to expectorate it in the event of finding the pepper taste. Owing to the blunted acuteness of taste he failed to detect the "pepper," and swallowed a small bit of his specimen—calculated to be about one-tenth of the whole. Immediately after swallowing it acute burning of the pharynx occurred, and he realized that it was a poisonous variety. He hurried home, walking about one-half mile, and while on the way was attacked by vomiting and purging. After thoroughly emptying the stomach and bowel he fainted, and was discovered by some men, who brought him around with cold water and assisted him to his home, where he again fainted. The purging and vomiting continued almost constantly for six hours, when I was sent for.

I found him with pupils minutely contracted; pulse, 120; temperature, 105.5° F.; markedly prostrated, and making violent efforts at emesis. He had taken a dose of olive oil and whiskey, which was not retained. He was given a cold bath, reducing the temperature to 102° F.; one-fifteenth grain of atropine, and later one-thirtieth grain of strychnine; also one-half ounce of castor oil and twenty drops of tr. opii. He retained the oil one hour, and then vomited. The pulse eight hours later was 60; temperature, 104° F.; there were constant delirium and hallucinations, very profuse perspiration, very great thirst, and abdominal pain. He could retain nothing on the stomach. Heat was applied to the abdomen and an ice cap to the head, atropine and strychnine were given alternately, and cold baths frequently when the temperature warranted.

This condition—high temperature, slow pulse, great gastric irritation, insomnia, constant delirium and hallucinations, with very marked asthenia—lasted for four days. Morphine was injected in large doses, one-half grain every eight hours, causing some sleep and allaying for a time the great effort at emesis; the stomach and bowel were cleansed with warm boric

solution. I made no effort to feed the patient, as both stomach and rectum were intolerant. Mustard was used quite liberally on the abdomen and hot water bags were applied to the sides and back. The hallucinations were present at all times for a period of seventy-two hours, and these, with the slow pulse and high temperature, caused a suspicion of some cerebral trouble, depending possibly upon the poison for its origin.

After four days the acute symptoms subsided and were followed by a typhoid condition, with a morning remission and an evening rise to 104°–105° F. for about one week, when convalescence was established. The patient showed marked evidence of his illness in his appearance after recovery, but gained very rapidly after the fever abated. Feeding was resumed on the fifth day, clam broth and milk with Vichy water being the main support. Cold baths controlled the temperature.

U. S. N. [illegible], Annapolis, Md.

TRIPLETS.

BY J. TRACY MELVIN, M.D.,

[illegible]

PERMIT me to report, merely for statistical purposes, the following case of triplets, there being nothing unusual except that fact. Mother, aged thirty-four, married fourteen years. Seven children, all single pregnancies. Health good. Labors normal. No plural pregnancies among her relatives. Father, aged thirty-six, laborer; average health and size. One sister had twins once, but the family has not been specially prolific. This pregnancy was marked even in its early weeks by severe abdominal pain of a stretching nature, at irregular intervals. These pains became so severe during the later months as to confine the woman to the bed a part of the time.

I was called on the two hundred and forty-third day after menstruation and the two hundred and thirty-sixth day after the probable date of conception. There was a slight bloody flow with very slight pains in the back. The cervix was effaced and the os was very slightly dilated. It was a vertex presentation. I had previously diagnosed twins. I gave an anodyne and the patient rested well for twelve hours, when a slight labor pain caused the friends to send for me again. The presenting child was born with one pain, the second of the labor; it weighed four pounds. Without tying the cord I waited for the second child, which was born with one pain, breech presenting, five minutes later; weight, three and three-fourths pounds. After tying the cords and instructing the nurse, I turned to examine the mother, who was complaining of the most severe labor pain yet experienced, and found the uterus still large and a third child presenting by the vertex. Two very moderate pains expelled it, a girl, who weighed five and one-fourth pounds. Ten minutes later two placentas were delivered—one weighing twenty-two ounces and connected by two distinct cords with the two children first born; while the second, weighing fourteen ounces, was wholly distinct and connected with the last born. The two children first born presented every appearance of being of at least two weeks shorter gestation than the last born, which was evidently of about eight months' development. The children were thoroughly oiled, their faces and mouths were washed, and they were placed without dressing in a box containing bottles of hot water and plenty of cotton batting. The mother passed an uneventful puerperium with no unusual flowing, and furnished an abundant quantity of milk for all the babies, who are now a month old and have gained eight, nine, and twelve ounces respectively.

ACUTE ARSENICAL MULTIPLE NEURITIS FOLLOWING THE ADMINISTRATION OF FOWLER'S SOLUTION IN A CASE OF CHOREA.

BY PHILIP MEIROWITZ, M.D.,

[illegible]

MAY W——, the patient, is a schoolgirl, thirteen years of age. She came to the clinic, October 5, 1896, suffering from an attack of Sydenham's chorea. This was perhaps the fourth or fifth attack of St. Vitus' dance that she has had. Her first attack dates back three or four years. The second attack occurred about a year ago. During the past twelve months she has had several attacks, with intervals of rest of about three or four months. The arms, legs, and neck were principally involved. The face, excepting the eyelids, escaped. The upper extremities were more affected than the lower. There was considerable weakness in the arms; she could with difficulty hold objects in the hands. For a time her speech was affected. The choreic movements continued during sleep and appeared to be worse than during the day. Sleep was often interfered with. There had never been any mental disturbances aside from a certain degree of dulness. She is thin and undeveloped for her age.

A week and a half before she came to the clinic she complained of a sense of stiffness in the knees, but had no difficulty in walking. A few days later she had the sensation of "pins and needles" in the soles of the feet, the legs became weak, and she experienced severe spontaneous pains in the lower extremities below the knees. Friction of the legs was extremely painful. Walking was interfered with to such an extent that she was confined either to a bed or to a chair during the entire week preceding the visit to the clinic. Shortly after the pains appeared in the legs they were felt in the upper extremities, which also became painful to the touch. It was with very great difficulty that she was brought to the hospital.

Her examination at that time showed the following: Once seated in a chair, it was with the greatest difficulty that she could arise, repeated efforts being unsuccessful. She had to employ the arms, exerting downward pressure on the seat of the chair or seizing hold of some neighboring object. Standing alone or walking unaided was entirely beyond her ability. Her gait was markedly ataxic; the legs were raised somewhat higher than normal, and the toes touched the floor first, the heel following. There was considerable emaciation, which, as the mother of the patient explained, developed rapidly after the onset of the pain in the extremities. The left upper arm was decidedly thinner than the right. This discrepancy in the size of the superior segments of the arms was observed by the mother last summer. At that time and previously the child had made no complaint which might have been referred to this region. Measurements of the upper extremities gave the following:

	Right.	Left.
Middle upper arm.	6¼ inches.	5¾ inches.
Upper third of forearm. . . .	6¼ "	6¾ "
Lower third of forearm. . .	4⅞ "	4⅞ "

The muscles in all of the extremities were quite soft and flabby, and painful to manipulation. The movements on the right side were somewhat better than those on the left. In testing various groups of muscles it was found that the grip was very weak, even when the hand was passively extended. She could not cause the index hand of the dynamometer to move when she exerted her strength. Extension of the fingers was imperfectly performed. She could not spread the fingers well, or accurately touch the tips of

the fingers with the tip of the thumb. There was partial drop wrist. Flexion of the wrist was extremely weak. The movements of the forearms and upper arms were relatively stronger, yet were under the normal. The flexed forearms could be passively extended without the slightest effort, even when the patient exerted herself to the utmost. Extension of the forearm was stronger than flexion, and the patient resisted fairly well efforts to overcome it. The muscles of the shoulder seemed not involved.

Turning to the lower extremities, it was found that the legs below the knees were cold to the touch; the feet were slightly warmer than the legs. The muscles were soft and flabby and hyperæsthetic to pressure, more so in the legs than in the thighs. The knee jerk could not be elicited in either leg. The movements of flexion and extension of the thighs and legs were weak. There were typical drop feet. It was impossible for her either to extend or to flex the feet.

Tactile sensation was in the main normal. There were some slight disturbances to touch in the hands and feet. Sensation to mechanical pain, such as that produced by the point of a pin, was normal; but the pain resulting from the application of a strong faradic current was not felt in the legs by the patient. The temperature sense was not affected; she could easily distinguish between a hot and a cold test tube.

The electrical examination discovered marked reduction of the faradic irritability of the muscles of the legs. The reaction to faradism in the arm muscles appeared normal.

There had never been bladder or bowel troubles.

Since August 17, 1896, when she first came to the clinic—*i.e.*, in the period of seven weeks—the patient has taken four ounces of Fowler's solution. She began with five-drop doses three times daily, and each day increased the dose by one drop, until she was taking fifteen drops. She then began to vomit and there developed some œdema of the eyelids. The dose was now reduced to ten drops, at which the medicine was continued up to a few days prior to the examination, when only five drops were given.

202 West One Hundred and Third Street.

A SOMEWHAT UNIQUE CASE OF SPONTANEOUS FRACTURE OF THE CLAVICLE.

BY THOMAS H. MANLEY, M.D.

On the 16th of September a case of clavicular fracture came under my care, in the West Side German Dispensary, which belongs to a very rare class, and seems to me to be of sufficient interest to be incorporated in the annals of surgical literature.

The patient was a man, thirty-four years old, married, American; by occupation a billiard player. He seemed to be a person of good physique and was free from any organic malady. He denied specific disease, and in no structure was there evidence of tubercle or cancer. He never before had sustained a fracture, said he had never had epilepsy, and was not addicted to excesses of liquor. For the past ten years from time to time he had had rheumatic pains in the knee and ankle joints, but had never had acute rheumatism.

He said he retired the night before in his usual good health, at about eleven o'clock. At about three in the morning he was suddenly awakened by a severe, most distressing pain, which involved the whole shoulder and extended down the arm into the hand on the left side. He was startled to find that he was entirely unable to move the arm without producing the most agonizing pain in the shoulder. The use of thermal applications and liniments only aggravated his condition, as the surface was hyperæsthetic and no motion at the joints could be tolerated.

On examination it was noted that he was pale, of a plaintive expression, with a weak pulse, but had no elevation of temperature. As he stood up the left shoulder was noticed to be much lower than the right, and the hand on that side was carried in an opening of his coat, which supported the arm as a sling. When the chest was stripped, on viewing it from the front a well-marked deformity of the outer aspect of the left clavicle was evident. Now by seizing the arm and making gentle motion, it was seen that there was a complete fracture at the outer third of the left clavicle with considerable overriding of the fragments.

In an examination of the literature on fractures by American and foreign authors, I am unable to find a record of any similar case; the nearest is found in Malgaigne's works ("Traité des Fractures," vol. ii., p. 464). He publishes the case of a young robust woman, who fractured the clavicle by turning over in bed.

All surgeons are agreed that this fracture commonly results from muscular action in any violent motion or exertion of the body or the shoulder; but there is no record of any instance in which, as in this case, muscular contraction was involuntary and the individual was entirely unconscious of any effort.

RITUAL CIRCUMCISION.

BY ARTHUR STERN, M.D.,

[illegible] THE STERN [illegible] SEXUAL, ELIZABETH, N. J.

I was recently called to attend a child, ten days old, who had been circumcised two days previously. Upon inquiry it appeared that the operation—or, more properly, the cutting, since no attempt at stitching had been made—had been done by the ritual circumciser, who directed the family to dress the wound with a piece of lint well soaked in carbolic-acid water! I found the child cyanotic. Its wrappings were saturated with urine of a dark greenish color. The lint dressing had stuck fast to the wound. Around the penis at the scrotum, in the inguinal parts, and wherever the solution had touched the skin, an erythema had developed. I immediately ordered that the application of the carbolic-acid water should be discontinued, that the child should be treated with a talcum preparation, and should have an abundance of liquid, with a view to getting the desired diuretic effect on the kidneys. In addition to this I prescribed a solution of bicarbonate of sodium. The next morning the child was somewhat better; cyanosis had disappeared, and the urine was of a lighter color. The child recovered finally.

Cases similar to the above have been reported by Bogdanik and Melzer.

The rite of circumcision is so firmly intrenched in many minds as a desirable custom—partly for its supposed therapeutic value, but more especially by reason of its religious sanction—that opposition to it would perhaps meet with little result. But it does seem, from the data at hand, that some measure of skill and care should be exacted of those who take upon themselves the task of performing the operation. It is true that great numbers of children undergo this operation every year, and that the reported cases are comparatively few in which death or even serious sickness is alleged to be its result. Reported cases, however, usually have in them something exceptional. It is well known that many minor evils and some very grave ones are justly chargeable to the carelessness and want of skill with which the circumcision is done.

An excellent treatise on the delicacy of this operation, and the danger to life and health involved in its

being carelessly done, is given by Dr. Löwenstein, in vol. 54, part iv., of the *Archiv für klinische Chirurgie*. Dr. Löwenstein is strenuous in insisting that no ritual operator should be allowed to circumcise until he has first received a modern hygienic education and knows something at least of latter-day methods. He submits it to be an outrage that an operation pregnant with so many possibilities to the life and health of the young should be intrusted to an ignoramus. I apprehend there are few physicians who do not share his views.

218 East Jersey Street.

Progress of Medical Science.

The Protective Activity of Anthrax Serum.—Sobernheim (*Berliner klinische Wochenschrift*, October 18, 1897, p. 910) has shown that the blood of oxen, sheep, and rabbits treated with attenuated cultures of anthrax bacilli, and thus rendered immune to infection with virulent anthrax bacilli, appears to contain no specific protective substances. The treatment of rabbits with the serum of such animals was attended with the slightest protective influence. Nor were specific properties found in the blood of oxen that had recovered from attacks of anthrax occurring spontaneously; and a like result was observed in the case of a man. In animals treated for a long time with virulent cultures, however, with the development of active immunity, specific changes in the blood were found. The blood serum of calves thus treated proved capable of conferring only relative immunity upon rabbits, but complete immunity upon sheep.

Recovery from Hemorrhagic Purpura following Treatment with Injections of Artificial Serum.—Pigot (*Gazette Hebdom. de Méd. et de Chir.*, October 17, 1897, p. 990) has reported the case of a debilitated patient who had been suffering for two weeks with symptoms of hemorrhagic purpura and bleeding from the gums. The whole body was covered with hemorrhagic areas, which were especially marked upon the extremities. Blood was also discharged by the bowel. There was complaint of a painful sense of burning in the epigastrium, and the breath was fetid. On auscultation a small cavity was found at the apex of the left lung. The liver was slightly enlarged; the spleen was normal. The temperature was elevated. Ferric chloride, ergotin, and lemons were administered, and a mouth wash of potassium chlorate was ordered, but no improvement followed. Finally two hundred and fifty cubic centimetres of artificial serum was injected subcutaneously, and within twenty-four hours marked improvement had taken place. A second and a third injection of the same amount of fluid were given on successive days, and within forty-eight hours convalescence set in and progressed to ultimate recovery.

Chorea Complicated by Pregnancy Relieved by the Induction of Abortion.—Collier (*Birmingham Medical Review*, October, 1897, p. 243) has reported the case of a married woman, twenty-one years old, with a child a year and a half old, who came under observation suffering from chorea, affecting chiefly the head, the face, and the right arm. The choreic movements had begun six months previously, following a severe fright from being nearly run over by horses. In spite of treatment the movements had increased in severity. On examination it was found that the woman was about four months pregnant. The heart sounds were normal and there was no history of rheumatism. Treatment with arsenic, and later with chloral, bromides, morphine, sulfonal, inhalations of chloroform successively failed, and maniacal symptoms developed, with evidences of exhaustion. The induction of abortion being decided upon, under chloroform the cervix was dilated, the membranes were ruptured, the vagina was plugged, and a hypodermic injection of ergotin was given. Labor failing to set in within twelve hours, chloroform was again administered and the cervix further dilated; two fingers were introduced into the uterus, a leg was pulled down, and a five-month's fœtus delivered, the placenta coming away a few moments later. The uterus was thoroughly washed out with a strong solution of iodine. The temperature rose within a short time to 105.8° F., but was reduced two or three degrees by sponging, and it gradually fell to normal during the following twenty-four hours, five grains of quinine sulphate being given every fourth hour. From now on the patient made rapid improvement, the movements becoming less and less marked, and eventually ceasing.

Hydrophobia of Long Incubation.—Feltz and Archambaud (*Gazette Hebdom. de Méd. et de Chir.*, September 30, 1897, p. 925) have reported the case of a man, twenty years of age, previously in good health, who after several days of dissipation was seized with chill and difficulty in respiration. The temperature was normal, the pulse not accelerated. There was complaint of pains radiating from the sternum, and difficulty in swallowing. In a short while the face became pale, the expression terrified, the eyes deep. There was intense dyspnœa, with pharyngeal spasm and inability to swallow; also precordial pain, radiating toward the left arm. After a while furious delirium set in and sanguinolent froth was ejected from the mouth. Respiration and pulse became accelerated, the pupils dilated, cyanosis developed, and death ensued. A diagnosis of hydrophobia was made, and on inquiry it was learned that the patient had been bitten on the lip six and a half months previously by a rabid dog.

Origin of Pressure Deformities.—Ferd. Bähr (*Volkmann's klinische Vorträge*, No. 194, October, 1897) concludes that Julius Wolff's "transformation theory" is inadequate to explain the beginning stages of these malformations, and maintains that it is to the modified "Hüter-Volkmann pressure theory" that we must look for light on the earlier phases. After the deformity is fairly inaugurated, the author thinks that the Wolff theory comes into play and aids in the adaptation of the misshapen parts to the new conditions. The origin of pressure deformities shows the following steps: 1. Defective action of braces (ligaments, etc.), with lessened power of resistance of bone. 2. Unfavorable pressure, with (*a*) deformity of epiphyses, (*b*) deformity of diaphyses (curvature), or (*c*) both at once in varying proportions. 3. Adaptation of deformed bony parts to the new relations.

Chylous Ascites in the Course of Cancer of the Stomach.—Drs. Hertz and Georges Luys (*La Presse Médicale*, October 9, 1897) report the case of a woman whose history gave no evidence of neoplasm of the stomach. On her entrance to the hospital she presented phenomena of ascites, necessitating abdominal puncture. A white milky liquid was drawn off, the chemical analysis of which showed chylous ascites. At the autopsy cancer of the stomach was found spreading to the pancreas, as well as to the perigastric ganglia, and continuing in the form of a thick vein all along the aorta to the point of origin of the renal arteries. Histological examination of the neoplasm showed it to be typical epithelioma. It would seem in this case, as in the similar instances of Straus and Whitla, that rents in the thoracic duct caused by the cancer were to blame for the chylous ascites. Dr.

Letulle thinks that this case confirmed the necessity of a rigorous differentiation between chylous and chyliform ascites, these two kinds of peritoneal effusions arising from different causes. Letulle mentions a case of temporary chyliform ascites in a woman affected with cardiac cirrhosis. At a given time the ascites was sufficient to necessitate numerous punctures; the first of these would give a clear pale yellow fluid; then without any known cause the liquid would cease to be clear and become chyliform; then this aspect would disappear, and the later punctures would again yield the clear yellow fluid. This does not seem to have any plausible explanation. Dr. Letulle has also observed temporary chyliform ascites in children. Some autopsies have shown that in these cases the chyliferous vessels are damaged; these are then instances of chyliform and not chylous ascites. Dr. Iroisier recalls the fact that he has already reported three cases of cancer of the throracic duct; two of these were not accompanied by chlyous effusion, the third did not even present ascites. Chylous ascites would seem to be the exception in the course of cancerous degenerations of the thoracic duct. Rupture of the thoracic duct seems improbable. The consequences of cancerous infiltration of the walls are in effect a thickening and a diminution of the lumen of the canal, a diminution which has as its consequence a complete and fatal obliteration of the canal. In these conditions it is easy to understand that the thoracic duct cannot rupture. It ruptures only where the structure is normal. Variot thinks that there exists a relation of cause and effect between the *régime* of the patient and the chylous appearance of the ascitic liquid. In a child having chronic nephritis and kept on a milk diet for five months, there followed a chyliform ascites. It is necessary to add that in this case the blood serum was milky, and Dr. Variot thinks that there was a correlation between these different symptoms.

Search for Lead in the Salivary Glands in Acute Lead Poisoning.—Dr. Renon (*La Médecine Moderne*, October 5, 1897) has noted the presence of lead in the salivary glands of two guinea-pigs poisoned with white lead. These were the only positive results obtained from the examination of ten guinea-pigs which had succumbed after receiving for nine days either red or white lead mixed with their food. These facts, analogous to those reported as observed by Ellenberger and Hofmeister in sheep inoculated by injection of plumbic acetate beneath the skin, are interesting by reason of the rôle lead plays in certain forms of parotiditis in man.

The Care of the Perineum in Labor, and its Repair afterward.—Upon the basis of an extended clinical experience, Happel (*Memphis Medical Monthly*, November, 1897, p. 485) offers the following deductions: He insists that the condition of the patient before delivery should be accurately known, in order that all of her secretory and excretory organs may be suitably regulated. If leucorrhœa exists, hot douches, medicated when necessary, should be employed. If the patient be a primipara of advanced years, massage of the perineum and vulva before and during labor will be beneficial. During labor the physician should keep informed by educated touch as to the dilatability and degree of dilatation of the outlet. When labor is normal in every respect, the perineum will need little or no support, but the palmar surface of the hand should be ready to furnish support, should it be needed. When the perineum yields slowly and irregularly, the hand should be ready to give support at any moment, and this support must be given in a proper manner during the least expulsive pains. Chloroform should be employed freely and the woman exhorted not to bear down. In case of rupture, an immediate operation for repair should be undertaken, but for the purpose of determining the fact of a rupture it should not be necessary to subject the woman to indelicate and needless exposure. If educated touch cannot detect laceration, then repair is not needed. If doubt exists with regard to a laceration, careful inspection of the parts should be made. Slight fissures and abrasions do not need sutures. More harm may be inflicted with sutures by invasion of the deeper structures of the canal than good effected by closing these rents in the mucous membrane of the vagina. No other antiseptic is needed in primary operations than water, which should be boiled and used as hot as can be borne by the patient.

Diagnostic Importance of Exact Pulse Examinations.—W. Janowski (*Volkmann's klinische Vorträge*, October, 1897, pp. 192, 193) deprecates the modern tendency to regard lightly the information to be obtained from the pulse, and attaches much importance to the results obtained by an intelligent use of the sphygmograph. He recognizes eighteen forms of arterial pulse, which are to be grouped as follows: (*A*) Pulse whose characteristics are recognizable from the inspection of tracings of a single beat. 1, Pulsus durus; 2, pulsus mollis; 3, pulsus celer; 4, pulsus tardus; 5, pulsus magnus; 6, pulsus parvus. (*B*) Those forms which require for their recognition tracings of a succession of beats. 7, Pulsus frequens; 8, pulsus rarus; 9, pulsus irregularis; 10, pulsus embryocardia (a rapid, short systole, followed by an equally rapid and short diastole, the pause being altogether lacking); 11, double pulse, in which each beat is closely followed by another, a pause then intervening before the next beat (triple and quadruple forms are also found); 12, unequal pulse, characterized by unequal heights of the wave summits; 13, alternating pulse, in which small waves succeed larger ones in a definitely proportionate manner; 14, the so-called pulsus paradoxus, in which the character of the single waves is influenced by respiration; 15, alternating form of double pulse, in which the first of the two beats is larger than the second; 16, hemisystolia, two heart beats giving rise to but a single pulse wave; 17, condition of total arrhythmia, presenting differences in size and rhythm not governed by any rule perceptible; 18, pulsus differens, a pulse different in the two halves of the body. Each of the above is exhaustively but practically treated, and the value of the discussion is furthered by numerous reproductions of pulse tracings taken at the bedside.

Lupus Vulgaris.—A new treatment by currents of hot air has recently been introduced by Dr. Holländer, of Berlin, following out the suggestions for local treatment of various processes by hot vapor. An eschar is produced without involvement of surrounding parts, by simply overheating the diseased area. The instrument devised for the purpose consists essentially in a long, hollow, metallic arm, terminating in a fine point. Through the central opening a current of air is made to pass by means of a rubber bag, like that of the Paquelin apparatus, the extremity having been heated in a spirit-lamp flame. In this way a temperature of 300° F. or over may be utilized. The curative power of this superheated air is attributed to its antiseptic and hæmostatic qualities. It is thus suggested as a means of treatment in gynæcology, as well as for metrorrhagias and infectious processes. Illustrations of lupus before and after treatment are given in *La Presse Médicale*, October 30th, which gives an account of the new method. When applied to healthy skin the current of hot air produces a vasoconstriction causing

ischemia of the region acted upon, while in diseased areas with newly formed vessels such as exist in lupus, there is a rising up of the skin above the surrrounding surface. While healthy skin loses its pallor and regains the previous normal appearance after a few days, the lupus skin begins to mortify. A repetition of the operation several times, it is claimed, results in cure in mild cases, but those of moderate intensity should be kept under observation for three years before lasting cure can be claimed.

The Occurrence of Necrosis of Intestinal Glandular Epithelium in Cases of Diabetes Mellitus.—It is known that necrosis of the epithelium of various glandular organs may take place in cases of diabetes mellitus, and it has been supposed that the lesions were due to the elimination through the affected viscera of certain poisons circulating in the blood. Ludwig (*Centralblatt für innere Medicin*, 1897, No. 43, p. 1,105) reports a case, which he believes to be the first, in which such necrosis was observed in the glandular apparatus of the intestine. The patient was a woman, thirty-six years old, whose father had died of cirrhosis of the liver, one brother of diabetes mellitus, another of some acute pulmonary disorder, and a sister of erysipelas. The patient herself had suffered from repeated attacks of facial erysipelas. For a period of five weeks there had been noticeably increased thirst and an increased sense of hunger, as well as increased elimination of urine. In spite of the ingestion of an abundance of food, there were rapid emaciation and loss of strength. The appetite had, however, become impaired, and there were besides, headache, slight vertigo, and extreme languor. The knee jerks were preserved. The pulmonary percussion note was relatively impaired on the left side above and below the clavicle, and posteriorly above the spine of the scapula, as well as over the lower lobe. In the area first named expiration was accentuated, and in the last enfeebled. There was scanty expectoration, and no tubercle bacilli were found in the sputum. The amount of urine passed in twenty-four hours equalled about sixty-four ounces; the specific gravity was 1.025; a slight amount of albumin was present, together with sugar and acetone. In the sediment were found hyaline, granular and epithelial tube casts. The patient grew gradually worse and death ensued. Upon post-mortem examination the epithelium of the upper portion of the ileum was found discolored in small areas, readily detachable, and in some places actually wanting. Farther down there were transverse losses of substance, with distinct limitation and a hemorrhagic necrotic base. A number of areas of similar appearance were present also in the large intestine. Microscopic examination of the affected portions of intestine confirmed the supposition reached from macroscopic observation, that the lesions consisted in necrosis of the cylindric epithelium of the tubular glands. The appearances corresponded with those of a deep-seated cellular and purulent inflammation of the glandular epithelium, together with necrosis, and the conclusion is reached that the latter was the primary process in consequence of toxic influences related to the constitutional disorder.

Myxœdema in the Adult. Dr. Briquet (*La Presse Médicale*, October 9, 1897) calls attention to the following points as the most interesting in his paper on this subject: "A persistent thirst which yields to treatment is very marked with this class of patients. Marie found it necessary to discontinue the use of the thyroid body in his patient, as it caused an intense thirst. This disease usually follows overwork, prolonged fasting, late hours, and fatigue. It has been known to last nineteen years in spite of little nourishment being taken. We have no method of treatment as yet that can be relied upon. The history of the matter is brief. In 1890 grafts of the thyroid body were tried. Improvement was noted, but there were no cures by this method. In 1891 Murray tried hypodermic injections of thyroid extract. This treatment was then tried by others, and in the thesis of Derrien we find seventeen series of experiments related in detail. Howitz, of Copenhagen, in 1892, administered the natural thyroid gland, and his attempt was crowned with success, and he has many imitators. The thyroid gland of the sheep has two lobes, and Massée advises giving one lobe every day during the first four or five days, then a lobe every other day for two or three weeks. It is necessary to continue to give one or two lobes a week after cure. Vermehren has tried thyroidin, and in 1896 Baumann used thyroidin, also called idiothyrin. It has been this last remedy that has given the best results. The capsules that are employed are prepared with the same gland deprived of foreign elements, fat, etc. We should carefully note the symptoms that come on at the beginning of treatment. With our patients we noted enervation, vomiting, oppression, and severe pains in the limbs. Scarlatiniform erythemas followed by desquamation and pigmentation, urticaria, abundant perspiration, glycosuria, and sometimes a dangerous tachycardia have been noted. Several deaths have been reported, mostly of children, though there have been some fatal instances in adults as well. The necessity of close watching after the first doses cannot be too strongly emphasized. Since we do not know much about the active principle of the thyroid gland or the means of isolating it, the choice of medication will have to remain in abeyance. Thyroid glands may be more or less active, and the preparations will vary accordingly. Different trials made on stout persons give us reason to believe that as a fat reducing agent it is a weak preparation. We think in a general way that in myxœdema it is better to go slowly; the results will be obtained a little less rapidly perhaps, but they will not be the less brilliant for having been attained without danger. The etiology of this condition has been advanced through the researches of Reverdin, who has brought up a number of problems, however, which remain to be solved. Congenital atrophy, extirpation, functional suppression of the thyroid body bring about myxœdema; these are facts which we cannot explain. Does the thyroid body normally destroy a toxic substance which, after the extirpation of this body, accumulates in the blood? Or, on the contrary, does it secrete a substance necessary to nutrition, especially to that of the nervous system? These two hypotheses have been launched, but the fact that complicates research is the concomitance of myxœdema (the suppression of the thyroid body) and the disease of Basedow (hyperthyroidization), which is not impossible. In any case we cannot deny the importance of the thyroid gland in the nutrition of certain organs—that of bone, for example, as the occurence of dwarfishness proves in congenital myxœdema; in osseous lesions noted in animals deprived of their thyroid glands, to which Hofmeister calls attention; of the nutrition of the skin, either directly or more probably through the nervous system; such serious troubles being noted in subjects of myxœdema, in whom the ingestion of the thyroid body causes certain cutaneous affections. Hofmeister has also noted frequent lesions of the ovaries (atrophy or hypertrophy), which explains the entire absence of the menses in this disease. These facts suffice to show that in spite of the numerous works on this subject there is still a vast field for the study of the properties of the thyroid body open to the physiologist."

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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LIVING WITHOUT A STOMACH.

In these days of rapid progress in surgery, hardly anything in the way of brilliant venture in operative procedure is beyond the possibility of triumphant accomplishment. The history of the past compared with that of the present leaves so little to be anticipated that the most visionary prophet is hardly astonished when his wildest dream becomes a veritable reality. Even apparent impossibilities are made to yield to actual demonstration, and still newer and more difficult paths are constantly opening for such as do and dare.

The report of the remarkable case of successful extirpation of the entire stomach, in this issue of the MEDICAL RECORD, is a case in point which merits more than a passing reference. By the courtesy of the operator and the enterprise of our representative at Zurich, Dr. E. C. Wendt, we are enabled to publish for the first time a full and detailed account of this unique and most remarkable surgical feat. At last accounts the patient is still in good physical condition, having survived the operation three months. The result, in view of our generally accepted notions concerning the real value of the stomach, its physiological place in the economy, and the essential vital functions so long claimed for it, will strike all with becoming astonishment. It is rather an unexpected slight to what has always been considered one of the essential organs of the body, and one governing all others with undisputed sway and unquestioned autocracy, to imagine that it may not be of much use after all. Its fabled quarrel with the other parts of the body, in the story of Æsop, would appear in the present light as scarcely more than the mythical hypothesis of a wild and unreasonable fabrication. Whatever we may venture pro or con on the question at issue, the fact appears to be proven that the human subject can live and be reasonably active for months at a time without any stomach whatever, and obtain all the necessary digestion and nourishment from what remains of the intestinal tract. Is it possible that the latter may have a new set of functions not yet understood, or has the importance of stomach digestion been misapprehended and overrated? In any event we are now brought face to face with a very curious demonstration, which destroys the validity of many preconceived opinions and in a great measure nullifies the results of many previous experiments.

In the matter of a brilliant achievement the operation takes a first rank, and the daring and brilliant surgeon will receive the well-deserved congratulations of his peers throughout the world. He has opened the first chapter in a new history of surgical triumphs.

RECENT PERSECUTION OF FRENCH PHYSICIANS AND THE IMPENDING CHANGE IN CRIMINAL LAW.

THE barbarous peculiarities of the French penal code, which still considers every accused person guilty until he has clearly established his innocence, have received a fresh illustration in the case of a prominent physician residing near Paris.

The unfortunate victim of this "simple judicial error," as the French papers flippantly announce, was imprisoned for months on the absolutely unsupported charge of a hysterical girl, that he had taken undue liberties with her. On mere denouncement Dr. Rémond was literally dragged by brutal "police officers" from his private office to the common jail. Then, without being given the opportunity of a hearing, and with no chance of communicating with his lawyers, he was transported to the prison of Mazas. The latter, as is well known, is filled with degraded criminals of the worst class. Finally, after weeks of cruel suffering, the doctor succeeded in obtaining a hearing before a higher court. He easily proved an alibi, having been engaged in actual consultation with several colleagues at the very time of the alleged offence. He was, of course, completely vindicated and honorably discharged. But the law of France apparently allows him no redress, either against the family of the girl who conspired to ruin him or against the magistrate who so unjustly ordered his incarceration.

Meantime the affair is being exploited by the sensational press of Paris, in the interest, not of justice to the wronged physician, but of piquant sensationalism for admirers of prurient details. Bearing in mind our own Barbara Aub case, we do not wish to be overcritical; but at least we have wide-awake medical societies in our country, which can be counted on to take decisive action when, as in this case, flagrant injustice has been inflicted upon an honorable member of the profession.

It remains to be said that this case is but one of several which have recently "happened" in France, and which have attracted the attention of other countries. Even the staid old *London Times* feels called upon to print editorial condemnations of so truly mediæval a state of affairs. However, all this is soon to be superseded by more enlightened and humane methods of procedure.

Dr. Marie Louise Benoit was recently appointed from the civil-service list a medical interne in the Craig Colony for Epileptics at Sonyea.

THE BOARD OF ESTIMATE AND APPORTIONMENT AND ITS RELATION TO THE TAXPAYERS OF NEW YORK CITY.

On the 8th of December, as is well known to the readers of the MEDICAL RECORD, a large delegation of the physicians of the City of New York, supported and assisted by representatives from the Deutsche Apotheker Verein and from the West Side Taxpayers' Association, went before the board of estimate and apportionment to protest against the granting of public moneys for the use of private institutions, notably those of a medical character, and especially such as are connected with medical colleges. Notwithstanding the cogent arguments presented by the spokesmen for these various organizations, the protest fell upon deaf ears; indeed, it would almost seem as though the arguments advanced might just as well have been addressed to the trees in the City Hall Park as to the board, for all the effect that they had upon that body. It becomes, therefore, an interesting point to consider the relation which this board bears to the taxpaying public. The MEDICAL RECORD believes that it stands in the light of a trustee for the city to see that the moneys raised by taxation shall be used for public purposes and not for private ends, no matter how worthy those ends may be. Suppose that any one of the worthy gentlemen composing the board of estimate and apportionment were the trustee of a private estate; the MEDICAL RECORD is loath to believe that he would give one cent of the funds of the estate to a single one of the private charitable institutions upon which the public money was so lavishly bestowed, merely because the institution was such a worthy charity or because the trustee knew the directors of the charity. And yet these gentlemen in their corporate capacity did precisely this thing, and the act, although a public one, is just as culpable as though it had been done in a private capacity. It is high time that attention should be called to the iniquity of this proceeding, which is deserving of reprobation even though the raid on the city's treasury is done in the name of sweet charity, and this action is doubly iniquitous because some of these institutions do not stand in need of the money. The MEDICAL RECORD trusts that the doctors of New York City will not allow the matter to rest here, but will persistently and temperately urge upon the public and the profession the necessity of a decided change in the manner of dispensing public funds for private charities.

PROFESSIONAL TRADES.

THE exact position in the social scale occupied by practising physicians has at last been settled—at least so far as England is concerned—by the courts. Medicine as a vocation has been decided to be a trade. This might have caused no little feeling of injured pride on this side of the Atlantic, were it not for a most timely intervention on the part of one of our leading luminaries in the law. Justice Edward Patterson of the supreme court has just handed down his decision that law is a trade, and not that alone, but that lawyers have degenerated. This is not a strictly *ex-cathedra* dictum and might even be regarded in the nature of a private opinion, since it was expressed in a speech at the Phi Delta Phi Law Club. Words from such an authority, whether delivered on or off the bench, must be taken at their full worth.

We are glad to know from so excellent a source that law too is a trade. Now let our friends of the cloth come out with equal candor and assure us that they too are pleased to keep us company. So much has happened to make the poor devil of a doctor believe that everything combined and conspired against his welfare and happiness that it is really cheering to read that "the lawyer of to-day is a small man, because there is no demand for large ones."

It is the fault of the times in which we live. Professions were a necessity in the good old days. The era of electricity and machinery has seemed to remove the *raison d'être* of much that was formerly useful and ornamental. Let us accept the inevitable and keep cheerfully at work with the sustaining consciousness that lawyers and clergymen are also buckling down to their respective business pursuits, and that when called to attend a judge, supreme court justice, bishop, or priest, we can say to him, "Sir, what is your trade?"

News of the Week.

Petition to Change the Name of the New York York Cancer Hospital.—At a recent meeting of the board of managers of the New York Cancer Hospital a petition was presented, signed by the entire visiting and consulting staffs, to change the name of the hospital in such way as would omit the very objectionable and unpopular word of "cancer" in its title. The appeal was respectfully received and there is a hope that the proper steps will be taken to make the change possible. This is as it should be. The name "cancer" is particularly odious to patients suffering from the disease, and there is no necessity for its application to one of the best equipped surgical hospitals in Greater New York.

Medical-Practice Law in Washington State.—Dr. F. H. Coe, secretary of the Washington State Medical Society, writes that all persons intending to practise medicine or surgery in the State of Washington are obliged to pass an examination before the State board of medical examiners. These examinations are held the first Tuesday in January and the first Tuesday in July. The January meeting is held on the west side of the Cascade Mountains, and the July meeting on the east side. No temporary certificates are granted by this board, and no exception is made to this rule.

Typhoid Fever in Paterson.—During the month ending December 15th the number of cases of typhoid fever reported in Paterson, N. J., was 109. An investigation by the board of health, as already stated, traced the epidemic to an infected milk supply. Seventy of the cases occurred in families supplied by milk from one dairy.

Mr. Ernest Hart, whose serious illness we recently noted with regret, is now, we are most pleased to learn, practically convalescent.

The Public Spirit of a Medical Man.—Mr. Jonathan Hutchinson, of London, who has been described, with much justice and quite seriously, as an "all-around specialist," does not confine himself to medical teaching, but seeks also to spread a knowledge of useful matters among the people. He built some time ago an educational museum at Haslemere, near which he has a country seat, and on Sunday afternoons delivers lectures on scientific subjects. A course recently delivered was on, 1, instinct and habits; 2, epochs in man's history; 3, Browning and his poetry; 4, improved chronology; 5, fungi; 6, life, death, and terrestrial immortality. He now proposes, it is said, to establish a similar institution at Selby, his native town.

Paris Schools.—The restrictions recently placed upon foreign students in the French medical schools have been rescinded and the former liberal policy has been reestablished. American students can therefore matriculate as in the past.

Approval of the Marine Hospital Service.—A resolution was recently adopted in the Georgia Legislature providing that in all future epidemics all quarantine matters be turned over to the United States Marine Hospital Service, and memorializing Congress to pass a national quarantine law.

Strange Action of College Authorities. — Winthrop College for girls at Rock Hill, S. C., has been closed indefinitely, because of the existence of smallpox in the town. It is incomprehensible that the authorities should prefer to break up a large school rather than protect the pupils by vaccination.

Navy Department, Bureau of Medicine and Surgery, Washington, D. C.—Changes in the medical corps of the United States navy for the week ending December 18, 1897. Surgeon A. C. H. Russell detached from the *Lancaster* and ordered home on waiting orders.

Philadelphia Pædiatric Society.—A stated meeting of the Philadelphia Pædiatric Society was held on December 14th, the president, Dr. J. P. Crozer Griffith, in the chair. Dr. F. A. Packard reported a case of tetanus followed by recovery. The patient was a boy, twelve years old, and the source of the disease was not recognized, although the mouth was in an exceedingly bad condition and the possibility of infection through this channel was considered. Some of the symptoms were suggestive of hysteria, but after recovery there was no evidence of a neurotic state. Dr. Packard exhibited also two brothers with pseudo-hypertrophic muscular paralysis. Both displayed mental deficiency and it was thought also enlargement of the thyroid gland. Dr. Packard exhibited further a cretin, six years old. Dr. G. Hudson Makuen offered a communication dealing with speech defects in children and methods and results of treatment. He exhibited an interesting group of cases displaying most admirable results from intelligent educational treatment. Dr. E. R. Schreiner read for Dr. R. G. Curtin the report of a case of arsenical neuritis developing in the course of treatment of an attack of chorea with Fowler's solution. Dr. Clara T. Dercum reported a case of idiopathic multiple neuritis in a child five years old. Dr. M. H. Fussell described an otocephalic monster and exhibited the specimen. Nominations for officers for the ensuing year were made.

Obituary Notes.—Dr. G. Perry Reynolds, medical examiner for the town of Guilford, Conn., died on December 9th, aged sixty-eight years. He was a graduate of the New York University Medical School in the class of 1852.—Dr. James O. Van Hoevenberg died at his home on Staten Island, from the results of a paralytic stroke, on December 8th. He was seventy-six years of age.—Dr. Joseph R. Lewi, of Albany, N. Y., died at his home in that city on December 19th. He was born in 1820, and was graduated in medicine from the University of Vienna in 1847. He was attending physician to the Albany Hospital, a member of the New York State Medical Society, and a member and ex-president of the Albany County Medical Society. He leaves two sons, physicians, and one son, a pharmacist, as well as two daughters, who married physicians.—Dr. Joseph F. Edwards died at Atlantic City, N. J., on December 6th, of shock following an operation, necessitated by the result of a kick by a horse some two years ago. Dr. Edwards was graduated from the University of Pennsylvania in 1881, and became a resident physician in the Philadelphia Hospital. He was for three years State prison inspector at Trenton, N. J., and editor of the *Annals of Hygiene* and of the *Daily Lancet.*

Eastern Medical Society, New York.—The following officers were elected for the ensuing year: Dr. William S. Gottheil, *President;* Dr. A. Isaacs, *First Vice-President;* Dr. E. K. Browd, *Second Vice-President;* Dr. B. Gordon, *Treasurer;* Dr. S. Schaie, *Chairman of Committee on Admission;* Dr. R. Abrahams, *Recording Secretary.*

College of Physicians of Philadelphia.—A stated meeting of the section on general medicine of the College of Physicians of Philadelphia was held on December 13th, the president of the section, Dr. J. C. Wilson, in the chair. Dr. Alfred Stengel read a paper on "Delayed Resolution in Pneumonia, and Its Treatment." Dr. M. H. Fussell reported "Two Cases of Death without Discoverable Cause." In neither case did the conditions during life give rise to any anticipation of a fatal issue, and this remained unexplained by the conditions found post mortem.

"The Medical Times."—In the issue for December this excellent journal celebrates its silver anniversary. It was founded a quarter of a century ago, with the main object in view "to bring about a harmony in the medical profession, based upon toleration, upon freedom of thought, upon scientific investigation, and upon that mutual respect and courtesy which would naturally be expected in a learned profession where

there is so little really known and so much to learn." We congratulate our esteemed contemporary upon its twenty-five years of useful activity, and wish it as great success in the years to come as it has won for itself in the past.

Yellow-Fever Inoculation.—Dr. Domingos Freiere, whose claims of the discovery of a preventive and curative vaccine of yellow fever, made some years ago, were not substantiated, has been stimulated apparently by Sanarelli's alleged discovery to try again. The recent application of his serum in Rio de Janeiro has, he asserts, been most successful, having reduced the mortality in over thirteen thousand cases of yellow fever to about 0.5 per cent. In view of this experimenter's previous claims, it will be wise to await a more complete account of these trials before consigning yellow fever to the limbo of forgotten terrors of ancient days.

The Late Dr. William Warren Greene. — Dr. Charles Lyman Greene, of St. Paul, writes that he is making an effort to obtain a complete list of the articles published by his father, the late William Warren Greene, of Portland. The references are scattered and difficult to obtain, and he would therefore regard it as a favor if any of the old students or professional friends of Dr. Greene, who have reprints or references to articles, will kindly advise him concerning them.

The African Arrow Poison.—A British army surgeon, Dr. Macpherson, attached to a military expedition in the Uganda country, claims to have discovered that the injection of a solution of strychnine acts as an antidote to arrow poison, and he says that he has by this means saved many men who had been wounded by these weapons.

Yellow Fever in Jamaica.—It is reported that the epidemic of yellow fever in this island is practically at an end, although isolated cases are still reported in Kingston and some of the coast towns. The authorities are blamed for the severity of the visitation, which is attributed to the policy of belittlement and concealment which they adopted in the beginning, and abandoned only when the deaths of several prominent persons made further concealment impossible. It is said that it will be perfectly safe for Northerners to visit the island after the first of January.

An Example Worthy of Imitation.—*The Citrograph*, of Redlands, Cal., is a journal of a kind of which there are all too few. It refuses to disgrace its columns with medical advertisements of the indecent sort published in most of the secular papers. It is a lamentable fact that such virtue is so rare that examples of it, when discovered, are worthy of being recorded.

The New York Society for the Relief of Widows and Orphans of Medical Men.—The fifty-sixth annual statement of this society has recently been issued. The society took its origin at a social gathering of the profession at the house of Dr. Edward Delafield early in 1842, and a formal organization was completed at a meeting held November 26, 1842. At the close of 1843 the total number of members was sixty. In 1848 the membership was eighty, in 1858 it had risen to one hundred and ten, and in 1870 the roll of membership was one hundred and twenty-five. The members of the society now number one hundred and forty-five, of whom one hundred and eight are life and thirty-seven annual members. The first application for relief was in 1852, and at the present time the number of beneficiaries is nineteen. The funds of the society now amount to $225,615.44, securely invested, and the income for 1896–97 was $9,793.23. The society has extended aid to fifteen widows and four children of deceased members during the past year. Application for membership may be made through the president, secretary, or any member of the society. Under the present bylaws of the society the annuities allowed are: to the widow of a member an annuity of $400 a year, but for every ten dollars or multiple of ten of income an amount equal to fifty per cent. of said income shall be deducted from the annuity. Each child entitled to relief is allowed $100 per annum, subject to the same conditions as a widow.

The Charity Hospital Alumni Association.—The following officers were elected at a meeting of this association, held December 8, 1897: *President*, Dr. Walter B. Johnson; *Vice-President*, Dr. William Leland Stowell; *Secretary*, Dr. Charles J. Proben; *Treasurer*, Dr. Henry H. Schroeder; *Editor*, Dr. A. T. Muzzy.

Obituary.

J. BERRIEN LINDSLEY, M.D.,

NASHVILLE, TENN.

Dr. J. Berrien Lindsley died at his home in Nashville, Tenn., on December 7th, at the age of seventy-five years. He was born at Princeton, N. J., in 1822, his father, the Rev. Phillip Lindsley, having been at one time president of Princeton College and later of the University of Nashville. He received his medical degree from the University of Pennsylvania, in 1843, and immediately thereafter began to study for the Presbyterian ministry, being ordained in 1846. He preached for a time but his love for science was too great. He studied geology under Gerard Troost, and made an extensive geological survey of the Northern and Eastern States. Later he went to Europe and studied in the medical schools of Germany and France. He was one of the founders of the medical department of the University of Nashville. For the last twenty years he was very active in promoting public-health measures. In 1876 he was appointed health officer of Nashville; in 1880 he was elected to the chair of "State Preventive Medicine" in the medical department of the University of Tennessee; in 1877 he became a member of the State board of health.

At the time of his death Dr. Lindsley was a member of the Numismatic and Antiquarian Society, of Philadelphia; a charter member of the American Chemical Society; since 1851 a member of the American Medical Association; a fellow of the American Academy of Medicine; a director in the National Prison Association; a corresponding member of the National Prison Association of France; and treasurer and the Southern member of the executive committee of the American Public Health Association. Dr. Lindsley was the author of many treatises and shorter articles on medical, historical, and theological subjects. A widow and five children survive him.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

MEDICAL COUNCIL, NEW PHARMACOPŒIA, PRELIMINARY EXAMINATIONS, UNQUALIFIED ASSISTANTS—ROYAL SOCIETY—UNIVERSITY—MEDICO-CHIRURGICAL SOCIETY'S DEBATE ON PREVENTION OF TYPHOID—CLINICAL SOCIETY'S ADJOURNED DEBATE ON POTT'S DISEASE—MAIDSTONE—SIR W. GOWERS—SIR H. BURDETT—DEATH OF MR. FREEMAN, OF BATH.

London, December 2, 1897.

The General Medical Council continued its sitting for the usual time, and a good deal of routine business was got through and a number of cases of alleged infamous conduct were tried.

More interesting to you will be the announcement that the new pharmacopœia is now only to be seen through the press and will be published early in the new year. The council was assured by those who had had a hand in it that the work will do them great credit, surpassing all its predecessors.

On the question of preliminary education the council proved weak kneed. It is there that more stringency is needed. Several of the preliminary examinations accepted by the council are mere school tests, quite inadequate for entrance to a profession. Dental matters took up a good of time on Tuesday.

The wail of the unqualified assistant is already audible and will no doubt soon be heard throughout the land. But the decision of the council cannot be appealed from, and his occupation is gone. It is admitted that a number of worthy men must suffer, but so it is in other reforms, and no one can dispute that the repression of all unqualified practice is for the good of the public as well as the profession. The council should now seek powers to put an end to the grosser frauds of druggists, abortionists, quacks, and other parasites of the profession.

Lord Lister presided at the annual meeting of the Royal Society, which was held on Tuesday, and at the dinner in the evening. Both functions were successful. The Duke of Devonshire delivered an important speech deprecating the divorce that has too long existed between science and politics, and intimating that the government (of which he is a member) will again introduce its measure for a teaching university in London. This will probably send the proposed Westminster University into the limbo of the score of forgotten schemes that have preceded it. The present London University, a mere examining body, must be propitiated or superseded. Its senate has already invited a conference of the educational bodies which were recognized in the last bill.

The discussion by the Medico-Chirurgical Society on the prevention of typhoid, though it has not added to our knowledge of the subject, has set in order some of the more important points, reinforced the convictions of many, and brought into focus the views of some of our most advanced sanitarians. The opening of the debate was committed to Dr. Vivian Poore, who holds very strongly that the proper way of dealing with sewage is to return the solids to the land and the liquid to our rivers. Having shown how easy it is for our water supplies to become polluted, he remarked that "public water supplies must be regarded as causes of the epidemicity of enteric fever." It must be admitted that when polluted they diffuse the poison with completeness and insure its being brought to our mouths. Hence he urged that as many subdivisions as possible should be arranged and the supplies from different sources should never be mixed. Dr. Poore was obliged to admit that towns would not readily abandon their waterclosets, and that for London it seemed impossible to do so. Nevertheless, he lamented that people were being taught that the most decent way of treating fæces is to mix them with water, whereas they ought to be applied to the land and become a source of wealth and beauty while safeguarding health.

Professor Gairdner said that of late years his experience in fevers had been small, as the Glasgow local authorities had taken over the fever hospitals. He remarked that even now polluted water did not account for all cases, milk being a frequent purveyor of the poison. He mentioned an epidemic among the students which was at once arrested by stopping the supply of milk to the restaurant within the university.

Sir Richard Thorne Thorne took up the cudgels on the part of the water system, and of course had no difficulty in showing the impossibility in large cities of returning all fæces to the soil. He admitted that with thorough tillage there was little danger in applying excreta to the soil—that is normal dejecta; but it remained to be seen whether specific excreta could safely be thus utilized. Dr. S. Martin had been investigating for the local government board the occasional persistence of typhoid in particular localities. He found that typhoid bacilli would grow for only a few days in sterilized virgin soil, but in soil containing sewage, sterilized in the same way, the growth went on for two hundred days. It had been shown by others that in soil containing sewage the bacilli would remain quiescent in the winter and begin to grow rapidly when warm weather returned. He admitted that burning was safer than burial for the disposal of typhoid excreta, and said the best way was to mix them with sawdust and paraffin and burn them.

Prof. Rubert Boyce, of Liverpool, pleaded for systematic bacteriological examinations as the best means of preventing typhoid. The contents of drain and water pipes as well as other possible causes he would have submitted to frequent bacteriological examination. Laboratories have indeed been established for this purpose by some medical officers of health, and their example ought to be generally followed.

Dr. D. S. Davies, of Bristol, gave an account of the recent epidemic at Clifton and Bristol, which he had shown within four days was due to one milk supply. That was cut off and the epidemic subsided. Some rather misleading cases had been shown to occur through other milk venders supplementing their supply from the polluted farm. Dr. Davies would like a law to empower sanitary authorities to inspect and license dairies.

The Clinical Society has devoted another evening to M. Calot's plan of immediate reduction of spinal curvature in Pott's disease. The president opened by reading a translation of the paper submitted by M. Calot, and the secretary followed with some remarks contributed by M. Redard, of Paris, who was prevented from being present. Dr. Redard is much in favor of the operation; he has performed it in forty cases, without a single mishap or any kind of complication. He, however, admitted that all cases were not amenable to the treatment, and he had restricted the operation to those in which reduction was easy. He was utterly opposed to any rough or violent manipulation, and to any attempt to correct ankylosed curvatures.

Mr. Watson Cheyne said he thought the subject was hardly ripe for discussion, and they had to deal not only with deformity but with a disease. There were plenty of cases recorded already to enable an opinion to be formed in due time, and until then he thought it would be better to suspend operating.

Differences of opinion on this matter were expressed by the surgeons present, and Messrs. Jones and Tubby

replied to the criticisms which had been offered on their paper. They both believe in the future of Calot's plan, and consider it the best means of remedying the deformity and, moreover, of treating the disease. Their experience has shown that the theoretical dangers anticipated need not be dreaded in proper cases. They promised to bring forward these cases at a later date, when judgment of the results may be more safely formed.

Maidstone is not yet free from the epidemic of typhoid. Two fresh cases were notified yesterday, bringing the total up to eighteen hundred and seventy-seven.

The dinner in honor of Sir William Gowers was a great success.

Sir H. Burdett maintains his attitude about hospitals, but the indignation of general practitioners is increasing.

Mr. H. W. Freeman, surgeon to the Bath Hospital, and author of the "Thermal Baths of Bath," died on the 21st ult., aged fifty-five years. He was an able and zealous surgeon. Bath delighted to honor him. He was mayor of the "City of the Warm Vale" in 1889. He had a rather rare hobby for a doctor—a studfarm of thoroughbred horses, at which he took a few hours' rest when practice permitted.

"HONOR TO WHOM HONOR IS DUE."

To the Editor of the Medical Record.

Sir: I believe in giving honor where honor is due. As 1897 is drawing to a close and the Medical Record is about to enter upon a new year of usefulness, I wish to thank you for your highly commendable policy in refusing to admit into your reading-pages any advertisements in disguise. I make no accusations. I do not say that the doctor who extols to heaven Blank's iron preparation, or relates his marvellous success with A., B. & Co.'s mixture, gets remunerated for his labor; he may, and then again he may not. He may write his article in perfect sincerity and good faith, simply wishing to render a service to his medical confrères in bringing to their notice the virtues of a valuable preparation. Nor do I say that the publisher necessarily gets a check for printing such articles. But why serve such articles under a heavy disguise? Why sail under false colors? Every one will admit that it is exceedingly disagreeable and trying to one's patience to be reading a presumably scientific article, perhaps to become interested in the course and the details of a severe disease —and then all at once to perceive that the whole thing is a carefully and shrewdly masked eulogy of some proprietary compound. I do not know how others feel about it, but I feel as if I had been imposed upon, as if I had been cheated out of time and mental labor. More than once have I hurled such a journal into the wastebasket.

A recent number of a reputable journal, for the erudition and professional standing of whose editor I entertain the highest respect, contained eight "original" articles. No less than seven contained recommendations for certain proprietary preparations. The eighth contained a recommendation of a newly introduced "modified milk." If this is not a flagrant imposition, what is it? The proper place for such contributions is in the advertising pages of the journals and in the manufacturers' monographs. But if for some reasons they must be printed in the body of a respectable journal, why not at least print them under their proper headings: "The Wonderful Effects of Blank's Iron Preparation in Anæmia and Chlorosis," etc.? Then the reader sees what he is getting, and he can have his choice—to read or not to read.

But the object of this communication was not to criticise others. It was to thank you for giving us a medical journal full of able reading-matter—and reading-matter only—and to assure you that the intelligent part of the medical profession is duly conscious and appreciative of your far-seeing policy.

William J. Robinson, M.D.

111 East One Hundred and Twenty-eighth Street,
December 15, 1897.

THE SPITTING-NUISANCE.

To the Editor of the Medical Record.

Sir: I am of the opinion that any wholesome idea which has for its purpose the benefit of the community at large will bear repetition until it reaches the ear, the eye, irritates all senses of those whom it should concern, and compels them to have this suggestion materialized and brought into life.

I was delighted with the able and timely letter of Dr. W. J. Robinson in your issue of last June, and was waiting to see the fruits brought about by his labors. But, alas! months passed—the hot, summer months—and the same nuisance continues, and no measures have been taken to exterminate it.

Our current medical literature teems with articles about sanatoriums for our tuberculous patients, recommends new methods and drugs, expounds new theories, how to do away with the unpardonable existence of the microbes—and here under our eyes the dissemination of germs of all kinds and denominations is going on without the least hindrance on the part of the authorities. I refer to the spitting-nuisance in our surface cars and other public places. Where shall one spit?

On entering the elevated and some of the cable cars, one sees a "warning" conspicuously displayed in some corner, "warning" us not to expectorate on the floor, and this is issued by the board of health. "It is a timely ordinance," one thinks to himself. But the same one becomes painfully disappointed when his wandering eye fails to discover any substitute which should have accompanied the above order. Where is the logic, the common sense?

This neglect in providing the public with such an indispensable utensil reminds me of an ancient story, which reads thus: "Marcus Licinius Crassus, the Rich, invited once upon a time the famous cynic philosopher, Diogenes, to his palace, with the intention of displaying before him his wealth. The latter accepted the invitation, and, while expressing to his host his admiration of all he beheld, he was taken with a fit of coughing—and spit his raised sputum into the face of the almighty First Triumvir Crassus. In reply to the indignant protest of the latter, the cynic said: 'Sir, this is the dirtiest place in your palace.'"

Now is not this "warning" alluded to above a mere mockery? Is this, again, a law or order imposed upon a public to be violated simply because it cannot physically abide by it? Where shall one spit when there are no spittoons to be found on the floor?

The act of expectorating on floors is so revolting to all senses of decency and propriety, not only to those who are, *nolens volens*, compelled to look at it, but even to the perpetrator himself, that were there any means on hand to avoid it every person of any degree of education would surely avail himself of it and not commit any nuisance.

Hundreds of invalids, afflicted with pulmonary or laryngeal tuberculosis, chronic bronchitis, syphilis, etc., are crowding daily the cars on their way to the large dispensaries—and these people must spit, they must dislodge their expectoration somewhere. They can't help it—this is their misfortune. Shall we

"warn" them not to expectorate, or provide them with properly adjusted spittoons in accordance with modern sanitary requirements? We believe that the latter would be the proper course to pursue. But then there would be no need of "warnings."

Physicians, the public's ever-ready sanitary guard, in their respective societies, and every public-spirited citizen individually, must see to it that charity begins at home; that inasmuch as sanatoriums are concededly an urgent necessity, there is a crying need to spare the community the spitting-nuisance. Half-measures are no measures. To enact laws without offering adequate means to carry them out is to educate citizens to violate laws unwittingly. And the remedy is so simple!

HENRY LEVIEN, M.D.

239 EAST BROADWAY.

VACCINATION BY THE HEALTH DEPARTMENT.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR: Is it not possible to correct the abuses to which the profession and the people are subjected by the health department, or must we suffer in silence?

Is it not time that medical men should assert themselves when the health department assumes that the latter are as a body untruthful, and that the name of a reputable physician signed on a schoolboy's certificate of vaccination stands for naught, if not for a lie? Yet such is the fact.

In discussing the question of school vaccination and the inspection of schoolchildren, I learned to-day from one of the health-department vaccinators that they have received the following instructions from their superiors:

That they must vaccinate a certain number (seventeen) of children each day.

And that, as concerns certificates of satisfactory vaccination held by children who have received them from private physicians, they should first vaccinate the child and then look at the certificate!

As a physician and a gentleman I protest against any such high-handed and insolent disregard of a certificate given by me to a patient who pays me for the service, on the part of the health department or any one else. I protest against the injury done me when the health department says to a patient that my certificate is not to be respected, because doctors sign such certificates whether the case merits one or not. If they find any such case let them discipline the man at fault, instead of casting a slur on the profession at large.

As to the duty of vaccinating a given number of cases each day, it leads to an entire disregard of the right of parents to object to having their children vaccinated by the health department's irresponsible young men, who overlook the injustice they do to the people and the profession in their anxiety to draw their salary. It leads to the pitiful state of affairs, wherein a woman, holding in her arms an infant sick with vaccinia and a very sore arm—the result of a health-department vaccination—has her second child (two years old) vaccinated in spite of her earnest plea for a little delay, out of consideration for her difficulty in caring for the infant, because the vaccinator needed one more name to make up his seventeen. This case came within my observation, and I saw this poor woman, in the midst of her troubles, endeavoring to look after her home and care for the two children, both of whom had very bad arms. She told me this story with tears of genuine sorrow.

Have we, have the people, no voice in these matters, or must we bend the back and suffer?

WILLIAM J. GREANELLÉ, M.D.

UNIVERSITY HEIGHTS, NEW YORK CITY.

"SHOULD MINISTERS PAY DOCTORS?"

TO THE EDITOR OF THE MEDICAL RECORD:

SIR: *A propos* of your query, "Should Ministers Pay Doctors?" I would like to relate an incident that happened several years ago in a small town something less than a thousand miles from here. I was summoned one morning to see the son of a local minister. The boy was an only child; he was the idol of his parents, and all their hopes were centred in him. His sickness developed into one of the worst cases of typhoid fever I have ever seen, and I attended him assiduously day and night; for weeks his life hung in a balance, and, in addition to being the physician in the case, I was called upon to do a large share of the nursing. Finally he began to improve, and with care and attention his recovery was assured. The minister and his wife could hardly find words with which to express their gratitude; they fairly wept for joy, and assured me that they were under everlasting obligations to me for having saved their darling. Some time after the case was discharged the minister called to see me and asked for my bill. I told him that I had no bill against him, and that I made it a rule not to charge the local ministers for my services. He left with the most profuse thanks and every assurance of gratitude, etc. Two or three weeks later I met him again: he said he had talked the matter over with his wife, and they had decided that it was nothing but just and right that I should be paid for having saved their precious boy; they were anxious to show their gratitude in a practical manner, and they would feel very much hurt unless I accepted something from them. I told him then to send me whatever he thought would be a proper fee for attending so grave a case, and that I would leave it entirely with him. A few nights after this I returned home from a long and tiresome drive in the country, and had sat down to a cold and scanty supper, when my wife smilingly brought forth a package carefully wrapped and tied, and addressed to me with the compliments of Mr. and Mrs. So-and-So. We were all agog with curiosity and excitement, and couldn't open that package fast enough; we didn't take time to untie the string, we cut it, and after removing sheet after sheet of wrapping-paper came to a pasteboard box—a shoe box. We lifted the lid carefully, and there in the bottom of that box reposed, not a gold watch and chain or a cut-glass vase, but a pineapple—a miserable, little, weazened, shrivelled-up pineapple, that could have been bought anywhere in that county for five cents! I learned afterward that my ministerial friend had been presented with a barrel of them. "Should ministers pay doctors?" They pay me.

JUNIUS F. LYNCH, M.D.

NORFOLK, VA., DECEMBER 13, 1897.

Placenta Prævia.—External version is recommended in placenta prævia, so that, the presentation being made pelvic, the hemorrhage may be arrested by drawing down and keeping up traction on a foot. The version is generally possible, as the placenta prevents the early engagement of the head; after it has been performed, if the os is not sufficiently dilated to admit two fingers, when bleeding begins one must apply a tampon and wait; if the genitals are relaxed, it is generally easy, even without an anæsthetic, to bring down a foot, and by moderate and steady traction to deliver the woman without further loss of blood. If the bleeding be severe and alarming, it is better to employ combined podalic version at once, or to apply a tampon before attempting external version. —BAUMM, *Centralb. f. Gynäkol.*, No. 39, 1896.

Therapeutic Hints.

Tuberculous Laryngitis.—A combination of lactic acid and carbolic acid in glycerin is recommended for tuberculous laryngitis, on the theory that there will be less irritation from the lactic acid, on account of the anæsthetic effect of the carbolic acid.—Dr. Botey, *Kansas Medical Journal*, May 1st.

Diseases of the Bile Ducts.—When it is borne in mind that the bile ducts have only a limited calibre, that the mucous lining is capable of swelling so as to occlude the passage, and that the secretion of bile takes place under very low blood tension (according to Naunyn one hundred and ten to two hundred and twenty millimetres of water), and is therefore arrested by slight backward pressure, it is easy to comprehend how catarrh in this situation should lead to jaundice, though absolute proof of the correctness of the theory is wanting, since simple catarrhal jaundice furnishes no post-mortem subjects.—Dr. Mayo Robson, *Lancet*, May 29th.

To Avoid Complications in Measles.—Take a flannel blanket, wring it out of water as hot as the hand can bear, and wrap the patient up in this with cold cloth on the head. Keep him in pack about twelve or fifteen minutes; then transfer to a dry blanket and allow him to cool gradually; this brings the eruption to the surface and relieves the mucous and serous membranes. If necessary, give antipyretics for fever and sedatives for cough. I have never had any complications with this treatment.—Merrimars, *Kansas City Medical Index*.

The Course of Bronchitis.—Recovery from bronchitis depends greatly upon two things: First, the condition of the bronchial lymphatics, and second, the condition of the nervous system. 1. When the mucus that is poured out in large quantities is not rapidly absorbed, then the case is apt to be prolonged because the reabsorbent glands are not active. In such cases it is a mistake to give remedies that will loosen the cough. A loose cough is apt to be a protracted cough. Lessen the inflammation, and the cough will usually subside. 2. When the nervous energies of the lungs are deranged, that would give us atelectasis in the young and old. Then we may expect a protracted case and complications like capillary bronchitis or broncho-pneumonia, or possibly an asthmatic attack. In true normal bronchitis, the appetite remains. In pneumonia it is lost. This is a diagnostic sign of value. The better the appetite, as a rule the shorter the attack. This fact, doubtless, gave rise to the saying: "Feed a cold, but starve a fever."—Duncan, *Medical Brief*, April, 1897.

Treatment of Nephritis in Children.—Calomel is indispensable. It stimulates the liver to action, and by the increased flow of bile the contents of the bowel are rendered more fluid and the elements to be excreted more soluble in the blood, thus proving less irritating to the kidneys. The salines are of great service as hydragogues. Hot-air baths must be relied upon for their diaphoretic action, as pilocarpine is very uncertain and not to be depended upon. The best method of applying heat is by using an apparatus which will supply hot air under the bedclothes. This can be used continuously, as it does not cause prostration. Liquor ammoniæ acetatis is an efficient remedy in the stage of convalescence, acting beneficially upon the kidneys and the skin. The high tension in the arteries can be combated more efficiently by blood letting than otherwise, its beneficial effect being seen upon the pulse, the nervous system, and the kidneys in the lowering of blood pressure. A very valuable agent is water, given perhaps plain after filtration or boiling, as young children take carbonated waters with reluctance. Given *ad libitum*, and at regular intervals if the patient does not call for it, it acts as a diuretic, without causing any irritation. If refused by the mouth, it acts well as enema if large doses are given. —Tuley.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending December 18, 1897:

	Cases.	Deaths.
Tuberculosis	181	93
Typhoid fever	26	13
Scarlet fever	215	6
Measles	306	12
Diphtheria	178	20
Laryngeal diphtheria (croup)	4	4
Chicken-pox	32	0

Pneumonia in Childhood.—The respiration in children suffering from croupous pneumonia assumes a peculiar type, being made up of a short rapid inspiration, a pause in the inspiratory position (absent only during rapid breathing), and a jerky, noisy expiration.—Eshner.

Limits of the Power of Hearing.—Lord Rayleigh observed, in a lecture at the Royal Institution on the limits of audition, that one of the latest determinations of the frequency of vibrations to which the ear is sensitive gave the lower limit as twenty-four thousand complete vibrations a second, and the upper as about twenty thousand. These limits are, however, very ill determined, because the matter depends largely on the vigor of the vibration and the individual ear. Old people do not hear high notes which are audible to young persons, and the speaker had reason to believe that infants hear notes which persons twenty or thirty years of age cannot detect. Experiments on the extent of vibration necessary to audition were described, which appeared to show that a vibration having an amplitude expressed in centimetres by a fraction having eight for its numerator, and one followed by eight ciphers for its denominator, could still affect the ear.—*Appleton's Popular Science Monthly*.

Health Reports.—The following statistics concerning yellow fever, cholera, and small-pox have been received in the office of the supervising surgeon-general of the United States Marine Hospital service, during the week ended December 18, 1897:

		Cases.	Deaths.
Yellow Fever—United States.			
Alabama, Flomaton	December 1st to 14th	2	1
Louisiana, New Orleans	December 5th to 11th	5	
Yellow Fever—Foreign.			
Brazil, Para	November 26th to 27th		14
Cuba, Havana	December 2d to 9th		2
Matanzas	December 2d to 8th		1
Regla	December 3d to 9th		3
Cholera—Foreign.			
India, Madras	October 30th to November 5th		2
Small-Pox—United States.			
Alabama, Birmingham	December 5th to 11th	17	2
Small-Pox—Foreign.			
Cuba, Havana	December 3d to 9th		6
England, Southampton	November 14th to 20th	2	
Russia, Odessa	November 21st to 27th	7	3
Scotland, Glasgow	November 21st to 27th	1	

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